APPENDIX
B

EXPERIMENTAL RESULTS

B.1 Results for TD-EVRP-STW

In this section, we will present the results for TD-EVRP-STW using various methods on the datasets I_1 and I_2. The data will be organized in tables formatted as follows:

- **Instance Name**: The first column lists the name of each instance.
- **Customers and AFSs**: The next two columns, labeled 'C' and 'A', display the number of customers and available AFSs for each instance, respectively.
- **Solution Quality**: The third column provides the average solution quality across 30 independent runs, with the standard deviation noted in parentheses.
- **Best and Worst Solutions**: The fourth and fifth columns report the best and worst solutions found in all 30 runs, including the frequency of these solutions (number of times obtained) in parentheses.
- **Objective Function Components**: The sixth and seventh columns break down the two main components of the objective function. Column six shows the average total distance traveled, while column seven details the average penalty incurred from missing time windows, again with standard deviations in parentheses.
- **Average Number of Vehicles Used**: Finally, the table includes the average number of vehicles utilized in the solutions.

B.1.1 Results on the instance set I_1

TABLE B.1: Results for TD-EVRP-STW obtained by GVNS on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101C10	10	5	385.31 (4.93)	383.75 (26)	399.34 (1)	379.42 (0.0)	5.89 (4.93)	4
c101C5	5	3	247.15 (0.0)	247.15 (30)	247.15 (30)	247.15 (0.0)	0.0 (0.0)	3
c103C15	15	5	356.52 (11.11)	348.54 (18)	373.34 (1)	355.4 (11.05)	1.12 (2.93)	3.3
c103C5	5	2	165.67 (0.0)	165.67 (30)	165.67 (30)	165.67 (0.0)	0.0 (0.0)	3
c104C10	10	4	304.03 (41.55)	273.93 (17)	371.23 (6)	273.93 (0.0)	30.1 (41.55)	2
c106C15	15	3	277.5 (7.51)	275.13 (29)	298.89 (1)	275.13 (0.0)	2.38 (7.51)	3
c202C10	10	5	251.94 (0.0)	251.94 (30)	251.94 (30)	251.94 (0.0)	0.0 (0.0)	2
c202C15	15	5	373.25 (11.65)	369.56 (25)	406.41 (1)	369.56 (0.0)	3.68 (11.65)	3
c205C10	10	3	228.28 (0.0)	228.28 (30)	228.28 (30)	228.28 (0.0)	0.0 (0.0)	2
c206C5	5	4	236.21 (0.0)	236.21 (30)	236.21 (30)	236.21 (0.0)	0.0 (0.0)	2
c208C15	15	4	300.55 (0.0)	300.55 (30)	300.55 (30)	300.55 (0.0)	0.0 (0.0)	2
c208C5	5	3	158.48 (0.0)	158.48 (30)	158.48 (30)	158.48 (0.0)	0.0 (0.0)	1
r102C10	10	4	270.24 (18.61)	249.19 (8)	316.8 (1)	249.19 (0.0)	21.06 (18.61)	3
r102C15	15	8	438.67 (62.34)	397.99 (16)	597.64 (1)	377.39 (0.0)	61.28 (62.34)	5
r103C10	10	3	175.36 (0.0)	175.36 (30)	175.36 (30)	171.71 (0.0)	3.65 (0.0)	2
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	353.4 (42.2)	323.79 (7)	439.31 (1)	326.29 (7.58)	27.11 (42.94)	3.4
r105C5	5	3	181.02 (0.0)	181.02 (30)	181.02 (30)	156.08 (0.0)	24.94 (0.0)	2
r201C10	10	4	222.43 (0.0)	222.43 (30)	222.43 (30)	217.68 (0.0)	4.76 (0.0)	3
r202C15	15	6	380.24 (34.64)	355.77 (12)	431.38 (1)	353.28 (7.43)	26.96 (35.4)	3
r202C5	5	3	142.65 (0.0)	142.65 (30)	142.65 (30)	142.65 (0.0)	0.0 (0.0)	2
r203C10	10	5	232.68 (0.0)	232.68 (30)	232.68 (30)	232.68 (0.0)	0.0 (0.0)	2
r203C5	5	4	179.06 (0.0)	179.06 (30)	179.06 (30)	179.06 (0.0)	0.0 (0.0)	1
r209C15	15	5	307.68 (0.0)	307.68 (30)	307.68 (30)	307.68 (0.0)	0.0 (0.0)	3
rc102C10	10	4	455.09 (14.61)	450.47 (29)	496.68 (1)	450.47 (0.0)	4.62 (14.61)	5
rc103C15	15	5	426.98 (47.31)	397.67 (22)	503.66 (1)	397.67 (0.0)	29.31 (47.31)	4
rc105C5	5	4	273.34 (0.0)	273.34 (30)	273.34 (30)	220.14 (0.0)	53.2 (0.0)	2
rc108C10	10	4	400.0 (57.0)	345.93 (14)	454.08 (16)	345.93 (0.0)	54.08 (57.0)	3
rc108C15	10	5	421.02 (102.42)	369.55 (19)	614.82 (7)	369.55 (0.0)	51.47 (102.42)	3
rc108C5	5	4	399.07 (0.0)	399.07 (30)	399.07 (30)	253.93 (0.0)	145.14 (0.0)	2
rc201C10	10	4	310.06 (0.0)	310.06 (30)	310.06 (30)	310.06 (0.0)	0.0 (0.0)	3
rc202C15	15	5	397.2 (0.0)	397.2 (30)	397.2 (30)	397.2 (0.0)	0.0 (0.0)	3
rc204C15	15	7	351.24 (3.29)	348.7 (17)	355.29 (10)	351.24 (3.29)	0.0 (0.0)	2.4
rc204C5	5	4	176.39 (0.0)	176.39 (30)	176.39 (30)	176.39 (0.0)	0.0 (0.0)	1
rc205C10	10	4	357.13 (40.22)	325.98 (18)	403.87 (10)	325.98 (0.0)	31.16 (40.22)	2
rc208C5	5	3	167.98 (0.0)	167.98 (30)	167.98 (30)	167.98 (0.0)	0.0 (0.0)	1

Table B.2: Results for TD-EVRP-STW obtained by GRASP on the instance set I_1.

Instance	**C**	**A**	**Value**					**Trucks**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Distance** (σ)	**Penalty** (σ)	
c101C10	10	5	401.13 (0.0)	401.13 (30)	401.13 (30)	401.13 (0.0)	0.0 (0.0)	4
c101C5	5	3	250.04 (0.0)	250.04 (30)	250.04 (30)	250.04 (0.0)	0.0 (0.0)	4
c103C15	15	5	371.8 (0.81)	371.41 (24)	373.34 (6)	371.41 (0.0)	0.38 (0.81)	4
c103C5	5	2	479.05 (404.58)	165.67 (18)	949.13 (10)	165.67 (0.0)	313.39 (404.58)	3
c104C10	10	4	295.55 (8.96)	273.93 (1)	299.63 (25)	295.55 (8.96)	0.0 (0.0)	2.8
c106C15	15	3	272.29 (3.43)	271.21 (26)	282.06 (1)	272.29 (3.43)	0.0 (0.0)	3.1
c202C10	10	5	264.46 (0.0)	264.46 (30)	264.46 (30)	264.46 (0.0)	0.0 (0.0)	3
c202C15	15	5	369.56 (0.0)	369.56 (30)	369.56 (30)	369.56 (0.0)	0.0 (0.0)	3
c205C10	10	3	228.28 (0.0)	228.28 (30)	228.28 (30)	228.28 (0.0)	0.0 (0.0)	2.2
c206C5	5	4	241.49 (0.0)	241.49 (30)	241.49 (30)	241.49 (0.0)	0.0 (0.0)	2
c208C15	15	4	300.55 (0.0)	300.55 (30)	300.55 (30)	300.55 (0.0)	0.0 (0.0)	2
c208C5	5	3	205.0 (0.0)	205.0 (30)	205.0 (30)	205.0 (0.0)	0.0 (0.0)	2
r102C10	10	4	267.56 (9.68)	249.19 (6)	272.16 (22)	249.19 (0.0)	18.37 (9.68)	3
r102C15	15	8	539.29 (62.99)	458.62 (7)	597.64 (15)	377.4 (0.04)	161.89 (63.0)	5
r103C10	10	3	175.36 (0.0)	175.36 (30)	175.36 (30)	171.71 (0.0)	3.65 (0.0)	3.2
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	407.93 (48.7)	337.36 (9)	438.17 (21)	337.36 (0.0)	70.57 (48.7)	4
r105C5	5	3	172.45 (26.36)	156.08 (20)	210.65 (8)	156.08 (0.0)	16.37 (26.36)	2.3
r201C10	10	4	222.43 (0.0)	222.43 (30)	222.43 (30)	217.68 (0.0)	4.76 (0.0)	3
r202C15	15	6	359.84 (1.89)	358.12 (1)	364.0 (1)	353.36 (1.74)	6.47 (0.33)	3
r202C5	5	3	147.12 (7.19)	142.65 (23)	157.55 (7)	147.12 (7.19)	0.0 (0.0)	2.3
r203C10	10	5	232.68 (0.0)	232.68 (30)	232.68 (30)	232.68 (0.0)	0.0 (0.0)	2
r203C5	5	4	201.78 (4.73)	199.54 (23)	210.76 (6)	201.78 (4.73)	0.0 (0.0)	2.2
r209C15	15	5	347.07 (7.12)	341.56 (18)	355.34 (11)	341.56 (0.0)	5.51 (7.12)	3.9
rc102C10	10	4	465.48 (47.47)	450.47 (29)	600.57 (1)	447.89 (8.16)	17.59 (55.62)	4.8
rc103C15	15	5	426.21 (36.84)	397.67 (17)	469.01 (10)	397.67 (0.0)	28.54 (36.84)	4
rc105C5	5	4	276.17 (22.02)	238.05 (5)	290.7 (17)	238.05 (0.0)	38.12 (22.02)	3
rc108C10	10	4	398.8 (4.6)	391.26 (6)	404.93 (7)	392.39 (2.39)	6.41 (3.38)	4
rc108C15	10	5	467.44 (103.42)	369.55 (1)	609.82 (8)	393.45 (40.78)	73.99 (110.49)	3.4
rc108C5	5	4	399.07 (0.0)	399.07 (30)	399.07 (30)	253.93 (0.0)	145.14 (0.0)	2
rc201C10	10	4	310.06 (0.0)	310.06 (30)	310.06 (30)	310.06 (0.0)	0.0 (0.0)	3
rc202C15	15	5	445.12 (63.38)	405.53 (10)	536.97 (8)	444.31 (63.95)	0.82 (1.05)	3.9
rc204C15	15	7	353.22 (3.13)	348.7 (11)	355.29 (16)	353.22 (3.13)	0.0 (0.0)	2.7
rc204C5	5	4	185.16 (0.0)	185.16 (30)	185.16 (30)	185.16 (0.0)	0.0 (0.0)	2
rc205C10	10	4	344.95 (6.13)	341.38 (21)	355.91 (6)	343.36 (3.19)	1.58 (3.34)	3.3
rc208C5	5	3	203.94 (7.92)	200.18 (22)	218.97 (5)	200.18 (0.0)	3.76 (7.92)	2

TABLE B.3: Results for TD-EVRP-STW obtained by ACO on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101C10	10	5	449.37 (0.0)	449.37 (30)	449.37 (30)	449.37 (0.0)	0.0 (0.0)	5
c101C5	5	3	259.73 (16.8)	250.04 (16)	292.44 (1)	259.73 (16.8)	0.0 (0.0)	3.9
c103C15	15	5	460.68 (14.54)	441.12 (1)	484.11 (1)	459.68 (16.1)	1.0 (2.12)	5.7
c103C5	5	2	165.67 (0.0)	165.67 (30)	165.67 (30)	165.67 (0.0)	0.0 (0.0)	3
c104C10	10	4	373.99 (10.43)	344.32 (1)	377.42 (26)	364.26 (11.22)	9.73 (3.42)	3.8
c106C15	15	3	365.37 (8.54)	349.21 (1)	379.76 (1)	365.14 (9.04)	0.23 (0.73)	5.1
c202C10	10	5	309.71 (0.0)	309.71 (30)	309.71 (30)	309.71 (0.0)	0.0 (0.0)	4
c202C15	15	5	512.54 (6.5)	504.5 (1)	523.84 (1)	512.54 (6.5)	0.0 (0.0)	6.1
c205C10	10	3	322.97 (0.0)	322.97 (30)	322.97 (30)	322.97 (0.0)	0.0 (0.0)	4
c206C5	5	4	258.04 (13.46)	241.49 (7)	268.42 (19)	258.04 (13.46)	0.0 (0.0)	3.5
c208C15	15	4	478.34 (6.86)	468.24 (1)	486.93 (1)	478.34 (6.86)	0.0 (0.0)	5.7
c208C5	5	3	210.19 (11.56)	177.91 (1)	220.12 (1)	210.19 (11.56)	0.0 (0.0)	1.9
r102C10	10	4	298.14 (0.0)	298.14 (30)	298.14 (30)	298.14 (0.0)	0.0 (0.0)	5
r102C15	15	8	476.85 (3.43)	472.85 (8)	480.61 (1)	475.02 (5.57)	1.83 (5.79)	7.7
r103C10	10	3	209.45 (0.0)	209.45 (30)	209.45 (30)	209.45 (0.0)	0.0 (0.0)	4
r104C5	5	3	137.01 (0.0)	137.01 (30)	137.01 (30)	137.01 (0.0)	0.0 (0.0)	2
r105C15	15	6	434.11 (7.16)	415.68 (1)	442.05 (1)	434.11 (7.16)	0.0 (0.0)	6.6
r105C5	5	3	195.31 (0.0)	195.31 (30)	195.31 (30)	195.31 (0.0)	0.0 (0.0)	4
r201C10	10	4	260.0 (0.0)	260.0 (30)	260.0 (30)	255.24 (0.0)	4.76 (0.0)	4
r202C15	15	6	577.37 (34.43)	510.54 (1)	619.55 (5)	571.46 (37.39)	5.92 (7.07)	6.2
r202C5	5	3	157.55 (0.0)	157.55 (30)	157.55 (30)	157.55 (0.0)	0.0 (0.0)	3
r203C10	10	5	307.88 (0.0)	307.88 (30)	307.88 (30)	307.88 (0.0)	0.0 (0.0)	4
r203C5	5	4	227.94 (1.2)	226.66 (9)	230.75 (1)	224.42 (10.14)	3.51 (11.11)	2.9
r209C15	15	5	456.3 (0.0)	456.3 (30)	456.3 (30)	456.3 (0.0)	0.0 (0.0)	7
rc102C10	10	4	486.37 (3.78)	475.62 (1)	487.56 (29)	484.92 (8.35)	1.45 (4.57)	5.9
rc103C15	15	5	476.33 (12.51)	457.16 (1)	495.4 (1)	473.26 (10.62)	3.07 (6.08)	5.1
rc105C5	5	4	237.25 (4.65)	228.4 (1)	239.46 (23)	235.88 (7.54)	1.37 (2.89)	2.8
rc108C10	10	4	417.8 (14.1)	403.0 (1)	439.06 (8)	417.8 (14.1)	0.0 (0.0)	4.2
rc108C15	10	5	512.09 (88.69)	468.76 (11)	680.34 (4)	512.09 (88.69)	0.0 (0.0)	5.6
rc108C5	5	4	271.74 (4.99)	262.27 (8)	274.1 (22)	271.74 (4.99)	0.0 (0.0)	2
rc201C10	10	4	369.73 (0.0)	369.73 (30)	369.73 (30)	369.73 (0.0)	0.0 (0.0)	5
rc202C15	15	5	532.11 (10.31)	519.67 (1)	549.07 (1)	532.11 (10.31)	0.0 (0.0)	6.1
rc204C15	15	7	554.22 (41.87)	507.84 (1)	611.82 (1)	554.22 (41.87)	0.0 (0.0)	3.8
rc204C5	5	4	187.69 (0.0)	187.69 (30)	187.69 (30)	187.69 (0.0)	0.0 (0.0)	3
rc205C10	10	4	446.84 (6.15)	434.31 (1)	449.75 (25)	446.84 (6.15)	0.0 (0.0)	5
rc208C5	5	3	190.47 (0.83)	189.82 (18)	191.44 (10)	185.78 (0.42)	4.68 (0.42)	1

Table B.4: Results for TD-EVRP-STW obtained by ACOLS on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101C10	10	5	412.33 (35.86)	383.75 (6)	495.18 (1)	384.73 (7.81)	27.6 (35.66)	3.7
c101C5	5	3	247.15 (0.0)	247.15 (30)	247.15 (30)	247.15 (0.0)	0.0 (0.0)	3
c103C15	15	5	371.8 (0.81)	371.41 (23)	373.34 (4)	371.41 (0.0)	0.38 (0.81)	4
c103C5	5	2	873.81 (248.89)	165.67 (1)	964.23 (6)	165.67 (0.0)	708.14 (248.89)	3
c104C10	10	4	273.93 (0.0)	273.93 (30)	273.93 (30)	273.93 (0.0)	0.0 (0.0)	2
c106C15	15	3	275.13 (0.0)	275.13 (30)	275.13 (30)	275.13 (0.0)	0.0 (0.0)	3
c202C10	10	5	251.94 (0.0)	251.94 (30)	251.94 (30)	251.94 (0.0)	0.0 (0.0)	2
c202C15	15	5	378.45 (18.26)	369.56 (12)	415.7 (1)	378.45 (18.26)	0.0 (0.0)	3.1
c205C10	10	3	228.28 (0.0)	228.28 (30)	228.28 (30)	228.28 (0.0)	0.0 (0.0)	2
c206C5	5	4	239.94 (2.5)	236.21 (4)	241.49 (19)	239.94 (2.5)	0.0 (0.0)	2.3
c208C15	15	4	300.55 (0.0)	300.55 (30)	300.55 (30)	300.55 (0.0)	0.0 (0.0)	2
c208C5	5	3	195.7 (19.61)	158.48 (4)	205.0 (22)	195.7 (19.61)	0.0 (0.0)	1.8
r102C10	10	4	270.49 (7.51)	249.19 (1)	273.47 (10)	244.38 (5.07)	26.11 (10.65)	3
r102C15	15	8	459.57 (46.56)	410.69 (7)	525.73 (1)	410.14 (5.39)	49.44 (48.52)	5.1
r103C10	10	3	175.36 (0.0)	175.36 (30)	175.36 (30)	171.71 (0.0)	3.65 (0.0)	2.7
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	382.47 (48.9)	334.21 (7)	438.17 (1)	330.69 (8.19)	51.78 (54.94)	3.6
r105C5	5	3	169.03 (22.83)	156.08 (23)	210.65 (7)	156.08 (0.0)	12.94 (22.83)	2
r201C10	10	4	222.43 (0.0)	222.43 (30)	222.43 (30)	217.68 (0.0)	4.76 (0.0)	3
r202C15	15	6	381.64 (29.2)	360.16 (4)	459.26 (1)	373.92 (10.83)	7.73 (24.43)	3.2
r202C5	5	3	142.65 (0.0)	142.65 (30)	142.65 (30)	142.65 (0.0)	0.0 (0.0)	2
r203C10	10	5	232.68 (0.0)	232.68 (30)	232.68 (30)	232.68 (0.0)	0.0 (0.0)	2
r203C5	5	4	195.34 (0.61)	194.19 (4)	195.63 (24)	195.34 (0.61)	0.0 (0.0)	2
r209C15	15	5	334.15 (18.16)	307.68 (7)	355.34 (6)	331.39 (15.28)	2.76 (5.81)	3.4
rc102C10	10	4	461.15 (9.59)	450.47 (1)	480.18 (1)	452.03 (0.55)	9.12 (9.39)	5
rc103C15	15	5	513.04 (76.15)	397.67 (4)	594.61 (10)	397.67 (0.0)	115.37 (76.15)	4
rc105C5	5	4	278.38 (2.66)	273.34 (4)	279.64 (26)	220.14 (0.0)	58.24 (2.66)	2
rc108C10	10	4	464.96 (31.65)	438.76 (5)	523.82 (4)	345.93 (0.0)	119.04 (31.65)	3
rc108C15	10	5	505.41 (109.14)	369.55 (1)	618.51 (1)	372.3 (1.54)	133.11 (108.65)	3
rc108C5	5	4	341.02 (74.95)	253.93 (11)	399.07 (16)	253.93 (0.0)	87.08 (74.95)	2
rc201C10	10	4	310.06 (0.0)	310.06 (30)	310.06 (30)	310.06 (0.0)	0.0 (0.0)	3
rc202C15	15	5	416.59 (8.39)	405.53 (5)	429.1 (1)	416.18 (8.38)	0.41 (0.86)	3.7
rc204C15	15	7	353.85 (12.23)	333.14 (4)	366.79 (7)	353.85 (12.23)	0.0 (0.0)	2.6
rc204C5	5	4	178.61 (1.17)	176.39 (4)	179.16 (25)	178.61 (1.17)	0.0 (0.0)	1
rc205C10	10	4	460.58 (149.13)	325.98 (1)	724.0 (4)	332.17 (14.1)	128.41 (161.16)	2.7
rc208C5	5	3	168.93 (3.0)	167.98 (26)	177.47 (1)	168.93 (3.0)	0.0 (0.0)	1

Table B.5: Results for TD-EVRP-STW obtained by BCOi on the instance set I_1.

Instance	**C**	**A**	**Value**					**Trucks**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Distance** (σ)	**Penalty** (σ)	
c101C10	10	5	479.91 (8.68)	464.65 (1)	487.58 (7)	476.98 (9.22)	2.94 (5.54)	6.1
c101C5	5	3	254.23 (8.83)	250.04 (24)	270.99 (4)	254.23 (8.83)	0.0 (0.0)	4
c103C15	15	5	605.77 (18.91)	563.94 (1)	634.67 (1)	603.73 (20.02)	2.04 (4.29)	8.5
c103C5	5	2	173.6 (9.2)	165.67 (13)	187.22 (1)	173.6 (9.2)	0.0 (0.0)	2.7
c104C10	10	4	348.24 (12.07)	331.02 (1)	367.87 (1)	348.24 (12.07)	0.0 (0.0)	3.6
c106C15	15	3	487.69 (11.27)	468.27 (1)	505.53 (1)	487.27 (11.17)	0.42 (1.02)	9.4
c202C10	10	5	351.51 (6.46)	345.84 (1)	365.24 (1)	351.51 (6.46)	0.0 (0.0)	5.8
c202C15	15	5	623.89 (9.72)	605.32 (1)	637.16 (1)	623.89 (9.72)	0.0 (0.0)	9.4
c205C10	10	3	365.49 (17.28)	326.85 (1)	376.59 (15)	365.49 (17.28)	0.0 (0.0)	6.4
c206C5	5	4	237.4 (2.58)	236.58 (29)	244.75 (1)	237.4 (2.58)	0.0 (0.0)	3
c208C15	15	4	600.77 (10.71)	585.62 (1)	621.6 (1)	600.77 (10.71)	0.0 (0.0)	8.9
c208C5	5	3	213.74 (3.42)	210.35 (13)	220.12 (1)	213.74 (3.42)	0.0 (0.0)	2
r102C10	10	4	327.01 (5.05)	317.55 (1)	333.88 (1)	327.01 (5.05)	0.0 (0.0)	6
r102C15	15	8	546.21 (12.87)	523.63 (1)	556.75 (1)	539.15 (12.3)	7.06 (7.37)	9.8
r103C10	10	3	197.79 (6.68)	191.12 (11)	208.7 (1)	194.14 (6.68)	3.65 (0.0)	5
r104C5	5	3	137.23 (1.08)	136.69 (12)	140.26 (1)	137.23 (1.08)	0.0 (0.0)	2
r105C15	15	6	531.84 (8.68)	519.79 (1)	542.54 (1)	531.84 (8.68)	0.0 (0.0)	9.9
r105C5	5	3	163.46 (6.35)	156.08 (10)	168.47 (17)	163.46 (6.35)	0.0 (0.0)	2.5
r201C10	10	4	274.59 (2.73)	270.86 (1)	278.47 (1)	273.77 (4.55)	0.82 (2.61)	5.4
r202C15	15	6	623.74 (10.5)	604.46 (1)	638.35 (1)	623.35 (10.98)	0.39 (1.22)	8.5
r202C5	5	3	152.93 (17.41)	142.65 (20)	197.6 (1)	152.93 (17.41)	0.0 (0.0)	2.2
r203C10	10	5	342.73 (14.21)	324.6 (4)	362.43 (1)	342.73 (14.21)	0.0 (0.0)	4.9
r203C5	5	4	196.81 (5.17)	194.19 (15)	210.76 (1)	196.81 (5.17)	0.0 (0.0)	2.1
r209C15	15	5	536.89 (13.85)	515.88 (1)	552.84 (1)	536.89 (13.85)	0.0 (0.0)	8.5
rc102C10	10	4	479.25 (10.68)	457.98 (1)	487.72 (15)	476.83 (12.41)	2.41 (3.1)	6.4
rc103C15	15	5	604.68 (9.85)	589.97 (1)	616.47 (6)	603.44 (9.5)	1.25 (1.07)	8.9
rc105C5	5	4	231.22 (4.94)	227.0 (11)	238.05 (8)	226.42 (8.16)	4.8 (3.31)	2.3
rc108C10	10	4	429.12 (6.05)	419.62 (1)	438.8 (1)	429.12 (6.05)	0.0 (0.0)	5.6
rc108C15	10	5	678.98 (10.14)	660.88 (1)	691.51 (1)	678.98 (10.14)	0.0 (0.0)	8.5
rc108C5	5	4	268.1 (10.42)	253.93 (1)	286.49 (1)	266.85 (9.87)	1.25 (2.01)	2
rc201C10	10	4	378.69 (7.59)	359.78 (1)	385.48 (1)	378.69 (7.59)	0.0 (0.0)	5.5
rc202C15	15	5	680.99 (15.03)	651.59 (1)	701.49 (1)	680.99 (15.03)	0.0 (0.0)	9.3
rc204C15	15	7	619.69 (21.27)	589.1 (4)	641.47 (1)	619.69 (21.27)	0.0 (0.0)	6.8
rc204C5	5	4	185.64 (0.72)	185.16 (20)	186.76 (5)	185.64 (0.72)	0.0 (0.0)	2
rc205C10	10	4	449.8 (8.28)	436.32 (1)	462.12 (1)	448.67 (8.97)	1.13 (3.58)	6
rc208C5	5	3	196.53 (11.63)	177.74 (1)	218.4 (1)	196.53 (11.63)	0.0 (0.0)	2.1

Table B.6: Results for TD-EVRP-STW obtained by GA on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Distance (σ)**	**Penalty (σ)**	
c101C10	10	5	397.92 (4.36)	387.32 (1)	401.13 (13)	395.76 (6.3)	2.16 (2.28)	4
c101C5	5	3	249.17 (1.4)	247.15 (7)	250.04 (22)	249.17 (1.4)	0.0 (0.0)	3.7
c103C15	15	5	381.08 (3.52)	374.46 (1)	387.34 (1)	381.08 (3.52)	0.0 (0.0)	4
c103C5	5	2	165.67 (0.0)	165.67 (30)	165.67 (30)	165.67 (0.0)	0.0 (0.0)	2.8
c104C10	10	4	273.93 (0.0)	273.93 (30)	273.93 (30)	273.93 (0.0)	0.0 (0.0)	2
c106C15	15	3	301.83 (23.23)	275.13 (13)	328.63 (1)	298.03 (20.33)	3.8 (6.13)	3.8
c202C10	10	5	258.53 (5.1)	252.04 (1)	264.47 (1)	258.53 (5.1)	0.0 (0.0)	2.1
c202C15	15	5	380.3 (7.96)	369.56 (1)	398.93 (1)	380.3 (7.96)	0.0 (0.0)	3.1
c205C10	10	3	232.95 (9.83)	228.28 (24)	251.6 (4)	232.95 (9.83)	0.0 (0.0)	2.2
c206C5	5	4	236.21 (0.0)	236.21 (30)	236.21 (30)	236.21 (0.0)	0.0 (0.0)	2
c208C15	15	4	317.52 (10.06)	311.0 (11)	343.0 (1)	317.52 (10.06)	0.0 (0.0)	3
c208C5	5	3	158.48 (0.0)	158.48 (30)	158.48 (30)	158.48 (0.0)	0.0 (0.0)	1
r102C10	10	4	250.14 (0.5)	249.19 (7)	250.38 (23)	241.49 (4.06)	8.65 (4.56)	3
r102C15	15	8	405.94 (2.3)	401.01 (1)	409.07 (6)	387.84 (9.68)	18.1 (10.35)	5
r103C10	10	3	182.88 (0.0)	182.88 (30)	182.88 (30)	179.23 (0.0)	3.65 (0.0)	3
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	346.61 (9.05)	339.88 (7)	361.7 (1)	344.63 (8.3)	1.99 (5.11)	4.2
r105C5	5	3	156.08 (0.0)	156.08 (30)	156.08 (30)	156.08 (0.0)	0.0 (0.0)	2
r201C10	10	4	222.43 (0.0)	222.43 (30)	222.43 (30)	217.68 (0.0)	4.76 (0.0)	3
r202C15	15	6	384.84 (19.66)	366.87 (16)	411.7 (1)	378.64 (21.84)	6.2 (8.0)	3.4
r202C5	5	3	142.65 (0.0)	142.65 (30)	142.65 (30)	142.65 (0.0)	0.0 (0.0)	2
r203C10	10	5	233.44 (1.11)	232.68 (18)	235.96 (1)	233.44 (1.11)	0.0 (0.0)	2
r203C5	5	4	184.03 (6.94)	179.06 (18)	194.19 (5)	184.03 (6.94)	0.0 (0.0)	1.1
r209C15	15	5	307.83 (0.31)	307.68 (25)	308.42 (5)	307.83 (0.31)	0.0 (0.0)	2.8
rc102C10	10	4	450.87 (1.28)	450.47 (26)	454.5 (1)	450.24 (0.71)	0.63 (1.99)	5
rc103C15	15	5	399.92 (0.62)	399.01 (6)	400.31 (13)	398.88 (0.4)	1.04 (0.55)	5
rc105C5	5	4	227.0 (0.0)	227.0 (30)	227.0 (30)	220.14 (0.0)	6.85 (0.0)	2
rc108C10	10	4	348.89 (3.87)	345.93 (1)	359.77 (1)	348.89 (3.87)	0.0 (0.0)	3.1
rc108C15	10	5	383.83 (14.55)	370.47 (16)	399.64 (10)	383.83 (14.55)	0.0 (0.0)	3
rc108C5	5	4	253.93 (0.0)	253.93 (30)	253.93 (30)	253.93 (0.0)	0.0 (0.0)	2
rc201C10	10	4	310.06 (0.0)	310.06 (30)	310.06 (30)	310.06 (0.0)	0.0 (0.0)	3
rc202C15	15	5	433.98 (10.46)	426.58 (8)	462.18 (1)	432.76 (11.05)	1.22 (1.05)	3.9
rc204C15	15	7	340.54 (19.02)	326.43 (1)	376.53 (1)	340.54 (19.02)	0.0 (0.0)	2.2
rc204C5	5	4	177.22 (1.34)	176.39 (21)	179.16 (8)	177.22 (1.34)	0.0 (0.0)	1
rc205C10	10	4	329.75 (1.46)	325.98 (1)	330.55 (15)	322.77 (9.85)	6.98 (9.88)	2
rc208C5	5	3	167.98 (0.0)	167.98 (30)	167.98 (30)	167.98 (0.0)	0.0 (0.0)	1

TABLE B.7: Results for TD-EVRP-STW obtained by MA on the instance set I_1.

Instance	**C**	**A**	**Value**					**Trucks**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Distance** (σ)	**Penalty** (σ)	
c101C10	10	5	396.23 (6.58)	383.75 (8)	399.34 (22)	379.42 (0.0)	16.81 (6.58)	4
c101C5	5	3	247.15 (0.0)	247.15 (30)	247.15 (30)	247.15 (0.0)	0.0 (0.0)	3
c103C15	15	5	366.17 (7.21)	357.82 (13)	373.34 (1)	362.26 (11.82)	3.91 (4.67)	3.6
c103C5	5	2	322.36 (330.34)	165.67 (23)	949.13 (4)	165.67 (0.0)	156.69 (330.34)	2.7
c104C10	10	4	323.49 (45.91)	273.93 (11)	371.23 (10)	273.93 (0.0)	49.56 (45.91)	2
c106C15	15	3	275.13 (0.0)	275.13 (30)	275.13 (30)	275.13 (0.0)	0.0 (0.0)	3
c202C10	10	5	251.94 (0.0)	251.94 (30)	251.94 (30)	251.94 (0.0)	0.0 (0.0)	2
c202C15	15	5	369.61 (0.15)	369.56 (26)	370.05 (1)	369.61 (0.15)	0.0 (0.0)	3
c205C10	10	3	228.28 (0.0)	228.28 (30)	228.28 (30)	228.28 (0.0)	0.0 (0.0)	2
c206C5	5	4	236.21 (0.0)	236.21 (30)	236.21 (30)	236.21 (0.0)	0.0 (0.0)	2
c208C15	15	4	300.55 (0.0)	300.55 (30)	300.55 (30)	300.55 (0.0)	0.0 (0.0)	2
c208C5	5	3	158.48 (0.0)	158.48 (30)	158.48 (30)	158.48 (0.0)	0.0 (0.0)	1
r102C10	10	4	267.56 (9.68)	249.19 (7)	272.16 (23)	249.19 (0.0)	18.37 (9.68)	3
r102C15	15	8	539.24 (63.03)	458.62 (5)	597.64 (17)	377.39 (0.0)	161.85 (63.03)	5
r103C10	10	3	175.36 (0.0)	175.36 (30)	175.36 (30)	171.71 (0.0)	3.65 (0.0)	2
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	384.93 (52.81)	334.21 (10)	435.02 (13)	334.52 (1.0)	50.41 (53.13)	4
r105C5	5	3	161.6 (11.64)	156.08 (22)	183.69 (7)	156.08 (0.0)	5.52 (11.64)	2
r201C10	10	4	222.43 (0.0)	222.43 (30)	222.43 (30)	217.68 (0.0)	4.76 (0.0)	3
r202C15	15	6	351.87 (4.58)	347.21 (7)	358.12 (10)	343.71 (5.07)	8.16 (1.69)	2.3
r202C5	5	3	142.65 (0.0)	142.65 (30)	142.65 (30)	142.65 (0.0)	0.0 (0.0)	2
r203C10	10	5	232.68 (0.0)	232.68 (30)	232.68 (30)	232.68 (0.0)	0.0 (0.0)	2
r203C5	5	4	179.06 (0.0)	179.06 (30)	179.06 (30)	179.06 (0.0)	0.0 (0.0)	1
r209C15	15	5	307.68 (0.0)	307.68 (30)	307.68 (30)	307.68 (0.0)	0.0 (0.0)	3
rc102C10	10	4	450.47 (0.0)	450.47 (30)	450.47 (30)	450.47 (0.0)	0.0 (0.0)	5
rc103C15	15	5	486.51 (73.9)	397.67 (10)	594.61 (1)	397.67 (0.0)	88.84 (73.9)	4
rc105C5	5	4	259.43 (22.39)	227.0 (11)	273.34 (19)	220.14 (0.0)	39.29 (22.39)	2
rc108C10	10	4	438.67 (33.38)	345.93 (1)	454.08 (20)	345.93 (0.0)	92.74 (33.38)	3
rc108C15	10	5	514.22 (114.41)	369.55 (5)	602.62 (18)	369.55 (0.0)	144.67 (114.41)	3
rc108C5	5	4	370.04 (61.2)	253.93 (6)	399.07 (23)	253.93 (0.0)	116.11 (61.2)	2
rc201C10	10	4	310.06 (0.0)	310.06 (30)	310.06 (30)	310.06 (0.0)	0.0 (0.0)	3
rc202C15	15	5	405.87 (3.44)	397.2 (1)	409.56 (1)	404.86 (3.17)	1.02 (1.07)	3.1
rc204C15	15	7	319.93 (3.56)	315.46 (8)	322.66 (19)	319.93 (3.56)	0.0 (0.0)	2
rc204C5	5	4	176.39 (0.0)	176.39 (30)	176.39 (30)	176.39 (0.0)	0.0 (0.0)	1
rc205C10	10	4	364.92 (41.05)	325.98 (17)	403.87 (13)	325.98 (0.0)	38.95 (41.05)	2
rc208C5	5	3	168.79 (2.54)	167.98 (26)	176.03 (1)	167.98 (0.0)	0.8 (2.54)	1

Table B.8: Results for TD-EVRP-STW obtained by MMA on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101C10	10	5	396.58 (6.8)	383.75 (8)	401.13 (4)	383.76 (9.15)	12.82 (9.28)	4
c101C5	5	3	248.59 (1.52)	247.15 (13)	250.04 (15)	248.59 (1.52)	0.0 (0.0)	3.3
c103C15	15	5	372.7 (1.22)	371.41 (7)	373.85 (14)	372.7 (1.22)	0.0 (0.0)	4
c103C5	5	2	323.87 (333.54)	165.67 (25)	964.23 (1)	165.67 (0.0)	158.2 (333.54)	2.7
c104C10	10	4	357.09 (32.34)	273.93 (1)	371.23 (26)	273.93 (0.0)	83.16 (32.34)	2
c106C15	15	3	281.89 (4.34)	295.13 (4)	288.14 (5)	280.67 (2.92)	1.22 (2.56)	3.8
c202C10	10	5	253.76 (3.84)	251.94 (25)	261.04 (5)	253.76 (3.84)	0.0 (0.0)	2
c202C15	15	5	369.56 (0.0)	369.56 (30)	369.56 (30)	369.56 (0.0)	0.0 (0.0)	3
c205C10	10	3	228.28 (0.0)	228.28 (30)	228.28 (30)	228.28 (0.0)	0.0 (0.0)	2
c206C5	5	4	236.21 (0.0)	236.21 (30)	236.21 (30)	236.21 (0.0)	0.0 (0.0)	2
c208C15	15	4	300.55 (0.0)	300.55 (30)	300.55 (30)	300.55 (0.0)	0.0 (0.0)	2
c208C5	5	3	158.48 (0.0)	158.48 (30)	158.48 (30)	158.48 (0.0)	0.0 (0.0)	1
r102C10	10	4	272.16 (0.0)	272.16 (30)	272.16 (30)	249.19 (0.0)	22.97 (0.0)	3
r102C15	15	8	521.9 (35.37)	445.17 (1)	547.49 (4)	397.68 (7.82)	124.21 (35.01)	5.4
r103C10	10	3	182.12 (2.38)	175.36 (1)	182.88 (28)	178.48 (2.38)	3.65 (0.0)	2.9
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	337.04 (0.98)	334.24 (1)	337.36 (26)	336.67 (2.16)	0.37 (1.18)	4
r105C5	5	3	158.11 (6.42)	156.08 (28)	176.39 (1)	156.08 (0.0)	2.03 (6.42)	2
r201C10	10	4	222.43 (0.0)	222.43 (30)	222.43 (30)	217.68 (0.0)	4.76 (0.0)	3
r202C15	15	6	350.72 (2.97)	347.21 (8)	358.12 (1)	341.61 (3.32)	9.11 (1.61)	2.1
r202C5	5	3	142.65 (0.0)	142.65 (30)	142.65 (30)	142.65 (0.0)	0.0 (0.0)	1.9
r203C10	10	5	232.68 (0.0)	232.68 (30)	232.68 (30)	232.68 (0.0)	0.0 (0.0)	2
r203C5	5	4	179.06 (0.0)	179.06 (30)	179.06 (30)	179.06 (0.0)	0.0 (0.0)	1
r209C15	15	5	307.68 (0.0)	307.68 (30)	307.68 (30)	307.68 (0.0)	0.0 (0.0)	3
rc102C10	10	4	450.47 (0.0)	450.47 (30)	450.47 (30)	450.47 (0.0)	0.0 (0.0)	5
rc103C15	15	5	560.1 (66.31)	397.67 (1)	594.61 (19)	397.67 (0.0)	162.43 (66.31)	4
rc105C5	5	4	275.23 (3.04)	273.34 (21)	279.64 (7)	220.14 (0.0)	55.09 (3.04)	2
rc108C10	10	4	449.48 (7.4)	438.76 (7)	454.08 (21)	345.93 (0.0)	103.55 (7.4)	3
rc108C15	10	5	556.82 (93.82)	393.69 (8)	651.08 (1)	374.45 (7.98)	182.37 (92.42)	3.1
rc108C5	5	4	388.81 (32.46)	296.43 (1)	399.07 (25)	253.93 (0.0)	134.88 (32.46)	2
rc201C10	10	4	310.06 (0.0)	310.06 (30)	310.06 (30)	310.06 (0.0)	0.0 (0.0)	3
rc202C15	15	5	403.68 (4.65)	397.2 (8)	408.73 (7)	402.86 (4.02)	0.82 (1.05)	3.3
rc204C15	15	7	315.46 (0.0)	315.46 (30)	315.46 (30)	315.46 (0.0)	0.0 (0.0)	2
rc204C5	5	4	178.61 (1.17)	176.39 (6)	179.16 (23)	178.61 (1.17)	0.0 (0.0)	1
rc205C10	10	4	396.08 (24.63)	325.98 (1)	403.87 (26)	325.98 (0.0)	70.1 (24.63)	2
rc208C5	5	3	167.98 (0.0)	167.98 (30)	167.98 (30)	167.98 (0.0)	0.0 (0.0)	1

B.1.2 Results on the instance set I_2

TABLE B.9: Results for TD-EVRP-STW obtained by GVNS on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	1398.52 (349.57)	1130.46 (1)	2296.99 (1)	1337.83 (206.94)	60.69 (178.61)	16.2
c102_21	100	21	1288.67 (116.13)	1141.29 (1)	1548.35 (1)	1274.72 (114.37)	13.95 (30.68)	15.5
c103_21	100	21	1217.04 (92.96)	1128.66 (1)	1452.84 (1)	1208.19 (102.04)	8.84 (27.97)	14.6
c104_21	100	21	1172.94 (68.57)	1072.44 (1)	1266.58 (1)	1157.35 (59.58)	15.6 (39.25)	13.9
c105_21	100	21	1356.9 (217.68)	1099.82 (1)	1817.4 (1)	1341.01 (221.96)	15.89 (30.24)	15.7
c106_21	100	21	1274.24 (197.92)	1060.39 (1)	1652.98 (1)	1263.37 (201.46)	10.87 (22.1)	15.1
c107_21	100	21	1174.64 (89.39)	1100.85 (1)	1400.68 (1)	1154.05 (73.9)	20.59 (25.84)	14.4
c108_21	100	21	1164.35 (91.54)	1064.11 (1)	1392.84 (1)	1164.35 (91.54)	0.0 (0.0)	14.3
c109_21	100	21	1144.19 (54.25)	1086.26 (1)	1273.87 (1)	1128.29 (36.13)	15.9 (32.02)	13.4
c201_21	100	21	1029.94 (23.74)	991.6 (1)	1073.64 (1)	1029.94 (23.74)	0.0 (0.0)	11
c202_21	100	21	1009.1 (36.13)	949.89 (1)	1067.29 (1)	1009.1 (36.13)	0.0 (0.0)	10.7
c203_21	100	21	1035.19 (51.25)	934.73 (1)	1129.11 (1)	1035.19 (51.25)	0.0 (0.0)	11.1
c204_21	100	21	1006.27 (27.31)	966.98 (7)	1043.44 (1)	1006.27 (27.31)	0.0 (0.0)	10.7
c205_21	100	21	1055.63 (65.14)	964.55 (1)	1196.35 (1)	1045.36 (45.67)	10.27 (32.45)	11.1
c206_21	100	21	1018.77 (32.68)	980.17 (1)	1078.85 (1)	1018.59 (32.66)	0.18 (0.58)	10.5
c207_21	100	21	1038.21 (59.12)	967.37 (1)	1125.83 (1)	1030.49 (50.88)	7.71 (24.39)	10.7
c208_21	100	21	1007.64 (30.91)	957.67 (1)	1052.33 (1)	1006.46 (29.19)	1.18 (3.74)	10.3
r101_21	100	21	1855.86 (139.5)	1638.39 (1)	2108.2 (1)	1759.65 (84.69)	96.22 (82.14)	20.5
r102_21	100	21	1730.98 (95.06)	1596.1 (1)	1910.25 (1)	1638.33 (85.71)	92.65 (84.29)	20
r103_21	100	21	1553.79 (78.95)	1441.89 (1)	1701.08 (1)	1509.82 (87.11)	43.97 (28.82)	17.9
r104_21	100	21	1286.6 (178.3)	1114.75 (1)	1706.45 (1)	1164.14 (44.59)	122.46 (183.84)	13.2
r105_21	100	21	1676.42 (132.35)	1556.28 (1)	1971.45 (1)	1612.01 (112.0)	64.42 (71.35)	19.1
r106_21	100	21	1568.45 (115.61)	1419.09 (1)	1781.91 (1)	1513.33 (103.82)	55.12 (69.99)	18.3
r107_21	100	21	1423.25 (142.96)	1235.87 (1)	1718.24 (1)	1323.48 (90.51)	99.76 (147.84)	15.1
r108_21	100	21	1317.02 (101.4)	1175.03 (1)	1551.94 (1)	1192.27 (56.07)	124.75 (115.63)	13.6
r109_21	100	21	1521.86 (146.09)	1276.31 (1)	1736.96 (1)	1434.8 (135.12)	87.07 (132.65)	17
r110_21	100	21	1342.52 (115.64)	1179.32 (1)	1526.13 (1)	1221.37 (64.33)	121.15 (139.14)	13.8
r111_21	100	21	1341.27 (88.54)	1227.91 (1)	1466.7 (1)	1316.84 (96.41)	24.43 (67.6)	15.6
r112_21	100	21	1298.21 (174.56)	1147.75 (1)	1662.0 (1)	1170.99 (55.1)	127.22 (185.89)	13.6
r201_21	100	21	1298.3 (85.69)	1205.16 (1)	1482.98 (1)	1241.88 (28.95)	56.42 (80.08)	13.7
r202_21	100	21	1183.33 (94.71)	1116.91 (1)	1444.08 (1)	1145.87 (26.03)	37.46 (92.33)	12.7
r203_21	100	21	1130.49 (85.43)	1046.76 (1)	1249.13 (11)	1054.02 (15.51)	76.47 (97.06)	11.6
r204_21	100	21	989.73 (102.56)	917.56 (1)	1204.57 (1)	936.5 (13.27)	53.23 (104.62)	10.1
r205_21	100	21	1193.47 (111.49)	1086.2 (1)	1374.91 (1)	1129.33 (32.0)	64.14 (91.25)	12
r206_21	100	21	1124.19 (55.34)	1068.08 (1)	1243.64 (1)	1092.74 (23.39)	31.44 (51.29)	11.9
r207_21	100	21	1026.1 (84.37)	968.47 (1)	1222.85 (1)	984.85 (15.21)	41.25 (75.64)	10.5
r208_21	100	21	1041.01 (117.55)	931.89 (1)	1253.77 (1)	945.41 (12.75)	95.6 (117.37)	10.1
r209_21	100	21	1145.16 (63.84)	1019.83 (1)	1256.55 (1)	1083.01 (29.89)	62.16 (43.03)	12.2
r210_21	100	21	1111.36 (102.36)	1011.86 (1)	1297.39 (1)	1019.0 (16.91)	92.36 (96.15)	10.8
r211_21	100	21	964.85 (18.54)	926.14 (1)	992.52 (1)	964.65 (18.59)	0.2 (0.63)	10.3
rc101_21	100	21	2013.8 (183.6)	1788.47 (1)	2410.13 (1)	1876.06 (128.36)	137.74 (113.37)	18.7
rc102_21	100	21	1994.2 (131.24)	1738.84 (1)	2146.31 (1)	1920.46 (115.19)	73.75 (44.33)	19
rc103_21	100	21	1825.17 (107.21)	1699.47 (1)	2006.15 (1)	1812.77 (109.93)	12.4 (8.3)	18.2
rc104_21	100	21	1695.11 (137.02)	1537.83 (6)	1927.94 (1)	1640.7 (185.41)	54.42 (106.47)	16.5
rc105_21	100	21	1949.79 (87.47)	1876.44 (1)	2098.29 (1)	1864.84 (121.79)	84.94 (100.36)	17.9
rc106_21	100	21	1760.9 (239.12)	1515.36 (1)	2242.74 (1)	1689.04 (172.97)	71.86 (129.86)	17.1
rc107_21	100	21	1611.65 (132.89)	1357.49 (1)	1826.07 (1)	1589.96 (142.92)	21.69 (43.1)	15.7
rc108_21	100	21	1668.58 (194.4)	1382.06 (1)	2000.13 (1)	1558.1 (202.76)	110.48 (175.08)	15
rc201_21	100	21	1618.54 (143.48)	1499.24 (1)	2001.63 (1)	1490.06 (42.45)	128.48 (127.21)	14.1
rc202_21	100	21	1545.23 (175.7)	1357.07 (1)	1674.84 (1)	1350.44 (27.72)	194.78 (165.71)	12.7
rc203_21	100	21	1245.04 (68.33)	1149.99 (1)	1340.68 (1)	1184.76 (43.43)	60.28 (65.0)	11.4
rc204_21	100	21	1184.96 (80.58)	1094.82 (1)	1295.86 (7)	1146.82 (44.91)	38.14 (50.07)	10.8
rc205_21	100	21	1415.37 (61.12)	1331.31 (1)	1525.07 (1)	1313.67 (42.65)	101.69 (76.0)	12.5
rc206_21	100	21	1441.6 (190.51)	1263.63 (1)	1869.69 (1)	1306.82 (37.21)	134.78 (162.67)	12.3
rc207_21	100	21	1211.6 (66.87)	1122.3 (1)	1358.42 (1)	1184.73 (37.78)	26.87 (47.73)	11
rc208_21	100	21	1085.55 (44.87)	1036.51 (1)	1192.8 (1)	1075.03 (29.77)	10.52 (19.19)	10.1

TABLE B.10: Results for TD-EVRP-STW obtained by GRASP on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Distance (σ)**	**Penalty (σ)**	
c101_21	100	21	1965.53 (233.88)	1535.61 (1)	2216.61 (1)	1728.12 (113.98)	237.41 (140.37)	20.1
c102_21	100	21	1614.33 (76.01)	1499.16 (1)	1741.42 (1)	1570.02 (91.36)	44.3 (51.67)	19.4
c103_21	100	21	1484.72 (36.96)	1424.12 (1)	1553.61 (1)	1474.95 (34.17)	9.77 (19.54)	17.8
c104_21	100	21	1320.1 (23.48)	1279.16 (1)	1349.3 (1)	1320.06 (23.45)	0.03 (0.07)	15.9
c105_21	100	21	1664.26 (102.26)	1437.4 (1)	1764.52 (1)	1583.53 (71.03)	80.73 (60.06)	19.3
c106_21	100	21	1584.87 (58.25)	1504.83 (1)	1696.5 (1)	1550.87 (47.72)	34.01 (27.8)	18.9
c107_21	100	21	1550.86 (41.81)	1472.56 (1)	1639.1 (1)	1514.2 (32.27)	36.66 (30.57)	18.4
c108_21	100	21	1438.37 (37.95)	1380.12 (1)	1491.61 (1)	1433.96 (41.33)	4.4 (4.91)	17.8
c109_21	100	21	1333.11 (51.66)	1216.13 (1)	1388.38 (1)	1333.07 (51.65)	0.04 (0.11)	15.7
c201_21	100	21	1096.08 (36.2)	1053.33 (1)	1157.27 (1)	1096.08 (36.2)	0.0 (0.0)	11.3
c202_21	100	21	1090.49 (47.98)	1003.19 (1)	1139.02 (1)	1090.49 (47.98)	0.0 (0.0)	11.3
c203_21	100	21	1064.7 (22.51)	1016.89 (1)	1095.61 (1)	1064.7 (22.51)	0.0 (0.0)	11.6
c204_21	100	21	1022.79 (23.79)	991.4 (1)	1072.55 (1)	1022.79 (23.79)	0.0 (0.0)	11.5
c205_21	100	21	1115.19 (50.0)	1035.14 (1)	1181.63 (1)	1115.19 (50.0)	0.0 (0.0)	11.8
c206_21	100	21	1127.59 (30.74)	1079.8 (1)	1165.5 (1)	1127.59 (30.74)	0.0 (0.0)	12.2
c207_21	100	21	1114.9 (36.26)	1080.1 (1)	1186.01 (1)	1114.9 (36.26)	0.0 (0.0)	12
c208_21	100	21	1113.1 (29.98)	1052.58 (1)	1155.49 (1)	1113.1 (29.98)	0.0 (0.0)	11.9
r101_21	100	21	2137.73 (72.32)	2037.8 (1)	2281.58 (1)	1848.41 (77.69)	289.31 (67.12)	21.5
r102_21	100	21	1862.49 (51.88)	1779.41 (1)	1923.17 (1)	1706.11 (29.99)	156.38 (50.61)	19.8
r103_21	100	21	1603.01 (55.19)	1528.39 (1)	1716.34 (1)	1556.09 (54.27)	46.93 (19.75)	18.2
r104_21	100	21	1342.15 (57.05)	1267.96 (1)	1432.82 (1)	1331.63 (57.34)	10.52 (9.02)	15.6
r105_21	100	21	1779.99 (56.62)	1679.87 (1)	1895.23 (1)	1676.8 (69.81)	103.19 (54.05)	19.7
r106_21	100	21	1659.83 (44.5)	1586.85 (1)	1735.05 (1)	1609.43 (36.49)	50.4 (28.95)	19
r107_21	100	21	1502.42 (56.84)	1416.25 (1)	1576.28 (1)	1485.72 (50.28)	16.7 (17.24)	17.6
r108_21	100	21	1331.48 (39.11)	1277.31 (1)	1411.54 (1)	1323.13 (30.35)	8.35 (12.97)	15.4
r109_21	100	21	1528.56 (32.04)	1480.72 (1)	1566.51 (1)	1510.5 (31.29)	18.06 (7.75)	17.7
r110_21	100	21	1379.79 (32.86)	1348.2 (1)	1451.65 (1)	1365.3 (26.83)	14.49 (19.11)	15.7
r111_21	100	21	1436.63 (30.73)	1390.15 (1)	1490.5 (1)	1425.95 (31.04)	10.68 (10.55)	16.7
r112_21	100	21	1319.3 (32.07)	1282.81 (5)	1383.84 (1)	1315.88 (29.5)	3.42 (5.58)	15.8
r201_21	100	21	1360.29 (26.57)	1335.32 (1)	1421.54 (1)	1357.79 (28.25)	2.5 (3.69)	14.4
r202_21	100	21	1238.73 (27.65)	1190.07 (1)	1269.22 (1)	1238.28 (27.6)	0.45 (0.89)	13.2
r203_21	100	21	1118.48 (20.25)	1086.13 (1)	1155.78 (1)	1117.01 (20.18)	1.47 (1.06)	11.8
r204_21	100	21	1002.74 (17.54)	978.19 (1)	1025.61 (1)	1002.31 (17.9)	0.43 (1.12)	11.1
r205_21	100	21	1209.56 (32.77)	1135.71 (1)	1245.89 (1)	1206.83 (31.62)	2.72 (4.36)	13.1
r206_21	100	21	1145.22 (11.58)	1120.42 (1)	1157.12 (1)	1142.06 (14.81)	3.16 (4.38)	12
r207_21	100	21	1057.2 (25.92)	1007.58 (1)	1091.59 (1)	1056.0 (26.02)	1.2 (2.57)	11.5
r208_21	100	21	981.11 (15.26)	960.84 (1)	1009.46 (1)	981.11 (15.26)	0.0 (0.0)	10.4
r209_21	100	21	1120.53 (22.97)	1080.69 (1)	1152.21 (1)	1120.49 (22.99)	0.04 (0.08)	11.7
r210_21	100	21	1119.55 (26.95)	1064.65 (1)	1168.09 (1)	1118.95 (26.92)	0.6 (1.18)	12.3
r211_21	100	21	1063.75 (23.48)	1028.25 (1)	1102.15 (1)	1063.18 (23.95)	0.58 (0.97)	11.3
rc101_21	100	21	2176.51 (58.08)	2073.88 (1)	2265.04 (1)	2041.03 (74.16)	135.48 (75.64)	20.2
rc102_21	100	21	1998.45 (56.95)	1907.52 (8)	2075.95 (1)	1903.66 (55.67)	94.79 (20.91)	19.1
rc103_21	100	21	1827.44 (41.17)	1762.19 (1)	1884.59 (1)	1797.52 (41.26)	29.92 (21.71)	18.3
rc104_21	100	21	1702.19 (36.33)	1654.86 (1)	1758.26 (1)	1684.54 (44.11)	17.65 (32.16)	17.6
rc105_21	100	21	1965.76 (51.23)	1894.25 (1)	2036.49 (1)	1896.53 (43.73)	69.23 (35.11)	18.8
rc106_21	100	21	1919.35 (47.48)	1839.95 (1)	1996.07 (1)	1872.76 (40.63)	46.59 (32.24)	18.4
rc107_21	100	21	1766.19 (34.85)	1708.55 (1)	1827.46 (1)	1761.52 (36.7)	4.67 (4.18)	18
rc108_21	100	21	1743.76 (23.46)	1707.87 (1)	1787.69 (1)	1732.7 (27.46)	11.06 (10.46)	17.5
rc201_21	100	21	1639.38 (39.48)	1571.43 (1)	1701.37 (1)	1633.38 (35.66)	5.99 (7.65)	14.3
rc202_21	100	21	1501.56 (38.0)	1444.51 (1)	1559.73 (1)	1494.97 (38.18)	6.59 (7.24)	13.3
rc203_21	100	21	1349.18 (26.57)	1296.55 (1)	1384.57 (1)	1348.75 (26.09)	0.44 (1.35)	12.4
rc204_21	100	21	1214.43 (32.87)	1170.31 (1)	1276.72 (1)	1214.36 (32.81)	0.07 (0.22)	11.7
rc205_21	100	21	1467.57 (39.26)	1380.23 (1)	1511.83 (1)	1464.0 (38.66)	3.57 (4.89)	13.5
rc206_21	100	21	1411.53 (48.65)	1349.97 (1)	1504.35 (1)	1409.32 (50.4)	2.21 (4.27)	12.2
rc207_21	100	21	1322.35 (28.41)	1275.26 (1)	1373.29 (1)	1320.35 (28.84)	2.0 (2.69)	12.4
rc208_21	100	21	1203.04 (41.56)	1142.6 (1)	1274.89 (1)	1202.05 (41.87)	1.0 (1.13)	11.3

Table B.11: Results for TD-EVRP-STW obtained by ACO on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Distance (σ)**	**Penalty (σ)**	
c101_21	100	21	9750.78 (407.89)	9315.56 (1)	10428.19 (8)	3731.18 (183.08)	6019.6 (388.24)	38.9
c102_21	100	21	6668.71 (238.82)	6163.84 (1)	6989.08 (1)	3521.16 (208.39)	3147.55 (384.01)	36.8
c103_21	100	21	4296.01 (301.06)	3800.43 (5)	4645.98 (1)	3361.25 (176.75)	934.76 (296.35)	35.5
c104_21	100	21	3216.92 (52.14)	3121.9 (1)	3306.21 (1)	3049.97 (101.69)	166.96 (97.25)	32.2
c105_21	100	21	7833.56 (390.72)	7097.27 (1)	8458.21 (1)	3519.94 (166.65)	4313.62 (266.57)	37.5
c106_21	100	21	6252.16 (250.89)	5939.52 (1)	6545.28 (5)	3633.76 (220.36)	2618.39 (242.42)	38.3
c107_21	100	21	6331.87 (302.1)	5894.57 (1)	6863.46 (1)	3457.02 (182.44)	2874.85 (428.05)	35.7
c108_21	100	21	4984.24 (301.1)	4358.18 (1)	5361.52 (1)	3451.73 (227.48)	1532.51 (299.97)	36.2
c109_21	100	21	3969.14 (116.53)	3685.98 (1)	4080.52 (1)	3418.19 (169.64)	550.96 (182.3)	35.9
c201_21	100	21	16532.46 (1452.03)	12562.13 (1)	17851.15 (1)	3950.53 (142.66)	12581.93 (1494.87)	31.3
c202_21	100	21	9208.88 (564.34)	8011.26 (1)	10017.5 (1)	3850.51 (267.64)	5358.37 (582.93)	30.1
c203_21	100	21	4622.01 (242.46)	4261.27 (1)	4919.75 (1)	3731.98 (107.04)	890.02 (273.54)	28.8
c204_21	100	21	3431.11 (53.83)	3331.85 (1)	3542.26 (1)	3416.01 (67.23)	15.1 (20.42)	25.9
c205_21	100	21	11863.45 (1073.42)	10488.48 (1)	13626.11 (1)	3827.06 (289.16)	8036.39 (1185.18)	29.7
c206_21	100	21	8844.86 (728.2)	7441.39 (1)	9950.23 (1)	3764.53 (248.28)	5080.33 (767.4)	29.5
c207_21	100	21	6649.66 (663.95)	4829.69 (1)	7153.83 (1)	3759.89 (147.66)	2889.76 (692.67)	29.6
c208_21	100	21	6780.33 (617.02)	5742.01 (1)	7705.08 (1)	3682.57 (171.59)	3097.76 (717.98)	28.9
r101_21	100	21	5289.69 (150.12)	5129.03 (1)	5522.54 (1)	3346.02 (199.32)	1943.66 (191.18)	40
r102_21	100	21	4274.61 (241.78)	3949.41 (7)	4698.45 (1)	3204.64 (104.78)	1069.97 (194.3)	38.6
r103_21	100	21	3745.98 (165.55)	3549.6 (1)	4174.38 (1)	3154.49 (128.78)	591.49 (179.8)	37.3
r104_21	100	21	2877.23 (47.41)	2810.29 (1)	2959.34 (1)	2796.82 (35.13)	80.4 (57.74)	33.4
r105_21	100	21	4433.89 (211.68)	4173.12 (1)	4699.76 (1)	3220.38 (141.82)	1213.52 (218.36)	38.4
r106_21	100	21	3916.88 (122.96)	3750.39 (1)	4148.56 (1)	3206.33 (142.32)	710.55 (185.21)	38
r107_21	100	21	3159.36 (47.61)	3081.77 (1)	3227.38 (1)	2981.5 (90.02)	177.86 (107.22)	36.5
r108_21	100	21	3143.9 (78.38)	2942.72 (1)	3225.65 (1)	3014.14 (88.6)	129.76 (72.82)	35
r109_21	100	21	3268.92 (31.41)	3225.61 (1)	3329.0 (1)	2994.62 (104.29)	274.3 (90.4)	37.5
r110_21	100	21	2915.06 (41.61)	2839.22 (1)	2962.22 (1)	2800.87 (71.58)	114.18 (50.2)	33.3
r111_21	100	21	2956.94 (25.93)	2915.59 (7)	2982.22 (1)	2854.53 (45.94)	102.41 (55.18)	34.9
r112_21	100	21	2772.27 (39.31)	2699.11 (1)	2814.31 (5)	2759.03 (44.36)	13.24 (17.67)	33.4
r201_21	100	21	9188.95 (340.16)	8667.66 (1)	9580.11 (1)	3531.71 (156.61)	5657.24 (276.79)	21.3
r202_21	100	21	6831.98 (437.88)	5970.57 (1)	7205.81 (1)	3481.49 (153.59)	3350.48 (571.39)	18.3
r203_21	100	21	4009.43 (180.12)	3762.82 (4)	4278.68 (1)	3379.52 (120.66)	629.9 (184.6)	19.6
r204_21	100	21	3263.97 (74.57)	3146.93 (1)	3354.95 (1)	3198.61 (72.05)	65.36 (55.54)	15.7
r205_21	100	21	6196.51 (325.24)	5741.56 (1)	6640.55 (1)	3518.96 (85.78)	2677.55 (358.28)	20.1
r206_21	100	21	4281.01 (198.64)	3855.97 (1)	4492.56 (1)	3434.51 (252.67)	846.51 (202.93)	20
r207_21	100	21	3629.04 (123.22)	3488.54 (1)	3822.63 (1)	3350.84 (71.84)	278.2 (139.9)	16.2
r208_21	100	21	3071.61 (58.67)	2951.07 (1)	3183.42 (1)	3051.07 (75.04)	20.54 (50.38)	15.4
r209_21	100	21	4094.65 (117.25)	3949.51 (1)	4253.87 (1)	3393.98 (126.83)	700.67 (112.51)	19.8
r210_21	100	21	3848.74 (134.31)	3547.08 (1)	4061.13 (1)	3370.7 (152.21)	478.03 (204.52)	18.8
r211_21	100	21	3439.86 (50.84)	3355.64 (7)	3492.56 (1)	3284.84 (79.44)	155.02 (89.47)	15
rc101_21	100	21	5584.32 (251.89)	5141.79 (1)	5967.25 (1)	4274.87 (371.17)	1309.44 (282.35)	42.2
rc102_21	100	21	4725.28 (138.53)	4443.6 (1)	4941.18 (1)	3938.82 (189.29)	786.46 (184.45)	37.5
rc103_21	100	21	4375.07 (193.91)	3998.31 (1)	4681.32 (1)	3825.42 (245.16)	549.65 (184.82)	36.3
rc104_21	100	21	3729.14 (148.85)	3546.5 (1)	4033.09 (1)	3569.39 (132.11)	159.75 (65.05)	32.6
rc105_21	100	21	4720.27 (150.36)	4595.26 (1)	5026.18 (1)	4000.62 (200.41)	719.65 (165.67)	38.7
rc106_21	100	21	4664.7 (318.63)	4224.1 (1)	5230.13 (1)	3915.21 (276.62)	749.49 (168.04)	37.8
rc107_21	100	21	3969.32 (75.07)	3838.8 (1)	4065.82 (1)	3655.51 (116.07)	313.81 (150.86)	34.5
rc108_21	100	21	3696.77 (158.03)	3531.16 (7)	4024.0 (1)	3573.34 (167.63)	123.43 (82.76)	33.5
rc201_21	100	21	9754.37 (291.94)	9379.8 (1)	10263.61 (1)	4525.84 (237.76)	5228.53 (428.43)	22.3
rc202_21	100	21	7415.01 (272.92)	7077.91 (1)	7806.8 (1)	4511.9 (130.19)	2903.11 (317.88)	19
rc203_21	100	21	4803.52 (173.02)	4501.68 (1)	4974.21 (6)	4174.61 (215.04)	628.91 (178.51)	20.2
rc204_21	100	21	3763.28 (33.77)	3695.72 (1)	3833.83 (1)	3678.66 (70.37)	84.62 (70.72)	21.5
rc205_21	100	21	6286.59 (226.32)	5998.9 (1)	6678.02 (1)	4414.08 (159.11)	1872.51 (227.16)	22.5
rc206_21	100	21	6649.22 (228.81)	6382.41 (1)	7119.91 (1)	4573.44 (166.06)	2075.79 (250.7)	20.7
rc207_21	100	21	4734.6 (143.48)	4484.76 (1)	4925.67 (1)	4178.94 (114.86)	555.66 (180.51)	19.8
rc208_21	100	21	3706.53 (70.27)	3625.92 (1)	3827.26 (1)	3601.45 (116.06)	105.07 (91.63)	20.7

Table B.12: Results for TD-EVRP-STW obtained by ACOLS on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	4264.11 (345.47)	3715.59 (1)	4733.15 (1)	3299.68 (227.57)	964.43 (308.86)	30.4
c102_21	100	21	3403.06 (136.59)	3239.52 (1)	3615.1 (1)	3095.38 (145.4)	307.67 (165.58)	27.5
c103_21	100	21	2967.35 (172.7)	2771.52 (1)	3229.52 (1)	2834.23 (189.54)	133.12 (121.52)	25.6
c104_21	100	21	2598.31 (143.88)	2309.04 (1)	2815.58 (1)	2565.95 (154.29)	32.36 (40.04)	23.4
c105_21	100	21	3658.4 (189.71)	3399.14 (1)	4087.34 (1)	3232.69 (254.31)	425.71 (320.79)	29.2
c106_21	100	21	3380.82 (129.57)	3183.36 (1)	3648.06 (1)	3075.93 (135.45)	304.89 (121.47)	29.4
c107_21	100	21	3162.13 (205.75)	2875.07 (1)	3563.32 (1)	2933.88 (262.82)	228.25 (142.81)	27.2
c108_21	100	21	3059.58 (133.59)	2787.8 (1)	3236.54 (1)	2906.67 (188.29)	152.91 (133.58)	26.8
c109_21	100	21	2820.16 (84.92)	2715.77 (1)	2947.33 (1)	2756.76 (105.82)	63.41 (85.72)	25.6
c201_21	100	21	3577.55 (182.32)	3184.95 (1)	3847.05 (1)	3201.68 (141.83)	375.87 (284.93)	21.7
c202_21	100	21	3040.07 (133.23)	2799.05 (1)	3312.26 (1)	2982.68 (171.65)	57.39 (59.26)	19.7
c203_21	100	21	2791.45 (118.66)	2595.83 (1)	3009.93 (1)	2784.17 (124.11)	7.28 (17.41)	18.2
c204_21	100	21	2541.96 (125.73)	2336.8 (1)	2732.52 (1)	2536.36 (117.25)	5.6 (17.72)	18.2
c205_21	100	21	3064.64 (140.7)	2879.53 (1)	3272.12 (1)	3002.61 (166.62)	62.03 (66.9)	20.7
c206_21	100	21	2975.73 (127.94)	2780.35 (1)	3177.61 (1)	2942.85 (135.39)	32.88 (53.58)	20.6
c207_21	100	21	2874.04 (108.4)	2720.29 (1)	3061.94 (1)	2858.63 (100.99)	15.42 (29.97)	19.4
c208_21	100	21	2811.37 (230.26)	2546.94 (1)	3142.82 (1)	2787.62 (228.0)	23.75 (29.92)	18.3
r101_21	100	21	3733.9 (130.72)	3580.78 (1)	3989.71 (1)	2984.64 (184.25)	749.26 (237.5)	32.2
r102_21	100	21	3292.63 (125.71)	3144.41 (1)	3494.32 (1)	2889.98 (93.92)	402.65 (71.64)	30.7
r103_21	100	21	2851.69 (182.8)	2468.36 (1)	3067.01 (1)	2623.4 (182.02)	228.29 (163.65)	27.5
r104_21	100	21	2453.63 (94.22)	2294.62 (1)	2592.9 (1)	2396.92 (91.91)	56.71 (41.06)	24
r105_21	100	21	3326.81 (158.66)	3104.21 (1)	3738.62 (1)	2913.29 (156.96)	413.52 (133.92)	31.5
r106_21	100	21	2962.04 (176.79)	2684.55 (1)	3241.14 (1)	2610.03 (155.11)	352.01 (169.17)	26.9
r107_21	100	21	2723.56 (103.44)	2500.23 (1)	2826.1 (1)	2579.39 (84.23)	144.17 (53.1)	25.9
r108_21	100	21	2613.72 (97.54)	2445.18 (1)	2749.09 (1)	2508.19 (84.04)	105.53 (42.75)	24.6
r109_21	100	21	2818.52 (76.67)	2671.2 (1)	2982.99 (1)	2665.43 (88.05)	153.09 (71.1)	27.4
r110_21	100	21	2511.39 (132.35)	2319.98 (1)	2708.27 (1)	2406.04 (134.37)	105.34 (53.88)	24.8
r111_21	100	21	2531.26 (61.01)	2446.93 (1)	2634.47 (1)	2479.11 (78.85)	52.16 (48.68)	25.9
r112_21	100	21	2375.66 (100.09)	2219.67 (1)	2559.35 (1)	2335.52 (112.72)	40.14 (53.1)	23.5
r201_21	100	21	2832.02 (94.37)	2632.28 (1)	2952.03 (1)	2775.8 (88.42)	56.22 (65.97)	16.7
r202_21	100	21	2502.23 (114.54)	2341.99 (1)	2678.59 (1)	2465.57 (98.25)	36.66 (35.06)	13.5
r203_21	100	21	2318.25 (87.71)	2219.59 (1)	2441.69 (1)	2310.73 (84.23)	7.52 (8.75)	13.3
r204_21	100	21	1976.21 (91.37)	1854.86 (1)	2170.81 (1)	1968.7 (98.67)	7.51 (11.22)	10.8
r205_21	100	21	2457.84 (49.81)	2352.43 (1)	2514.96 (1)	2443.09 (57.52)	14.75 (13.78)	14.7
r206_21	100	21	2461.1 (66.68)	2294.49 (1)	2529.68 (1)	2437.19 (70.17)	23.91 (23.84)	15.1
r207_21	100	21	2077.4 (107.86)	1881.4 (1)	2225.48 (1)	2072.79 (108.43)	4.61 (8.54)	11.1
r208_21	100	21	1913.41 (50.75)	1807.96 (1)	1972.74 (1)	1912.36 (50.36)	1.04 (2.9)	11.1
r209_21	100	21	2393.74 (77.19)	2304.81 (1)	2565.01 (1)	2373.56 (85.81)	20.18 (23.95)	14.8
r210_21	100	21	2419.17 (69.42)	2247.53 (1)	2475.54 (1)	2411.93 (66.16)	7.23 (15.64)	14.6
r211_21	100	21	2153.35 (84.29)	2001.46 (1)	2250.7 (1)	2141.73 (90.68)	11.62 (9.51)	11.4
rc101_21	100	21	3943.16 (279.03)	3419.18 (1)	4329.73 (1)	3387.36 (262.39)	555.8 (186.34)	30.1
rc102_21	100	21	3638.03 (205.24)	3399.91 (1)	3926.38 (1)	3341.65 (150.4)	296.38 (165.72)	29.9
rc103_21	100	21	3331.43 (161.11)	3053.84 (1)	3567.06 (1)	3133.03 (131.71)	198.39 (173.95)	28.8
rc104_21	100	21	3077.9 (108.59)	2929.83 (1)	3266.09 (1)	2973.32 (141.47)	104.59 (63.67)	25.1
rc105_21	100	21	3419.8 (276.66)	2968.99 (1)	3941.9 (1)	3140.08 (232.05)	279.72 (163.15)	28.1
rc106_21	100	21	3630.67 (127.55)	3326.97 (1)	3784.53 (1)	3299.34 (170.21)	331.32 (143.59)	28.7
rc107_21	100	21	3187.4 (157.34)	2968.45 (1)	3402.91 (1)	3065.26 (162.05)	122.14 (91.98)	27.9
rc108_21	100	21	2989.64 (156.02)	2840.66 (1)	3335.86 (1)	2882.65 (206.72)	106.99 (113.5)	25.6
rc201_21	100	21	3737.58 (113.74)	3549.85 (1)	3937.2 (1)	3573.09 (187.77)	164.49 (131.35)	17.8
rc202_21	100	21	3235.27 (127.56)	3090.07 (1)	3446.15 (1)	3164.54 (150.01)	70.73 (60.34)	14
rc203_21	100	21	2958.78 (128.41)	2734.59 (1)	3188.04 (1)	2924.55 (132.54)	34.22 (47.89)	15.7
rc204_21	100	21	2579.8 (184.37)	2192.18 (1)	2773.32 (1)	2573.05 (180.01)	6.75 (11.99)	15.2
rc205_21	100	21	3266.2 (81.4)	3160.51 (1)	3391.6 (1)	3215.91 (98.45)	50.29 (44.24)	16.8
rc206_21	100	21	3269.32 (76.57)	3135.71 (1)	3381.5 (1)	3250.66 (89.49)	18.66 (16.53)	15.9
rc207_21	100	21	3120.88 (62.22)	3052.46 (1)	3228.0 (1)	3110.88 (58.78)	10.01 (10.4)	15.3
rc208_21	100	21	2770.57 (95.97)	2623.39 (1)	2914.3 (1)	2763.98 (98.39)	6.59 (15.51)	16

TABLE B.13: Results for TD-EVRP-STW obtained by BCOi on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	8085.37 (464.84)	7482.13 (1)	8736.83 (7)	4829.97 (210.07)	3255.41 (502.7)	50
c102_21	100	21	5788.21 (217.26)	5354.82 (1)	6065.44 (1)	4717.9 (204.5)	1070.3 (210.02)	49.9
c103_21	100	21	4755.04 (124.84)	4568.47 (1)	4901.02 (1)	4592.11 (169.63)	162.93 (124.93)	49.9
c104_21	100	21	4258.82 (37.82)	4213.43 (1)	4327.64 (1)	4226.16 (54.7)	32.66 (42.11)	49.8
c105_21	100	21	7100.96 (354.78)	6511.62 (1)	7542.58 (1)	4832.76 (185.12)	2268.2 (235.06)	50
c106_21	100	21	6439.67 (256.12)	5942.33 (1)	6873.18 (1)	4874.79 (154.67)	1564.88 (324.14)	50
c107_21	100	21	6609.96 (83.39)	6509.36 (1)	6761.77 (1)	4887.51 (176.19)	1722.45 (165.7)	50
c108_21	100	21	5605.57 (209.85)	5130.45 (1)	5818.53 (1)	4655.18 (89.41)	950.39 (262.25)	49.9
c109_21	100	21	4922.45 (133.26)	4686.68 (1)	5115.08 (1)	4638.44 (135.03)	284.01 (120.15)	49.9
c201_21	100	21	6892.61 (665.81)	5791.53 (1)	7754.89 (1)	4928.72 (178.43)	1963.88 (567.92)	50
c202_21	100	21	4988.78 (138.67)	4732.51 (1)	5147.32 (1)	4831.48 (125.97)	157.3 (121.37)	50
c203_21	100	21	4482.58 (80.13)	4311.24 (1)	4583.82 (7)	4415.31 (67.7)	67.27 (73.0)	50
c204_21	100	21	3987.69 (62.02)	3872.14 (1)	4062.25 (1)	3985.63 (62.27)	2.06 (4.34)	50
c205_21	100	21	6007.85 (337.88)	5338.09 (1)	6644.18 (1)	4874.92 (135.9)	1132.93 (318.84)	50
c206_21	100	21	5196.69 (167.87)	4947.23 (1)	5475.96 (1)	4867.72 (156.6)	328.97 (136.44)	50
c207_21	100	21	4750.37 (113.73)	4620.64 (1)	4967.59 (1)	4601.6 (158.03)	148.77 (115.03)	50
c208_21	100	21	4861.4 (69.37)	4741.87 (1)	4974.39 (1)	4606.61 (129.91)	254.79 (154.43)	50
r101_21	100	21	4969.5 (121.14)	4802.09 (4)	5109.17 (1)	3881.15 (126.27)	1088.35 (150.42)	50
r102_21	100	21	4357.63 (67.36)	4260.9 (1)	4473.1 (1)	3772.98 (111.96)	584.65 (129.47)	50
r103_21	100	21	3856.42 (78.37)	3748.15 (1)	3978.58 (1)	3623.79 (87.5)	232.63 (82.77)	48.2
r104_21	100	21	3466.14 (64.79)	3299.72 (1)	3535.52 (1)	3380.66 (90.95)	85.48 (44.65)	49.9
r105_21	100	21	4482.85 (96.39)	4335.45 (1)	4600.36 (1)	3850.38 (87.32)	632.47 (147.08)	49.5
r106_21	100	21	4069.58 (47.61)	3988.64 (1)	4133.76 (1)	3687.81 (21.98)	381.78 (51.01)	50
r107_21	100	21	3668.11 (55.13)	3573.25 (1)	3767.85 (1)	3522.19 (39.28)	145.92 (65.13)	50
r108_21	100	21	3382.82 (39.91)	3325.17 (1)	3458.67 (1)	3328.74 (66.87)	54.08 (46.41)	49.8
r109_21	100	21	3906.53 (57.06)	3829.09 (7)	3993.19 (1)	3620.05 (108.34)	286.49 (69.83)	49.5
r110_21	100	21	3540.85 (39.1)	3480.24 (1)	3595.33 (1)	3432.52 (33.37)	108.33 (42.35)	50
r111_21	100	21	3557.94 (43.08)	3475.88 (1)	3609.63 (4)	3472.42 (51.73)	85.52 (48.9)	49.8
r112_21	100	21	3263.3 (41.12)	3203.98 (1)	3339.98 (1)	3217.18 (55.87)	46.11 (35.62)	49.7
r201_21	100	21	4076.65 (76.85)	3948.96 (7)	4155.46 (1)	3860.07 (80.08)	216.59 (90.59)	50
r202_21	100	21	3645.91 (69.89)	3552.86 (8)	3753.68 (1)	3601.24 (89.11)	44.66 (45.9)	50
r203_21	100	21	3397.04 (44.77)	3305.68 (1)	3445.17 (1)	3375.12 (64.53)	21.92 (33.66)	50
r204_21	100	21	2942.22 (50.74)	2888.44 (1)	3036.98 (1)	2934.8 (56.85)	7.43 (12.48)	50
r205_21	100	21	3693.02 (62.71)	3574.48 (1)	3762.78 (1)	3615.13 (76.01)	77.9 (93.35)	50
r206_21	100	21	3518.2 (45.16)	3452.21 (1)	3580.44 (1)	3480.73 (45.17)	37.46 (33.35)	50
r207_21	100	21	3157.88 (33.37)	3114.13 (6)	3200.02 (1)	3150.51 (34.02)	7.37 (5.71)	50
r208_21	100	21	2800.78 (51.64)	2710.44 (1)	2878.63 (1)	2799.9 (53.39)	0.88 (2.78)	50
r209_21	100	21	3426.64 (50.94)	3325.58 (1)	3489.47 (1)	3407.52 (59.85)	19.11 (25.33)	50
r210_21	100	21	3402.6 (59.67)	3281.01 (1)	3520.72 (1)	3377.19 (68.15)	25.41 (21.46)	50
r211_21	100	21	2851.4 (30.03)	2808.59 (7)	2896.98 (1)	2840.1 (35.99)	11.3 (13.94)	50
rc101_21	100	21	5852.98 (187.21)	5452.85 (1)	6115.74 (1)	4896.83 (75.95)	956.15 (162.46)	49.3
rc102_21	100	21	5369.58 (119.16)	5201.47 (1)	5528.57 (8)	4710.57 (128.89)	659.01 (133.31)	50
rc103_21	100	21	4899.39 (86.42)	4731.26 (1)	5010.22 (1)	4529.72 (101.39)	369.67 (74.5)	49.9
rc104_21	100	21	4512.52 (105.58)	4329.14 (1)	4648.95 (1)	4404.7 (108.21)	107.82 (81.15)	49.8
rc105_21	100	21	5321.63 (76.24)	5209.61 (1)	5409.12 (1)	4700.6 (138.6)	621.03 (113.63)	49.8
rc106_21	100	21	5194.9 (70.34)	5046.16 (1)	5305.07 (1)	4705.78 (87.87)	489.11 (113.06)	50
rc107_21	100	21	4698.42 (67.19)	4594.59 (1)	4762.6 (5)	4496.15 (114.68)	202.27 (109.51)	48.8
rc108_21	100	21	4510.1 (52.85)	4433.4 (1)	4601.21 (1)	4382.15 (118.13)	127.94 (94.84)	49.7
rc201_21	100	21	5394.11 (105.1)	5252.45 (1)	5542.31 (1)	5077.8 (182.04)	316.31 (143.83)	50
rc202_21	100	21	4751.73 (89.83)	4628.32 (7)	4846.65 (1)	4651.26 (70.61)	100.47 (54.15)	50
rc203_21	100	21	4386.65 (55.63)	4320.73 (5)	4495.26 (1)	4352.91 (51.3)	33.75 (44.11)	50
rc204_21	100	21	3846.0 (53.13)	3747.38 (1)	3916.79 (1)	3839.32 (54.6)	6.68 (15.76)	50
rc205_21	100	21	4867.6 (77.91)	4718.53 (1)	4958.33 (4)	4727.62 (95.7)	139.98 (75.57)	50
rc206_21	100	21	4756.54 (89.46)	4580.72 (1)	4868.57 (1)	4634.83 (135.74)	121.71 (105.77)	50
rc207_21	100	21	4220.85 (103.29)	4074.95 (4)	4389.78 (1)	4186.7 (102.03)	34.14 (22.74)	50
rc208_21	100	21	3575.27 (64.84)	3491.02 (1)	3691.12 (1)	3559.78 (69.21)	15.49 (17.16)	50

Table B.14: Results for TD-EVRP-STW obtained by GA on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	1978.9 (73.22)	1841.31 (1)	2092.7 (1)	1969.36 (77.6)	9.54 (18.24)	23.4
c102_21	100	21	1863.19 (165.95)	1661.31 (1)	2101.24 (1)	1860.84 (166.45)	2.35 (4.4)	22
c103_21	100	21	1776.04 (132.42)	1595.24 (1)	1975.42 (1)	1774.67 (132.42)	1.36 (3.17)	19.2
c104_21	100	21	1508.9 (40.4)	1418.64 (1)	1553.97 (1)	1505.95 (39.19)	2.95 (4.83)	16.5
c105_21	100	21	1894.01 (76.09)	1791.84 (1)	2011.83 (1)	1889.04 (72.65)	4.97 (9.13)	22.3
c106_21	100	21	1775.53 (77.86)	1710.78 (1)	1947.86 (1)	1766.22 (81.24)	9.32 (19.8)	21.1
c107_21	100	21	1761.08 (93.91)	1633.26 (1)	1927.79 (1)	1749.4 (93.03)	11.68 (9.97)	20
c108_21	100	21	1662.59 (72.0)	1517.43 (1)	1780.15 (1)	1655.35 (66.28)	7.24 (11.92)	19.1
c109_21	100	21	1608.73 (102.75)	1434.51 (1)	1793.8 (1)	1608.72 (102.74)	0.0 (0.01)	17.5
c201_21	100	21	1570.31 (60.0)	1436.42 (1)	1654.32 (1)	1570.31 (60.0)	0.0 (0.0)	16.1
c202_21	100	21	1509.53 (101.96)	1366.72 (1)	1730.7 (1)	1509.53 (101.96)	0.0 (0.0)	14.8
c203_21	100	21	1435.02 (95.65)	1267.89 (1)	1630.91 (1)	1435.02 (95.65)	0.0 (0.0)	14
c204_21	100	21	1324.9 (73.71)	1241.37 (1)	1431.88 (1)	1321.86 (69.31)	3.04 (9.61)	13.2
c205_21	100	21	1426.51 (50.38)	1338.5 (1)	1504.68 (1)	1426.46 (50.31)	0.05 (0.15)	14.6
c206_21	100	21	1397.39 (89.75)	1253.77 (1)	1546.73 (1)	1397.39 (89.75)	0.0 (0.0)	13.9
c207_21	100	21	1321.94 (51.45)	1212.64 (1)	1360.9 (1)	1321.73 (51.93)	0.2 (0.64)	13.8
c208_21	100	21	1327.02 (39.56)	1267.31 (1)	1389.05 (1)	1325.83 (38.52)	1.19 (3.76)	13.5
r101_21	100	21	2135.9 (59.31)	2033.37 (1)	2251.46 (1)	2060.3 (68.18)	75.59 (26.49)	28
r102_21	100	21	1929.85 (58.57)	1860.39 (1)	2048.75 (1)	1882.54 (59.03)	47.32 (18.81)	24.2
r103_21	100	21	1743.02 (76.53)	1596.6 (1)	1851.56 (1)	1722.51 (76.7)	20.51 (14.47)	20.8
r104_21	100	21	1516.37 (51.83)	1462.86 (1)	1600.35 (1)	1504.72 (50.67)	11.65 (10.4)	16.7
r105_21	100	21	1883.3 (30.89)	1831.52 (1)	1932.74 (1)	1837.53 (35.93)	45.77 (16.24)	22.8
r106_21	100	21	1780.22 (72.44)	1645.81 (1)	1901.75 (1)	1759.82 (76.94)	20.41 (15.96)	20.8
r107_21	100	21	1688.25 (89.67)	1537.15 (1)	1811.07 (5)	1681.47 (86.69)	6.78 (5.67)	19.9
r108_21	100	21	1474.45 (54.48)	1370.54 (1)	1558.71 (1)	1470.55 (54.75)	3.89 (3.5)	16
r109_21	100	21	1690.4 (75.05)	1625.43 (8)	1858.43 (1)	1677.81 (67.61)	12.58 (10.33)	20
r110_21	100	21	1528.91 (53.87)	1473.28 (1)	1654.16 (1)	1526.33 (55.04)	2.59 (2.86)	18.8
r111_21	100	21	1582.46 (42.61)	1509.54 (1)	1660.18 (1)	1574.3 (45.19)	8.16 (7.43)	18.9
r112_21	100	21	1467.38 (49.91)	1384.72 (1)	1532.69 (1)	1465.64 (50.43)	1.74 (1.76)	17.2
r201_21	100	21	1471.91 (60.29)	1401.25 (1)	1574.36 (6)	1464.57 (52.51)	7.34 (9.61)	16.3
r202_21	100	21	1351.47 (23.92)	1313.64 (1)	1384.76 (1)	1349.29 (22.45)	2.17 (2.8)	15.1
r203_21	100	21	1275.55 (29.34)	1237.27 (1)	1316.54 (1)	1275.27 (29.33)	0.28 (0.59)	13.9
r204_21	100	21	1200.28 (30.61)	1156.87 (1)	1242.14 (1)	1200.24 (30.59)	0.04 (0.13)	13.7
r205_21	100	21	1316.65 (40.11)	1247.96 (1)	1393.76 (1)	1313.25 (36.21)	3.41 (6.17)	14.9
r206_21	100	21	1307.75 (40.74)	1233.88 (1)	1360.56 (1)	1307.75 (40.74)	0.0 (0.0)	14.3
r207_21	100	21	1239.05 (33.44)	1187.36 (1)	1303.75 (1)	1238.98 (33.42)	0.07 (0.23)	14
r208_21	100	21	1208.54 (39.51)	1170.59 (1)	1282.24 (1)	1208.08 (39.75)	0.46 (1.47)	13.7
r209_21	100	21	1279.5 (22.62)	1238.17 (1)	1313.04 (1)	1278.23 (20.81)	1.27 (4.01)	13.8
r210_21	100	21	1264.38 (32.19)	1220.34 (1)	1297.4 (1)	1262.72 (33.6)	1.66 (3.6)	14.3
r211_21	100	21	1201.12 (35.88)	1146.21 (1)	1248.5 (1)	1200.39 (35.94)	0.73 (1.47)	13.7
rc101_21	100	21	2244.7 (99.62)	2096.48 (1)	2360.58 (1)	2169.7 (113.66)	75.01 (33.93)	23.3
rc102_21	100	21	2181.04 (75.68)	2107.3 (1)	2311.09 (1)	2148.99 (76.58)	32.05 (14.12)	21.8
rc103_21	100	21	2018.25 (128.87)	1880.54 (1)	2241.97 (1)	1992.42 (123.29)	25.83 (14.75)	20.2
rc104_21	100	21	1765.64 (45.89)	1699.4 (1)	1842.53 (1)	1756.13 (52.72)	9.51 (8.72)	17.2
rc105_21	100	21	2108.41 (111.53)	1926.75 (1)	2315.94 (1)	2065.94 (130.29)	42.47 (28.79)	22
rc106_21	100	21	2035.84 (113.49)	1891.17 (1)	2197.3 (6)	1999.43 (105.66)	36.41 (23.59)	20.2
rc107_21	100	21	1830.97 (72.87)	1721.35 (1)	1987.89 (1)	1826.89 (72.98)	4.07 (2.47)	18
rc108_21	100	21	1857.97 (70.2)	1761.88 (1)	1931.1 (1)	1849.77 (69.43)	8.2 (6.92)	17.7
rc201_21	100	21	1759.15 (76.99)	1647.2 (1)	1886.71 (1)	1757.02 (74.43)	2.13 (3.4)	16.3
rc202_21	100	21	1589.22 (52.3)	1504.23 (1)	1684.35 (1)	1587.73 (53.73)	1.49 (3.47)	15.5
rc203_21	100	21	1472.15 (68.62)	1366.51 (1)	1564.22 (1)	1471.49 (68.29)	0.66 (1.35)	15
rc204_21	100	21	1457.33 (69.24)	1367.2 (1)	1571.98 (1)	1456.81 (68.7)	0.52 (1.1)	13.3
rc205_21	100	21	1618.84 (44.73)	1560.79 (1)	1703.18 (1)	1608.64 (42.0)	10.19 (10.23)	15.3
rc206_21	100	21	1547.73 (52.75)	1487.58 (1)	1645.94 (1)	1546.03 (53.45)	1.7 (3.63)	14.8
rc207_21	100	21	1437.93 (58.1)	1355.3 (1)	1546.64 (1)	1436.47 (59.04)	1.46 (2.18)	14.4
rc208_21	100	21	1398.79 (51.68)	1341.91 (5)	1479.35 (1)	1396.24 (51.63)	2.54 (1.24)	13.5

Table B.15: Results for TD-EVRP-STW obtained by MA on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Distance (σ)**	**Penalty (σ)**	
c101_21	100	21	1681.72 (69.77)	1556.29 (1)	1776.77 (1)	1670.03 (61.43)	11.69 (34.09)	21.4
c102_21	100	21	1523.02 (74.94)	1409.68 (1)	1653.52 (1)	1519.8 (77.18)	3.21 (9.84)	19.8
c103_21	100	21	1514.5 (94.79)	1410.39 (1)	1717.13 (1)	1503.77 (109.89)	10.73 (33.86)	19.6
c104_21	100	21	1231.57 (39.1)	1192.99 (1)	1303.55 (1)	1230.42 (39.91)	1.15 (3.64)	15.3
c105_21	100	21	1474.51 (101.16)	1304.54 (1)	1626.99 (1)	1462.51 (95.05)	12.0 (15.14)	18
c106_21	100	21	1434.86 (74.06)	1321.56 (1)	1532.88 (1)	1434.66 (73.96)	0.2 (0.63)	18.7
c107_21	100	21	1396.84 (85.76)	1269.4 (1)	1529.14 (1)	1395.81 (86.08)	1.03 (3.26)	18
c108_21	100	21	1326.15 (64.96)	1232.01 (1)	1417.27 (1)	1325.39 (64.07)	0.76 (1.63)	16.8
c109_21	100	21	1401.04 (90.58)	1256.46 (1)	1528.01 (1)	1397.38 (85.76)	3.66 (10.06)	17.7
c201_21	100	21	1365.1 (100.22)	1236.35 (1)	1514.67 (1)	1363.42 (102.73)	1.68 (5.32)	14.7
c202_21	100	21	1231.18 (86.75)	1143.3 (1)	1395.61 (1)	1229.85 (85.77)	1.33 (2.88)	12.9
c203_21	100	21	1116.07 (54.69)	1033.28 (1)	1203.43 (1)	1116.07 (54.69)	0.0 (0.0)	11.8
c204_21	100	21	1052.14 (46.63)	988.96 (1)	1124.83 (1)	1052.14 (46.63)	0.0 (0.0)	11.6
c205_21	100	21	1182.13 (73.85)	1049.44 (1)	1261.09 (1)	1182.13 (73.85)	0.0 (0.0)	12.6
c206_21	100	21	1234.86 (82.8)	1126.18 (1)	1370.56 (1)	1234.12 (81.47)	0.74 (2.34)	13.3
c207_21	100	21	1236.52 (66.18)	1118.22 (1)	1333.84 (1)	1236.38 (66.12)	0.14 (0.43)	13
c208_21	100	21	1252.16 (61.04)	1159.94 (1)	1358.8 (1)	1252.11 (61.04)	0.04 (0.13)	13.9
r101_21	100	21	1945.79 (65.87)	1853.77 (1)	2056.98 (1)	1902.22 (57.58)	43.57 (35.43)	25.6
r102_21	100	21	1790.05 (114.09)	1598.02 (1)	1937.55 (1)	1761.83 (101.32)	28.21 (21.0)	23.6
r103_21	100	21	1557.31 (80.4)	1455.15 (1)	1727.78 (1)	1525.27 (83.41)	32.03 (36.34)	20
r104_21	100	21	1327.47 (145.64)	1186.45 (1)	1655.7 (1)	1231.24 (32.34)	96.23 (154.16)	14.7
r105_21	100	21	1753.99 (79.99)	1652.13 (1)	1858.78 (1)	1723.23 (86.42)	30.77 (38.23)	23
r106_21	100	21	1567.92 (76.69)	1455.46 (1)	1665.78 (1)	1549.66 (72.63)	18.27 (20.66)	19.4
r107_21	100	21	1410.08 (63.61)	1339.61 (1)	1507.56 (1)	1402.34 (64.73)	7.75 (8.47)	17.5
r108_21	100	21	1277.37 (68.5)	1196.42 (1)	1410.67 (1)	1261.91 (72.23)	15.46 (29.03)	15.1
r109_21	100	21	1511.39 (54.42)	1383.73 (1)	1580.44 (1)	1501.92 (54.76)	9.47 (9.74)	18.5
r110_21	100	21	1361.38 (84.13)	1246.29 (1)	1490.44 (1)	1358.69 (85.71)	2.69 (3.77)	17.1
r111_21	100	21	1378.18 (86.59)	1281.7 (1)	1499.0 (1)	1375.07 (83.92)	3.11 (6.01)	17.2
r112_21	100	21	1284.05 (66.61)	1167.29 (1)	1370.39 (1)	1279.1 (66.17)	4.95 (5.36)	15.5
r201_21	100	21	1335.95 (51.22)	1250.15 (1)	1407.01 (1)	1327.15 (45.17)	8.8 (16.87)	14.8
r202_21	100	21	1215.06 (40.36)	1165.83 (1)	1294.52 (1)	1214.17 (40.83)	0.9 (1.39)	12.6
r203_21	100	21	1120.35 (34.76)	1044.22 (1)	1162.32 (1)	1120.07 (34.72)	0.29 (0.42)	12
r204_21	100	21	1003.8 (24.75)	972.41 (1)	1045.95 (1)	1003.54 (25.08)	0.26 (0.82)	10.4
r205_21	100	21	1191.93 (26.88)	1150.64 (1)	1242.18 (1)	1190.23 (26.45)	1.7 (2.61)	13
r206_21	100	21	1168.62 (41.83)	1075.59 (1)	1212.01 (1)	1167.98 (42.18)	0.64 (1.49)	12.3
r207_21	100	21	1054.14 (42.41)	980.66 (1)	1127.18 (1)	1053.88 (41.91)	0.26 (0.83)	10.8
r208_21	100	21	1024.9 (93.48)	971.12 (1)	1287.57 (1)	993.41 (16.25)	31.49 (99.23)	9.9
r209_21	100	21	1136.62 (39.94)	1074.36 (1)	1212.12 (1)	1134.58 (36.6)	2.04 (5.63)	11.6
r210_21	100	21	1098.92 (44.37)	1018.11 (1)	1172.01 (1)	1097.19 (43.02)	1.73 (3.08)	11.5
r211_21	100	21	1047.07 (31.43)	1012.88 (1)	1106.99 (1)	1039.58 (23.44)	7.49 (23.33)	11
rc101_21	100	21	2159.93 (86.04)	2003.16 (1)	2264.85 (1)	2130.34 (83.53)	29.59 (14.14)	23.1
rc102_21	100	21	1941.02 (107.74)	1833.59 (1)	2107.4 (1)	1920.8 (112.17)	20.23 (12.44)	21.6
rc103_21	100	21	1767.09 (118.27)	1556.44 (1)	1908.6 (1)	1723.74 (116.52)	43.35 (90.32)	19.1
rc104_21	100	21	1488.88 (58.44)	1414.84 (1)	1584.45 (1)	1486.05 (60.52)	2.83 (3.28)	15.4
rc105_21	100	21	1932.1 (124.85)	1779.07 (1)	2210.74 (1)	1895.49 (100.57)	36.62 (49.58)	21.4
rc106_21	100	21	1802.99 (85.33)	1681.76 (1)	1949.03 (1)	1783.27 (71.71)	19.72 (26.59)	19.9
rc107_21	100	21	1604.11 (102.39)	1441.37 (1)	1809.16 (1)	1597.79 (106.39)	6.32 (10.76)	17.4
rc108_21	100	21	1568.43 (104.61)	1379.09 (1)	1744.83 (1)	1567.75 (104.66)	0.68 (1.0)	17
rc201_21	100	21	1642.03 (62.12)	1560.05 (1)	1717.57 (1)	1639.83 (62.87)	2.2 (2.95)	15.9
rc202_21	100	21	1488.77 (28.65)	1436.17 (1)	1538.08 (1)	1486.06 (30.7)	2.72 (4.15)	13.4
rc203_21	100	21	1325.35 (60.3)	1265.72 (1)	1442.94 (1)	1324.42 (58.57)	0.94 (2.63)	11.7
rc204_21	100	21	1209.11 (71.44)	1097.46 (1)	1363.68 (1)	1209.11 (71.44)	0.0 (0.0)	11.7
rc205_21	100	21	1502.6 (106.05)	1313.81 (1)	1683.28 (1)	1462.36 (75.37)	40.24 (94.39)	13.7
rc206_21	100	21	1438.78 (51.21)	1346.78 (1)	1532.99 (1)	1437.5 (52.33)	1.29 (3.39)	13.4
rc207_21	100	21	1310.05 (41.2)	1264.74 (1)	1376.89 (1)	1307.93 (41.58)	2.12 (1.66)	12
rc208_21	100	21	1246.43 (123.96)	1123.01 (1)	1548.83 (1)	1211.44 (63.95)	35.0 (108.57)	10.9

Table B.16: Results for TD-EVRP-STW obtained by MMA on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	1342.4 (35.01)	1279.33 (1)	1388.76 (1)	1342.4 (35.01)	0.0 (0.0)	16.6
c102_21	100	21	1314.18 (35.71)	1255.43 (1)	1358.81 (1)	1309.52 (32.09)	4.66 (14.7)	16.7
c103_21	100	21	1275.14 (60.66)	1171.27 (1)	1382.03 (1)	1270.49 (52.83)	4.65 (14.71)	16
c104_21	100	21	1173.17 (41.66)	1117.47 (1)	1246.01 (1)	1171.62 (42.08)	1.56 (4.92)	14.4
c105_21	100	21	1358.14 (63.14)	1294.56 (1)	1491.28 (1)	1358.14 (63.14)	0.0 (0.0)	17.3
c106_21	100	21	1335.62 (30.49)	1293.63 (1)	1378.65 (1)	1335.62 (30.49)	0.0 (0.0)	16.9
c107_21	100	21	1336.93 (96.25)	1251.36 (1)	1581.6 (1)	1297.02 (47.44)	39.91 (105.56)	16.4
c108_21	100	21	1308.36 (52.24)	1239.55 (1)	1395.07 (1)	1304.21 (56.53)	4.15 (13.13)	16.3
c109_21	100	21	1238.89 (46.11)	1177.52 (1)	1320.54 (1)	1230.77 (48.31)	8.13 (25.65)	15.2
c201_21	100	21	1174.7 (85.03)	1001.37 (1)	1299.57 (1)	1174.7 (85.03)	0.0 (0.0)	14
c202_21	100	21	1087.0 (62.43)	971.94 (1)	1176.48 (1)	1087.0 (62.43)	0.0 (0.0)	12.4
c203_21	100	21	1061.55 (43.75)	996.55 (1)	1155.36 (1)	1061.55 (43.75)	0.0 (0.0)	12.4
c204_21	100	21	1005.81 (34.75)	960.93 (1)	1071.56 (1)	1005.81 (34.75)	0.0 (0.0)	11.1
c205_21	100	21	1165.98 (82.57)	1050.75 (1)	1286.9 (1)	1165.98 (82.57)	0.0 (0.0)	14.3
c206_21	100	21	1122.22 (70.8)	981.47 (1)	1234.02 (1)	1122.22 (70.8)	0.0 (0.0)	13.6
c207_21	100	21	1085.72 (25.92)	1049.17 (1)	1129.86 (1)	1085.72 (25.92)	0.0 (0.0)	12.6
c208_21	100	21	1083.48 (49.78)	1001.33 (1)	1150.22 (1)	1083.48 (49.78)	0.0 (0.0)	12.4
r101_21	100	21	1796.81 (89.41)	1682.16 (1)	1985.68 (1)	1728.1 (60.02)	68.71 (44.97)	22.8
r102_21	100	21	1647.96 (95.75)	1557.19 (1)	1899.95 (1)	1588.09 (50.15)	59.87 (81.87)	20.8
r103_21	100	21	1470.93 (101.31)	1369.32 (1)	1684.24 (1)	1402.69 (61.45)	68.25 (84.31)	17.6
r104_21	100	21	1373.0 (153.34)	1181.42 (1)	1664.99 (1)	1235.49 (51.51)	137.5 (123.74)	14.8
r105_21	100	21	1631.73 (71.51)	1544.16 (1)	1733.41 (1)	1582.65 (61.39)	49.08 (47.08)	20
r106_21	100	21	1566.06 (118.18)	1425.52 (1)	1748.99 (1)	1469.31 (44.13)	96.75 (87.29)	18.6
r107_21	100	21	1442.94 (146.23)	1275.56 (1)	1675.94 (1)	1322.85 (60.13)	120.1 (128.97)	16.1
r108_21	100	21	1295.67 (109.79)	1183.41 (1)	1546.92 (1)	1204.48 (33.71)	91.19 (123.52)	14
r109_21	100	21	1444.34 (63.3)	1370.7 (1)	1554.24 (1)	1396.71 (36.49)	47.63 (67.89)	17.3
r110_21	100	21	1375.01 (130.63)	1225.63 (1)	1621.4 (1)	1226.98 (35.07)	148.03 (143.74)	14.5
r111_21	100	21	1463.41 (181.47)	1266.01 (1)	1745.57 (1)	1270.95 (48.52)	192.47 (171.07)	15.2
r112_21	100	21	1283.44 (118.1)	1190.84 (1)	1601.81 (1)	1156.35 (39.29)	127.09 (144.17)	13.5
r201_21	100	21	1622.56 (313.81)	1270.59 (1)	2144.86 (1)	1320.19 (48.26)	302.37 (282.46)	14.8
r202_21	100	21	1328.25 (190.46)	1159.53 (1)	1653.31 (1)	1217.96 (42.33)	110.29 (164.03)	14.3
r203_21	100	21	1063.43 (31.85)	1003.04 (1)	1122.96 (1)	1061.45 (30.83)	1.98 (5.72)	11.8
r204_21	100	21	984.35 (33.25)	953.65 (1)	1043.67 (1)	983.83 (33.75)	0.53 (1.13)	11.3
r205_21	100	21	1254.08 (175.02)	1137.54 (1)	1716.31 (1)	1158.7 (41.01)	95.37 (190.18)	13
r206_21	100	21	1200.59 (210.04)	1048.49 (1)	1790.54 (1)	1128.69 (30.52)	71.91 (207.35)	12.7
r207_21	100	21	1033.08 (46.33)	967.29 (1)	1141.23 (1)	1022.54 (28.91)	10.54 (30.09)	11.1
r208_21	100	21	996.12 (109.72)	931.63 (1)	1305.79 (1)	963.13 (14.81)	32.99 (104.34)	11.1
r209_21	100	21	1252.71 (148.73)	1093.9 (1)	1526.03 (1)	1115.43 (25.88)	137.28 (156.43)	13.2
r210_21	100	21	1096.46 (41.96)	1055.98 (1)	1193.02 (1)	1083.53 (25.33)	12.93 (40.4)	12
r211_21	100	21	1046.74 (54.79)	980.63 (1)	1156.06 (1)	1014.46 (34.2)	32.28 (57.74)	11.7
rc101_21	100	21	2040.86 (102.13)	1950.12 (1)	2289.07 (1)	1984.98 (103.06)	55.88 (46.79)	22.2
rc102_21	100	21	1826.31 (65.54)	1756.22 (1)	1940.25 (1)	1766.93 (36.96)	59.38 (51.14)	18.8
rc103_21	100	21	1621.43 (88.69)	1523.86 (1)	1798.28 (1)	1577.08 (67.59)	44.35 (60.53)	16.8
rc104_21	100	21	1476.75 (67.2)	1301.43 (1)	1543.92 (1)	1412.27 (68.05)	64.47 (59.35)	14.3
rc105_21	100	21	1740.49 (75.68)	1651.75 (1)	1889.65 (1)	1673.37 (72.31)	67.12 (74.39)	17.8
rc106_21	100	21	1713.77 (105.2)	1526.65 (1)	1912.13 (1)	1582.52 (71.21)	131.25 (102.49)	16.6
rc107_21	100	21	1488.94 (67.87)	1390.75 (1)	1582.19 (1)	1411.06 (40.9)	77.87 (60.96)	14.2
rc108_21	100	21	1457.14 (124.61)	1237.22 (1)	1626.6 (1)	1361.5 (98.99)	95.64 (83.79)	13.7
rc201_21	100	21	1633.31 (69.13)	1529.45 (1)	1762.48 (1)	1605.14 (68.57)	28.17 (37.5)	15.6
rc202_21	100	21	1565.08 (262.95)	1347.34 (1)	2070.84 (1)	1398.88 (31.34)	166.2 (256.35)	13.1
rc203_21	100	21	1404.95 (256.28)	1222.68 (1)	2019.14 (1)	1284.49 (49.57)	120.46 (229.43)	13
rc204_21	100	21	1148.66 (35.73)	1111.57 (1)	1215.46 (1)	1148.66 (35.73)	0.0 (0.0)	11.8
rc205_21	100	21	1464.91 (131.86)	1307.77 (1)	1716.81 (1)	1371.45 (35.16)	93.45 (121.36)	13.6
rc206_21	100	21	1561.74 (192.17)	1355.69 (1)	1856.63 (1)	1418.3 (48.4)	143.44 (193.16)	13.7
rc207_21	100	21	1271.28 (30.47)	1215.26 (1)	1306.27 (1)	1265.37 (35.54)	5.91 (17.96)	12.4
rc208_21	100	21	1181.17 (60.67)	1107.15 (1)	1278.55 (1)	1180.46 (61.23)	0.7 (0.8)	12.3

B.2 Results for TDPR-EVRP-STW

In this section, we showcase the results for TDPR-EVRP-STW obtained through various methods, applied to datasets I_1 and I_2. The tables that follow will be formatted identically to those in Section B.1, ensuring consistency in data presentation and ease of comparison across different sections of our study.

B.2.1 Results on the instance set I_1

TABLE B.17: Results for TDPR-EVRP-STW obtained by GVNS on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Distance (σ)**	**Penalty (σ)**	
c101C10	10	5	374.95 (5.51)	359.26 (1)	376.69 (27)	374.95 (5.51)	0.0 (0.0)	4
c101C5	5	3	263.59 (19.93)	234.82 (11)	277.67 (13)	230.28 (3.13)	33.31 (23.05)	3
c103C15	15	5	367.68 (0.0)	367.68 (30)	367.68 (30)	367.68 (0.0)	0.0 (0.0)	4
c103C5	5	2	165.67 (0.0)	165.67 (30)	165.67 (30)	165.67 (0.0)	0.0 (0.0)	3
c104C10	10	4	290.56 (7.81)	284.51 (20)	299.63 (10)	290.56 (7.81)	0.0 (0.0)	2.4
c106C15	15	3	267.81 (17.96)	259.57 (26)	310.38 (1)	267.52 (17.21)	0.29 (0.92)	3
c202C10	10	5	265.48 (0.38)	265.36 (25)	266.57 (1)	265.48 (0.38)	0.0 (0.0)	3
c202C15	15	5	421.53 (17.52)	382.58 (1)	448.22 (1)	421.53 (17.52)	0.0 (0.0)	4.8
c205C10	10	3	247.25 (16.32)	228.28 (13)	259.89 (17)	247.25 (16.32)	0.0 (0.0)	3
c206C5	5	4	227.48 (8.33)	217.8 (10)	233.94 (17)	227.48 (8.33)	0.0 (0.0)	2.6
c208C15	15	4	309.82 (0.0)	309.82 (30)	309.82 (30)	309.82 (0.0)	0.0 (0.0)	4
c208C5	5	3	158.48 (0.0)	158.48 (30)	158.48 (30)	158.48 (0.0)	0.0 (0.0)	1
r102C10	10	4	296.71 (14.15)	282.12 (7)	330.57 (1)	247.65 (11.2)	49.07 (16.02)	3.3
r102C15	15	8	555.18 (84.15)	394.82 (1)	638.57 (1)	383.82 (13.21)	171.35 (91.58)	4.2
r103C10	10	3	158.16 (1.5)	157.68 (25)	162.44 (1)	154.03 (0.0)	4.12 (1.5)	2
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	376.52 (14.88)	361.34 (1)	391.26 (1)	312.16 (2.23)	64.36 (16.72)	3
r105C5	5	3	175.19 (1.97)	171.46 (5)	176.59 (1)	153.49 (0.0)	21.7 (1.97)	2
r201C10	10	4	220.0 (12.95)	205.0 (8)	234.14 (7)	220.0 (12.95)	0.0 (0.0)	2.3
r202C15	15	6	364.19 (17.78)	346.57 (11)	399.11 (1)	360.75 (19.47)	3.44 (3.4)	3.5
r202C5	5	3	141.03 (0.0)	141.03 (30)	141.03 (30)	141.03 (0.0)	0.0 (0.0)	2
r203C10	10	5	259.27 (8.91)	252.37 (16)	269.63 (13)	259.27 (8.91)	0.0 (0.0)	3
r203C5	5	4	197.66 (6.4)	194.63 (22)	209.81 (8)	197.66 (6.4)	0.0 (0.0)	2.2
r209C15	15	5	298.38 (22.33)	270.63 (1)	323.5 (10)	288.84 (20.76)	9.54 (9.63)	2.4
rc102C10	10	4	436.82 (0.0)	436.82 (30)	436.82 (30)	421.96 (0.0)	14.86 (0.0)	5
rc103C15	15	5	469.38 (85.0)	393.88 (14)	622.28 (1)	393.89 (0.96)	75.48 (85.25)	4
rc105C5	5	4	257.81 (0.24)	257.52 (13)	258.0 (16)	220.56 (0.0)	37.24 (0.24)	2
rc108C10	10	4	474.38 (56.29)	423.82 (11)	560.7 (8)	372.31 (0.0)	102.07 (56.29)	3
rc108C15	10	5	423.42 (23.23)	396.99 (14)	449.09 (4)	387.23 (9.08)	36.19 (31.18)	4
rc108C5	5	4	366.82 (53.47)	315.81 (8)	417.55 (16)	283.01 (34.87)	83.8 (88.34)	2.5
rc201C10	10	4	308.56 (4.41)	304.33 (1)	312.74 (17)	308.56 (4.41)	0.0 (0.0)	3
rc202C15	15	5	415.1 (5.98)	399.95 (1)	418.71 (19)	414.14 (7.21)	0.96 (1.3)	4
rc204C15	15	7	371.12 (27.27)	352.7 (15)	428.11 (1)	371.12 (27.27)	0.0 (0.0)	3.1
rc204C5	5	4	183.72 (0.0)	183.72 (30)	183.72 (30)	183.72 (0.0)	0.0 (0.0)	2
rc205C10	10	4	346.14 (19.91)	339.84 (26)	402.81 (1)	339.84 (0.0)	6.3 (19.91)	3
rc208C5	5	3	181.24 (0.0)	181.24 (30)	181.24 (30)	181.24 (0.0)	0.0 (0.0)	2

TABLE B.18: Results for TDPR-EVRP-STW obtained by GRASP on the instance set I_1.

Instance	**C**	**A**	**Value**					**Trucks**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Distance** (σ)	**Penalty** (σ)	
c101C10	10	5	367.79 (0.42)	367.66 (25)	368.98 (1)	367.45 (0.68)	0.35 (1.1)	3.9
c101C5	5	3	236.34 (4.81)	234.82 (29)	250.04 (1)	236.34 (4.81)	0.0 (0.0)	3.1
c103C15	15	5	414.28 (118.53)	348.45 (11)	641.58 (1)	355.86 (7.99)	58.41 (114.83)	3.5
c103C5	5	2	635.75 (404.58)	165.67 (14)	949.13 (16)	165.67 (0.0)	470.08 (404.58)	3
c104C10	10	4	298.12 (4.78)	284.51 (1)	299.63 (25)	298.12 (4.78)	0.0 (0.0)	2.9
c106C15	15	3	281.28 (0.0)	281.28 (30)	281.28 (30)	281.28 (0.0)	0.0 (0.0)	4
c202C10	10	5	264.4 (0.0)	264.4 (30)	264.4 (30)	264.4 (0.0)	0.0 (0.0)	3
c202C15	15	5	387.17 (4.05)	382.25 (1)	392.9 (7)	376.28 (11.5)	10.89 (7.52)	3.3
c205C10	10	3	228.28 (0.0)	228.28 (30)	228.28 (30)	228.28 (0.0)	0.0 (0.0)	3
c206C5	5	4	233.94 (0.0)	233.94 (30)	233.94 (30)	233.94 (0.0)	0.0 (0.0)	3
c208C15	15	4	315.31 (5.82)	309.82 (17)	321.43 (10)	315.31 (5.82)	0.0 (0.0)	3.5
c208C5	5	3	205.0 (0.0)	205.0 (30)	205.0 (30)	205.0 (0.0)	0.0 (0.0)	2
r102C10	10	4	288.4 (4.39)	282.12 (10)	291.96 (8)	256.26 (0.0)	32.14 (4.39)	4
r102C15	15	8	569.14 (136.38)	394.82 (1)	735.9 (1)	437.22 (111.1)	131.91 (113.43)	5.8
r103C10	10	3	160.02 (3.76)	157.68 (22)	165.86 (1)	156.37 (3.76)	3.65 (0.0)	2.3
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	430.97 (114.32)	331.44 (8)	606.01 (5)	324.68 (8.73)	106.29 (122.43)	3.6
r105C5	5	3	224.1 (19.14)	169.62 (1)	230.16 (28)	166.64 (1.05)	57.46 (20.19)	2.1
r201C10	10	4	205.86 (1.94)	205.0 (24)	210.75 (1)	205.86 (1.94)	0.0 (0.0)	3
r202C15	15	6	371.26 (16.17)	346.57 (1)	399.86 (1)	362.28 (10.17)	8.97 (15.67)	4.1
r202C5	5	3	157.5 (0.07)	157.42 (10)	157.55 (18)	157.5 (0.07)	0.0 (0.0)	3
r203C10	10	5	262.42 (19.67)	252.37 (19)	299.57 (6)	262.37 (19.68)	0.04 (0.13)	3.2
r203C5	5	4	200.73 (7.9)	194.63 (18)	210.76 (7)	200.73 (7.9)	0.0 (0.0)	2.4
r209C15	15	5	301.03 (11.91)	290.83 (7)	331.79 (1)	297.81 (5.04)	3.22 (10.17)	3.3
rc102C10	10	4	436.98 (0.09)	436.82 (6)	437.02 (23)	421.96 (0.0)	15.02 (0.09)	5
rc103C15	15	5	520.42 (90.89)	390.28 (1)	622.97 (11)	392.8 (1.74)	127.62 (90.02)	4.5
rc105C5	5	4	287.14 (17.25)	238.05 (1)	292.6 (29)	238.05 (0.0)	49.09 (17.25)	3
rc108C10	10	4	394.27 (29.09)	380.17 (22)	449.45 (7)	380.91 (1.19)	13.36 (28.17)	4
rc108C15	10	5	400.32 (10.87)	396.55 (4)	431.26 (1)	396.89 (0.18)	3.43 (10.84)	4.2
rc108C5	5	4	344.44 (47.93)	305.52 (1)	413.72 (9)	315.06 (3.37)	29.37 (47.3)	3
rc201C10	10	4	304.39 (0.02)	304.33 (1)	304.39 (29)	304.39 (0.02)	0.0 (0.0)	3
rc202C15	15	5	419.38 (15.19)	399.95 (7)	444.67 (6)	412.61 (8.76)	6.78 (10.26)	4.1
rc204C15	15	7	372.98 (62.61)	352.7 (1)	551.18 (1)	353.18 (0.19)	19.8 (62.61)	3.1
rc204C5	5	4	184.13 (0.0)	184.13 (30)	184.13 (30)	184.13 (0.0)	0.0 (0.0)	2
rc205C10	10	4	354.68 (30.28)	335.28 (16)	398.51 (11)	335.71 (1.37)	18.97 (30.55)	3.1
rc208C5	5	3	196.55 (0.0)	196.55 (30)	196.55 (30)	196.55 (0.0)	0.0 (0.0)	2

TABLE B.19: Results for TDPR-EVRP-STW obtained by ACO on the instance set I_1.

Instance	**C**	**A**	**Value**					**Trucks**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Distance** (σ)	**Penalty** (σ)	
c101C10	10	5	595.62 (47.9)	530.95 (1)	662.78 (4)	582.91 (48.92)	12.71 (21.87)	6.1
c101C5	5	3	290.6 (20.37)	253.11 (4)	303.8 (13)	290.6 (20.37)	0.0 (0.0)	4
c103C15	15	5	818.52 (65.59)	734.18 (1)	913.08 (1)	800.84 (82.46)	17.68 (24.88)	8.6
c103C5	5	2	170.79 (11.64)	167.11 (28)	203.91 (1)	170.79 (11.64)	0.0 (0.0)	3
c104C10	10	4	425.57 (23.59)	374.88 (1)	452.22 (1)	424.49 (22.96)	1.08 (3.42)	4.4
c106C15	15	3	676.13 (65.48)	597.66 (1)	780.45 (1)	675.03 (66.08)	1.1 (3.48)	7.8
c202C10	10	5	485.29 (60.64)	406.71 (5)	574.11 (1)	485.29 (60.64)	0.0 (0.0)	5.6
c202C15	15	5	845.88 (49.96)	717.32 (1)	888.42 (1)	845.88 (49.96)	0.0 (0.0)	8.7
c205C10	10	3	453.8 (62.94)	369.27 (1)	568.26 (1)	446.1 (50.95)	7.7 (24.36)	5.5
c206C5	5	4	278.83 (17.88)	251.41 (1)	303.73 (1)	278.83 (17.88)	0.0 (0.0)	2.8
c208C15	15	4	644.87 (39.88)	550.1 (1)	697.99 (1)	644.87 (39.88)	0.0 (0.0)	6.9
c208C5	5	3	216.54 (11.35)	205.0 (6)	241.37 (1)	216.54 (11.35)	0.0 (0.0)	2
r102C10	10	4	387.65 (52.18)	309.69 (1)	449.62 (1)	370.6 (40.77)	17.05 (20.32)	5.8
r102C15	15	8	722.06 (48.19)	609.88 (1)	777.14 (1)	650.11 (58.34)	71.96 (40.19)	8.8
r103C10	10	3	315.58 (27.28)	259.01 (1)	349.53 (1)	307.09 (31.27)	8.49 (13.6)	4.7
r104C5	5	3	140.23 (7.47)	136.69 (26)	154.41 (4)	136.75 (0.13)	3.48 (7.34)	2
r105C15	15	6	764.88 (56.42)	724.85 (1)	902.8 (1)	718.28 (44.65)	46.6 (44.09)	9.9
r105C5	5	3	207.14 (11.51)	195.31 (11)	217.96 (16)	206.65 (11.92)	0.49 (1.54)	4
r201C10	10	4	358.72 (22.8)	339.98 (7)	402.64 (1)	357.07 (24.37)	1.64 (4.83)	5.5
r202C15	15	6	709.52 (27.83)	661.33 (1)	760.28 (1)	707.58 (27.76)	1.94 (3.13)	7.8
r202C5	5	3	166.98 (7.88)	161.39 (4)	182.26 (1)	166.98 (7.88)	0.0 (0.0)	2.1
r203C10	10	5	400.18 (22.26)	359.08 (1)	432.11 (1)	400.18 (22.26)	0.0 (0.0)	4.5
r203C5	5	4	237.47 (2.95)	235.48 (15)	242.86 (8)	237.47 (2.95)	0.0 (0.0)	3
r209C15	15	5	689.45 (48.89)	603.04 (1)	769.61 (1)	683.91 (49.03)	5.54 (11.68)	7.8
rc102C10	10	4	517.41 (20.34)	487.62 (1)	541.06 (1)	510.49 (20.03)	6.92 (10.87)	6.1
rc103C15	15	5	640.15 (67.29)	524.18 (1)	722.65 (8)	593.86 (53.3)	46.29 (42.8)	6.2
rc105C5	5	4	256.91 (7.2)	245.89 (1)	270.17 (1)	249.35 (3.33)	7.56 (5.24)	3
rc108C10	10	4	446.85 (23.36)	414.93 (1)	475.87 (1)	445.71 (25.3)	1.14 (3.62)	4.7
rc108C15	10	5	748.47 (40.48)	680.29 (1)	807.7 (1)	731.99 (61.9)	16.48 (27.6)	7.4
rc108C5	5	4	315.15 (4.29)	302.95 (1)	316.51 (26)	310.25 (19.79)	4.9 (15.5)	2.9
rc201C10	10	4	468.66 (53.13)	381.7 (1)	550.4 (1)	465.45 (48.4)	3.21 (10.15)	5.8
rc202C15	15	5	771.45 (74.33)	671.56 (6)	889.99 (1)	727.92 (54.06)	43.53 (58.3)	7.7
rc204C15	15	7	655.91 (71.01)	563.31 (8)	759.53 (1)	653.16 (74.31)	2.75 (8.7)	5.3
rc204C5	5	4	191.2 (7.38)	185.16 (6)	204.53 (5)	191.2 (7.38)	0.0 (0.0)	2
rc205C10	10	4	490.82 (23.9)	458.14 (5)	525.67 (1)	483.02 (33.77)	7.8 (24.67)	5.2
rc208C5	5	3	202.44 (0.76)	201.66 (12)	203.93 (1)	202.44 (0.76)	0.0 (0.0)	2

TABLE B.20: Results for TDPR-EVRP-STW obtained by ACOLS on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Distance (σ)**	**Penalty (σ)**	
c101C10	10	5	405.82 (12.66)	379.58 (1)	422.22 (1)	401.45 (9.42)	4.37 (5.64)	4.1
c101C5	5	3	234.82 (0.0)	234.82 (30)	234.82 (30)	234.82 (0.0)	0.0 (0.0)	3
c103C15	15	5	365.89 (10.25)	358.12 (1)	392.53 (1)	360.43 (2.51)	5.45 (11.75)	3.9
c103C5	5	2	557.4 (412.92)	165.67 (13)	949.13 (14)	165.67 (0.0)	391.73 (412.92)	3
c104C10	10	4	332.07 (24.13)	301.44 (1)	368.53 (1)	317.34 (14.75)	14.72 (23.96)	3
c106C15	15	3	286.83 (7.72)	281.28 (20)	298.8 (1)	286.83 (7.72)	0.0 (0.0)	4.1
c202C10	10	5	244.88 (0.88)	243.2 (1)	245.29 (24)	244.88 (0.88)	0.0 (0.0)	2
c202C15	15	5	409.18 (22.99)	382.58 (4)	443.42 (1)	409.18 (22.99)	0.0 (0.0)	4.3
c205C10	10	3	241.25 (27.41)	228.28 (22)	297.0 (1)	228.28 (0.0)	12.97 (27.41)	2
c206C5	5	4	219.34 (0.0)	219.34 (30)	219.34 (30)	219.34 (0.0)	0.0 (0.0)	2
c208C15	15	4	382.69 (42.45)	321.43 (1)	463.2 (1)	382.69 (42.45)	0.0 (0.0)	4
c208C5	5	3	197.11 (36.33)	164.34 (1)	291.1 (1)	184.69 (16.39)	12.43 (39.3)	1.6
r102C10	10	4	291.43 (29.69)	262.49 (4)	327.16 (1)	260.36 (3.04)	31.07 (32.6)	3.9
r102C15	15	8	459.05 (29.96)	425.44 (1)	521.35 (1)	419.41 (15.04)	39.64 (34.48)	6
r103C10	10	3	176.86 (2.4)	170.45 (1)	177.87 (22)	166.8 (0.0)	10.06 (2.4)	3
r104C5	5	3	140.93 (9.82)	136.69 (24)	166.5 (1)	140.93 (9.82)	0.0 (0.0)	2.1
r105C15	15	6	386.79 (72.68)	334.04 (1)	520.96 (1)	334.37 (3.75)	52.42 (75.01)	4
r105C5	5	3	173.11 (27.27)	156.08 (9)	239.4 (1)	163.34 (12.46)	9.78 (25.94)	2.3
r201C10	10	4	247.47 (54.79)	207.94 (1)	400.3 (1)	229.92 (12.09)	17.55 (52.2)	3
r202C15	15	6	389.93 (31.06)	346.54 (1)	436.52 (1)	378.77 (30.21)	11.17 (26.18)	4
r202C5	5	3	141.22 (0.13)	141.03 (11)	141.29 (19)	141.22 (0.13)	0.0 (0.0)	2
r203C10	10	5	279.26 (7.81)	260.12 (1)	288.99 (1)	279.26 (7.81)	0.0 (0.0)	3
r203C5	5	4	194.05 (0.53)	193.84 (1)	195.57 (1)	194.05 (0.53)	0.0 (0.0)	2
r209C15	15	5	359.86 (26.0)	316.18 (1)	394.27 (1)	359.82 (25.94)	0.04 (0.12)	4.2
rc102C10	10	4	429.89 (4.78)	426.92 (20)	436.82 (9)	421.96 (0.0)	7.93 (4.78)	5
rc103C15	15	5	452.19 (78.01)	393.88 (1)	613.92 (1)	396.06 (1.91)	56.12 (77.74)	4.3
rc105C5	5	4	263.08 (28.14)	216.15 (1)	292.6 (6)	220.19 (9.6)	42.89 (23.84)	2.2
rc108C10	10	4	432.17 (43.99)	382.64 (1)	521.27 (1)	389.73 (5.34)	42.44 (41.55)	4
rc108C15	10	5	466.96 (46.97)	410.66 (1)	583.22 (1)	447.1 (17.19)	19.86 (40.56)	4.7
rc108C5	5	4	625.95 (112.61)	305.52 (1)	662.38 (23)	259.09 (16.32)	366.87 (128.93)	2.1
rc201C10	10	4	308.93 (9.0)	304.06 (4)	325.91 (5)	306.04 (3.73)	2.89 (5.33)	3
rc202C15	15	5	463.37 (30.55)	440.76 (1)	531.42 (1)	463.37 (30.55)	0.0 (0.0)	5.4
rc204C15	15	7	405.24 (70.5)	351.4 (1)	575.22 (1)	363.44 (16.11)	41.8 (65.64)	3.1
rc204C5	5	4	227.68 (146.47)	179.16 (13)	644.49 (1)	180.48 (3.75)	47.21 (149.28)	1.4
rc205C10	10	4	374.45 (29.96)	339.62 (1)	415.94 (1)	354.07 (15.57)	20.38 (32.34)	3.3
rc208C5	5	3	170.71 (9.08)	167.84 (26)	196.55 (1)	170.71 (9.08)	0.0 (0.0)	1.1

Table B.21: Results for TDPR-EVRP-STW obtained by BCOi on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101C10	10	5	473.23 (11.87)	455.47 (1)	488.62 (1)	468.69 (12.49)	4.55 (5.87)	5.6
c101C5	5	3	249.44 (27.97)	234.82 (19)	307.45 (1)	249.44 (27.97)	0.0 (0.0)	3.2
c103C15	15	5	609.52 (15.36)	583.49 (1)	631.43 (1)	609.52 (15.36)	0.0 (0.0)	8.3
c103C5	5	2	167.17 (7.18)	162.4 (8)	187.22 (1)	167.17 (7.18)	0.0 (0.0)	2.5
c104C10	10	4	317.38 (6.88)	304.36 (1)	327.72 (1)	316.3 (6.56)	1.08 (3.42)	3.1
c106C15	15	3	491.38 (20.85)	451.5 (1)	508.87 (1)	491.15 (20.66)	0.23 (0.73)	9.2
c202C10	10	5	339.92 (10.53)	322.68 (1)	357.27 (1)	339.92 (10.53)	0.0 (0.0)	4.5
c202C15	15	5	627.95 (19.99)	589.42 (1)	649.27 (1)	627.95 (19.99)	0.0 (0.0)	8.5
c205C10	10	3	348.49 (10.11)	334.72 (1)	366.17 (1)	348.49 (10.11)	0.0 (0.0)	5.5
c206C5	5	4	243.37 (10.06)	236.13 (1)	271.5 (1)	243.37 (10.06)	0.0 (0.0)	2.9
c208C15	15	4	594.67 (12.98)	575.22 (1)	615.27 (1)	594.67 (12.98)	0.0 (0.0)	9.1
c208C5	5	3	203.73 (28.89)	177.91 (4)	256.9 (4)	203.73 (28.89)	0.0 (0.0)	1.9
r102C10	10	4	308.27 (7.96)	299.86 (6)	319.06 (1)	308.26 (7.96)	0.01 (0.01)	5.3
r102C15	15	8	532.13 (6.07)	522.24 (1)	545.6 (1)	523.12 (14.65)	9.0 (11.87)	9.5
r103C10	10	3	213.02 (7.67)	199.56 (5)	220.25 (1)	211.85 (9.14)	1.17 (1.89)	4.5
r104C5	5	3	136.72 (0.1)	136.69 (27)	137.01 (1)	136.72 (0.1)	0.0 (0.0)	2
r105C15	15	6	501.64 (9.49)	487.88 (1)	515.12 (8)	497.26 (10.26)	4.37 (2.36)	9.1
r105C5	5	3	177.83 (25.35)	156.08 (1)	228.29 (1)	176.92 (23.47)	0.91 (1.92)	2.9
r201C10	10	4	272.5 (6.55)	263.55 (1)	282.66 (1)	271.54 (7.03)	0.95 (2.01)	5.3
r202C15	15	6	568.78 (14.19)	551.92 (1)	601.25 (1)	568.78 (14.19)	0.0 (0.0)	6.5
r202C5	5	3	142.01 (11.59)	128.88 (4)	171.32 (1)	142.01 (11.59)	0.0 (0.0)	1.9
r203C10	10	5	285.65 (8.65)	272.84 (7)	297.34 (1)	285.65 (8.65)	0.0 (0.0)	3.1
r203C5	5	4	199.83 (10.45)	194.19 (8)	226.03 (1)	199.83 (10.45)	0.0 (0.0)	2
r209C15	15	5	476.44 (4.38)	466.08 (1)	481.2 (1)	473.67 (9.4)	2.77 (8.76)	6.5
rc102C10	10	4	464.6 (11.13)	452.82 (12)	484.19 (1)	461.42 (9.92)	3.18 (5.11)	6
rc103C15	15	5	584.77 (14.58)	555.81 (1)	609.47 (1)	581.69 (15.77)	3.09 (5.37)	8.4
rc105C5	5	4	243.15 (10.21)	238.05 (14)	269.7 (1)	241.98 (8.03)	1.17 (2.48)	3.1
rc108C10	10	4	428.03 (6.97)	414.16 (1)	439.67 (1)	427.34 (7.76)	0.69 (1.45)	5.3
rc108C15	10	5	614.64 (20.48)	559.23 (1)	632.06 (1)	606.62 (25.23)	8.02 (17.98)	7.7
rc108C5	5	4	300.01 (11.38)	270.34 (1)	305.52 (19)	286.12 (25.3)	13.89 (20.4)	2.6
rc201C10	10	4	375.79 (10.19)	361.16 (1)	386.87 (1)	375.79 (10.19)	0.0 (0.0)	4.9
rc202C15	15	5	643.71 (17.63)	621.63 (1)	667.93 (1)	643.3 (17.62)	0.41 (0.86)	8.3
rc204C15	15	7	433.11 (19.44)	404.16 (1)	450.55 (1)	433.11 (19.44)	0.0 (0.0)	4
rc204C5	5	4	180.06 (4.72)	176.0 (6)	189.01 (1)	180.06 (4.72)	0.0 (0.0)	1.7
rc205C10	10	4	395.65 (13.7)	370.16 (1)	415.05 (1)	393.29 (14.9)	2.36 (4.73)	4.2
rc208C5	5	3	178.64 (7.51)	173.57 (7)	190.84 (4)	178.64 (7.51)	0.0 (0.0)	1.3

TABLE B.22: Results for TDPR-EVRP-STW obtained by GA on the instance set I_1.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{min})	Distance (σ)	Penalty (σ)	
c101C10	10	5	411.66 (2.74)	404.05 (1)	413.05 (15)	411.66 (2.74)	0.0 (0.0)	4
c101C5	5	3	243.28 (5.86)	234.82 (9)	247.15 (17)	243.28 (5.86)	0.0 (0.0)	2.9
c103C15	15	5	416.66 (20.67)	380.35 (6)	436.35 (1)	416.66 (20.67)	0.0 (0.0)	5
c103C5	5	2	161.26 (0.0)	161.26 (30)	161.26 (30)	161.26 (0.0)	0.0 (0.0)	2
c104C10	10	4	279.33 (1.9)	273.93 (1)	279.93 (25)	279.33 (1.9)	0.0 (0.0)	2
c106C15	15	3	328.92 (11.43)	320.37 (11)	349.75 (6)	328.92 (11.43)	0.0 (0.0)	4.4
c202C10	10	5	257.98 (3.47)	256.33 (26)	264.57 (4)	257.98 (3.47)	0.0 (0.0)	2.2
c202C15	15	5	405.06 (14.93)	395.45 (16)	440.42 (1)	405.06 (14.93)	0.0 (0.0)	4.2
c205C10	10	3	267.83 (7.38)	265.5 (29)	288.82 (1)	267.83 (7.38)	0.0 (0.0)	3.1
c206C5	5	4	239.05 (1.23)	238.66 (27)	242.56 (1)	239.05 (1.23)	0.0 (0.0)	2.1
c208C15	15	4	315.45 (13.72)	300.55 (7)	348.85 (1)	315.45 (13.72)	0.0 (0.0)	2.9
c208C5	5	3	158.48 (0.0)	158.48 (30)	158.48 (30)	158.48 (0.0)	0.0 (0.0)	1
r102C10	10	4	262.93 (0.0)	262.93 (30)	262.93 (30)	262.93 (0.0)	0.0 (0.0)	4
r102C15	15	8	429.24 (1.75)	426.87 (5)	431.72 (5)	427.42 (6.57)	1.83 (5.79)	6
r103C10	10	3	201.46 (1.94)	198.77 (9)	203.09 (1)	201.46 (1.94)	0.0 (0.0)	3
r104C5	5	3	136.59 (0.12)	136.45 (12)	136.69 (16)	136.59 (0.12)	0.0 (0.0)	2
r105C15	15	6	378.63 (6.48)	366.45 (1)	387.64 (1)	370.45 (11.07)	8.17 (5.91)	5.1
r105C5	5	3	169.31 (4.59)	165.88 (7)	182.01 (1)	169.31 (4.59)	0.0 (0.0)	3
r201C10	10	4	246.55 (1.94)	243.78 (4)	249.94 (1)	246.08 (2.13)	0.48 (1.5)	3.7
r202C15	15	6	401.42 (13.11)	392.26 (4)	436.69 (1)	401.42 (13.11)	0.0 (0.0)	3.9
r202C5	5	3	140.49 (5.62)	128.88 (1)	143.39 (1)	140.49 (5.62)	0.0 (0.0)	1.8
r203C10	10	5	241.67 (3.15)	235.97 (1)	247.93 (1)	241.67 (3.15)	0.0 (0.0)	2
r203C5	5	4	196.18 (0.76)	195.57 (12)	197.26 (10)	196.18 (0.76)	0.0 (0.0)	1.7
r209C15	15	5	360.7 (17.06)	343.58 (5)	388.43 (1)	360.7 (17.06)	0.0 (0.0)	3.8
rc102C10	10	4	428.46 (0.0)	428.46 (30)	428.46 (30)	423.49 (0.0)	4.97 (0.0)	5
rc103C15	15	5	400.65 (0.01)	400.63 (5)	400.66 (24)	399.61 (0.54)	1.04 (0.55)	5
rc105C5	5	4	239.04 (0.68)	238.05 (10)	239.46 (20)	239.04 (0.68)	0.0 (0.0)	3
rc108C10	10	4	394.7 (7.32)	390.63 (23)	412.14 (1)	393.23 (7.43)	1.47 (4.66)	4.1
rc108C15	10	5	455.62 (18.3)	416.11 (1)	468.76 (6)	455.62 (18.3)	0.0 (0.0)	4.9
rc108C5	5	4	300.27 (6.78)	290.73 (7)	305.52 (14)	292.93 (18.48)	7.34 (11.82)	2.7
rc201C10	10	4	309.6 (1.45)	305.48 (1)	310.06 (27)	309.6 (1.45)	0.0 (0.0)	3
rc202C15	15	5	437.51 (15.47)	423.03 (1)	477.48 (1)	437.51 (15.47)	0.0 (0.0)	3.7
rc204C15	15	7	362.02 (22.2)	333.27 (4)	391.81 (1)	362.02 (22.2)	0.0 (0.0)	2.6
rc204C5	5	4	175.71 (0.9)	173.17 (1)	176.0 (29)	175.71 (0.9)	0.0 (0.0)	1.8
rc205C10	10	4	363.39 (11.15)	344.52 (1)	370.51 (17)	363.39 (11.15)	0.0 (0.0)	3.5
rc208C5	5	3	167.98 (0.0)	167.98 (30)	167.98 (30)	167.98 (0.0)	0.0 (0.0)	1

Table B.23: Results for TDPR-EVRP-STW obtained by MA on the instance set I_1.

Instance	**C**	**A**	**Value**					**Trucks**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Distance** (σ)	**Penalty** (σ)	
c101C10	10	5	511.83 (402.89)	331.5 (11)	1561.45 (1)	335.5 (5.24)	176.33 (404.77)	3
c101C5	5	3	532.7 (194.29)	280.51 (10)	683.59 (15)	215.06 (8.59)	317.65 (202.37)	1.4
c103C15	15	5	487.32 (175.0)	343.84 (5)	869.58 (1)	346.22 (3.48)	141.1 (175.12)	3
c103C5	5	2	1000.37 (279.86)	469.94 (4)	1148.88 (7)	151.88 (1.38)	848.49 (281.24)	1
c104C10	10	4	263.9 (0.0)	263.9 (30)	263.9 (30)	263.9 (0.0)	0.0 (0.0)	2
c106C15	15	3	301.19 (108.4)	266.39 (9)	609.71 (1)	266.94 (0.37)	34.25 (108.32)	3
c202C10	10	5	239.88 (0.02)	239.84 (1)	239.89 (25)	239.88 (0.02)	0.0 (0.0)	2
c202C15	15	5	377.08 (24.94)	363.39 (7)	445.01 (1)	365.29 (1.54)	11.8 (24.42)	3
c205C10	10	3	235.63 (30.83)	224.82 (1)	323.38 (1)	225.77 (0.5)	9.86 (31.17)	2
c206C5	5	4	423.8 (356.43)	202.44 (20)	940.31 (7)	202.1 (0.54)	221.7 (356.97)	1
c208C15	15	4	297.87 (1.06)	296.85 (9)	300.34 (1)	297.87 (1.06)	0.0 (0.0)	2.5
c208C5	5	3	158.37 (0.14)	158.2 (11)	158.48 (16)	158.37 (0.14)	0.0 (0.0)	1
r102C10	10	4	273.84 (22.03)	245.49 (1)	300.4 (1)	242.26 (2.69)	31.57 (24.15)	3
r102C15	15	8	502.81 (87.28)	400.61 (1)	621.51 (1)	388.71 (7.29)	114.11 (91.49)	5.5
r103C10	10	3	160.52 (3.03)	157.68 (16)	164.09 (1)	154.03 (0.0)	6.48 (3.03)	2
r104C5	5	3	139.31 (13.28)	133.05 (22)	167.42 (1)	133.73 (1.43)	5.58 (11.85)	1.2
r105C15	15	6	450.32 (119.5)	331.1 (5)	606.95 (4)	318.43 (6.72)	131.89 (124.28)	3.4
r105C5	5	3	184.58 (31.3)	153.49 (7)	247.57 (1)	153.02 (0.99)	31.56 (32.24)	2
r201C10	10	4	223.69 (59.13)	205.0 (27)	392.0 (1)	205.0 (0.0)	18.7 (59.13)	3
r202C15	15	6	347.15 (8.06)	341.91 (1)	369.43 (1)	342.43 (1.72)	4.71 (8.89)	3
r202C5	5	3	143.92 (54.19)	126.78 (28)	298.15 (1)	126.78 (0.0)	17.14 (54.19)	1
r203C10	10	5	230.63 (0.28)	230.54 (28)	231.42 (1)	230.63 (0.28)	0.0 (0.0)	2
r203C5	5	4	183.88 (16.11)	178.05 (6)	229.72 (1)	178.81 (0.4)	5.07 (16.04)	1
r209C15	15	5	285.2 (16.45)	270.63 (5)	315.21 (4)	274.71 (4.49)	10.49 (18.63)	2.4
rc102C10	10	4	495.6 (124.22)	400.52 (14)	742.09 (1)	407.0 (11.33)	88.59 (122.07)	4.2
rc103C15	15	5	488.73 (81.95)	390.28 (8)	619.46 (4)	387.84 (8.99)	100.89 (82.94)	4.6
rc105C5	5	4	275.52 (45.38)	253.72 (7)	361.61 (6)	219.28 (0.47)	56.24 (44.93)	2
rc108C10	10	4	535.13 (81.36)	408.62 (6)	607.87 (1)	345.67 (0.0)	189.46 (81.36)	3
rc108C15	10	5	482.81 (104.37)	369.27 (1)	667.26 (1)	370.74 (20.6)	112.07 (120.14)	3.6
rc108C5	5	4	293.75 (32.2)	267.77 (1)	380.51 (1)	211.53 (0.0)	82.22 (32.2)	1
rc201C10	10	4	442.25 (107.31)	356.39 (7)	569.94 (1)	301.92 (0.0)	140.33 (107.31)	2
rc202C15	15	5	426.77 (38.51)	383.53 (1)	493.4 (8)	387.79 (8.67)	38.98 (44.02)	3
rc204C15	15	7	337.96 (32.9)	313.53 (10)	422.79 (1)	329.22 (14.08)	8.75 (27.52)	2.6
rc204C5	5	4	220.53 (152.58)	172.03 (1)	654.79 (1)	172.29 (0.09)	48.25 (152.57)	1
rc205C10	10	4	540.04 (65.62)	508.59 (5)	665.49 (1)	306.82 (0.0)	233.22 (65.62)	2
rc208C5	5	3	162.81 (0.0)	162.81 (30)	162.81 (30)	162.81 (0.0)	0.0 (0.0)	1

Table B.24: Results for TDPR-EVRP-STW obtained by MMA on the instance set I_1.

Instance	**C**	**A**	**Value**					**Trucks**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Distance** (σ)	**Penalty** (σ)	
c101C10	10	5	382.99 (4.79)	377.19 (1)	392.1 (1)	382.99 (4.79)	0.0 (0.0)	4
c101C5	5	3	234.82 (0.0)	234.82 (30)	234.82 (30)	234.82 (0.0)	0.0 (0.0)	3
c103C15	15	5	383.93 (45.6)	359.46 (1)	470.11 (5)	360.74 (0.89)	23.19 (45.64)	4
c103C5	5	2	161.26 (0.0)	161.26 (30)	161.26 (30)	161.26 (0.0)	0.0 (0.0)	2
c104C10	10	4	268.71 (2.77)	266.64 (20)	273.68 (1)	268.71 (2.77)	0.0 (0.0)	2
c106C15	15	3	384.76 (216.52)	282.06 (24)	795.58 (6)	285.36 (6.97)	99.4 (209.55)	4
c202C10	10	5	248.66 (3.98)	243.22 (9)	251.95 (8)	248.66 (3.98)	0.0 (0.0)	2
c202C15	15	5	384.44 (4.88)	373.68 (1)	392.09 (1)	379.46 (8.65)	4.98 (6.06)	3.5
c205C10	10	3	228.27 (0.0)	228.27 (30)	228.27 (30)	228.27 (0.0)	0.0 (0.0)	2
c206C5	5	4	219.34 (0.0)	219.34 (30)	219.34 (30)	219.34 (0.0)	0.0 (0.0)	2
c208C15	15	4	306.39 (5.51)	298.4 (7)	309.82 (19)	306.39 (5.51)	0.0 (0.0)	3
c208C5	5	3	160.44 (4.14)	158.48 (26)	168.29 (4)	158.48 (0.0)	1.96 (4.14)	1
r102C10	10	4	292.84 (33.25)	262.49 (1)	332.15 (5)	261.0 (2.9)	31.84 (35.65)	4
r102C15	15	8	447.89 (56.82)	409.94 (1)	602.62 (1)	415.11 (9.01)	32.78 (57.7)	5.8
r103C10	10	3	177.21 (10.25)	162.13 (1)	195.1 (6)	171.19 (13.22)	6.03 (3.47)	2.9
r104C5	5	3	136.69 (0.0)	136.69 (30)	136.69 (30)	136.69 (0.0)	0.0 (0.0)	2
r105C15	15	6	340.56 (27.77)	331.44 (12)	419.58 (1)	331.44 (0.0)	9.12 (27.77)	4
r105C5	5	3	171.42 (14.03)	153.49 (1)	188.44 (10)	160.14 (6.0)	11.28 (11.89)	2.4
r201C10	10	4	215.02 (0.86)	213.39 (4)	215.43 (26)	214.07 (2.87)	0.95 (2.01)	3
r202C15	15	6	349.1 (11.97)	342.58 (1)	382.38 (1)	342.82 (1.02)	6.28 (12.05)	3
r202C5	5	3	128.78 (0.0)	128.78 (30)	128.78 (30)	128.78 (0.0)	0.0 (0.0)	1
r203C10	10	5	232.05 (0.76)	230.54 (1)	232.68 (17)	232.05 (0.76)	0.0 (0.0)	2
r203C5	5	4	179.0 (0.0)	179.0 (30)	179.0 (30)	179.0 (0.0)	0.0 (0.0)	1
r209C15	15	5	291.22 (17.54)	270.63 (5)	323.5 (1)	286.82 (13.63)	4.4 (13.91)	3
rc102C10	10	4	430.4 (4.7)	426.92 (18)	436.82 (7)	421.96 (0.0)	8.44 (4.7)	5
rc103C15	15	5	446.69 (64.29)	393.96 (1)	623.05 (1)	393.96 (0.0)	52.72 (64.29)	5
rc105C5	5	4	268.17 (31.17)	226.44 (7)	292.6 (11)	234.55 (7.37)	33.62 (26.49)	2.8
rc108C10	10	4	529.68 (62.3)	427.73 (1)	627.01 (1)	385.04 (9.05)	144.64 (67.07)	4
rc108C15	10	5	396.97 (0.0)	396.97 (30)	396.97 (30)	396.97 (0.0)	0.0 (0.0)	4
rc108C5	5	4	321.61 (30.39)	291.46 (1)	365.24 (11)	300.22 (14.57)	21.4 (28.76)	2.9
rc201C10	10	4	304.33 (0.0)	304.33 (30)	304.33 (30)	304.33 (0.0)	0.0 (0.0)	3
rc202C15	15	5	426.13 (11.22)	395.02 (1)	436.77 (1)	397.33 (2.67)	28.8 (10.12)	3.1
rc204C15	15	7	326.49 (14.33)	313.53 (5)	352.39 (1)	326.49 (14.33)	0.0 (0.0)	2.1
rc204C5	5	4	172.31 (0.0)	172.31 (30)	172.31 (30)	172.31 (0.0)	0.0 (0.0)	1
rc205C10	10	4	360.61 (47.04)	335.7 (6)	492.02 (1)	336.13 (6.69)	24.49 (53.28)	2.9
rc208C5	5	3	167.97 (0.05)	167.84 (1)	167.98 (25)	167.97 (0.05)	0.0 (0.0)	1

B.2.2 Results on the instance set I_2

Table B.25: Results for TDPR-EVRP-STW obtained by GVNS on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	1725.4 (243.01)	1414.87 (1)	2214.75 (1)	1617.98 (107.83)	107.42 (168.97)	20.4
c102_21	100	21	1596.69 (99.03)	1459.74 (1)	1735.26 (1)	1579.31 (81.13)	17.38 (23.12)	20.4
c103_21	100	21	1555.91 (134.01)	1338.64 (1)	1744.39 (1)	1533.42 (107.54)	22.49 (47.24)	20
c104_21	100	21	1450.49 (90.07)	1310.81 (1)	1566.72 (1)	1443.08 (88.47)	7.41 (5.64)	18.6
c105_21	100	21	1494.98 (203.45)	1323.17 (1)	1861.61 (1)	1436.55 (118.76)	58.43 (111.7)	18.7
c106_21	100	21	1507.06 (74.75)	1445.17 (1)	1677.56 (1)	1504.51 (73.43)	2.55 (8.07)	19.6
c107_21	100	21	1484.23 (87.44)	1325.7 (1)	1598.12 (1)	1481.28 (86.21)	2.95 (8.45)	19.1
c108_21	100	21	1564.1 (155.62)	1325.81 (1)	1930.02 (1)	1526.96 (88.07)	37.13 (95.0)	20
c109_21	100	21	1355.7 (98.74)	1239.19 (1)	1545.76 (1)	1355.7 (98.74)	0.0 (0.0)	17.3
c201_21	100	21	1423.71 (284.86)	1144.21 (1)	2159.86 (1)	1354.04 (125.34)	69.68 (220.33)	17.5
c202_21	100	21	1386.15 (95.2)	1192.44 (1)	1509.94 (1)	1386.15 (95.2)	0.0 (0.0)	18.6
c203_21	100	21	1265.13 (131.61)	1134.71 (1)	1467.86 (1)	1265.13 (131.61)	0.0 (0.0)	16.9
c204_21	100	21	1238.87 (154.5)	1010.61 (1)	1449.13 (1)	1235.83 (150.14)	3.04 (9.61)	15.6
c205_21	100	21	1398.87 (68.33)	1278.75 (1)	1507.04 (1)	1398.84 (68.29)	0.03 (0.05)	18.7
c206_21	100	21	1452.98 (62.53)	1299.08 (1)	1499.18 (1)	1452.98 (62.53)	0.0 (0.0)	18.6
c207_21	100	21	1387.47 (126.24)	1071.3 (1)	1541.03 (1)	1387.47 (126.24)	0.0 (0.0)	17.5
c208_21	100	21	1439.81 (114.51)	1162.29 (1)	1600.09 (1)	1434.33 (111.18)	5.48 (11.55)	18.2
r101_21	100	21	2481.16 (322.36)	2201.47 (7)	3058.22 (4)	1960.0 (51.12)	521.16 (346.14)	21.4
r102_21	100	21	2356.55 (109.42)	2196.14 (5)	2532.81 (1)	1809.1 (43.1)	547.45 (92.48)	21
r103_21	100	21	1804.71 (92.55)	1674.47 (1)	1983.39 (1)	1658.49 (69.25)	146.22 (52.98)	20.4
r104_21	100	21	1543.97 (86.05)	1405.53 (1)	1671.79 (1)	1505.79 (66.36)	38.19 (53.1)	20.5
r105_21	100	21	1980.19 (182.5)	1703.12 (1)	2335.79 (1)	1730.26 (40.15)	249.94 (158.12)	21
r106_21	100	21	1755.86 (67.63)	1634.71 (1)	1861.62 (1)	1659.46 (39.84)	96.4 (34.6)	21
r107_21	100	21	1622.3 (77.99)	1546.4 (1)	1812.69 (1)	1574.15 (38.85)	48.15 (51.09)	20.7
r108_21	100	21	1659.99 (98.19)	1552.9 (1)	1878.76 (1)	1628.6 (53.35)	31.39 (48.23)	20.7
r109_21	100	21	1633.74 (96.55)	1464.7 (1)	1805.79 (1)	1572.89 (50.74)	60.85 (64.52)	20.5
r110_21	100	21	1547.18 (75.91)	1459.48 (1)	1655.38 (1)	1515.94 (54.92)	31.24 (31.7)	19.3
r111_21	100	21	1579.15 (69.59)	1439.45 (1)	1661.35 (1)	1553.74 (61.39)	25.41 (15.42)	20.6
r112_21	100	21	1566.66 (48.41)	1453.14 (1)	1621.51 (1)	1562.65 (47.56)	4.0 (4.94)	21
r201_21	100	21	1354.63 (38.97)	1276.31 (1)	1403.28 (1)	1354.62 (39.01)	166.91 (239.38)	17.1
r202_21	100	21	1197.12 (30.02)	1146.72 (1)	1237.47 (1)	1196.98 (29.81)	154.36 (254.31)	14.9
r203_21	100	21	1141.68 (35.53)	1106.17 (1)	1231.05 (1)	1141.54 (35.14)	66.05 (208.38)	14.6
r204_21	100	21	977.72 (21.63)	944.03 (1)	1011.76 (1)	977.72 (21.63)	48.62 (102.71)	12
r205_21	100	21	1251.36 (35.87)	1192.08 (1)	1291.94 (1)	1250.96 (35.73)	95.53 (100.36)	16.1
r206_21	100	21	1158.78 (49.14)	1081.99 (1)	1228.84 (1)	1158.78 (49.14)	60.18 (127.55)	14.6
r207_21	100	21	995.39 (16.6)	972.6 (1)	1028.31 (1)	995.39 (16.6)	209.68 (262.33)	12
r208_21	100	21	969.62 (12.65)	956.11 (1)	1002.64 (1)	968.6 (12.8)	59.99 (121.18)	12
r209_21	100	21	1155.3 (107.42)	1068.85 (1)	1421.15 (1)	1154.61 (107.7)	185.76 (158.58)	14.7
r210_21	100	21	1074.74 (20.97)	1022.87 (1)	1105.77 (1)	1074.43 (20.86)	192.87 (166.12)	13
r211_21	100	21	1016.09 (29.17)	990.64 (1)	1080.28 (1)	1016.09 (29.17)	46.72 (82.0)	12.4
rc101_21	100	21	2129.64 (76.27)	2004.82 (1)	2244.95 (1)	1979.01 (62.04)	150.64 (36.83)	20.7
rc102_21	100	21	2013.97 (130.24)	1835.08 (1)	2222.26 (1)	1914.57 (109.12)	99.4 (26.93)	20.4
rc103_21	100	21	1874.88 (155.86)	1715.45 (1)	2135.58 (1)	1811.49 (106.51)	63.39 (59.38)	19.6
rc104_21	100	21	1827.82 (122.63)	1656.96 (1)	2078.92 (1)	1776.83 (82.98)	50.99 (49.55)	19.6
rc105_21	100	21	2108.15 (149.31)	1881.68 (1)	2312.65 (1)	1968.05 (96.66)	140.09 (65.69)	20.7
rc106_21	100	21	2014.35 (232.51)	1766.17 (1)	2539.55 (1)	1893.22 (135.94)	121.13 (118.11)	20.8
rc107_21	100	21	1725.66 (194.72)	1540.86 (1)	2025.44 (1)	1714.04 (189.04)	22.6 (31.99)	18.9
rc108_21	100	21	1795.84 (99.65)	1576.66 (1)	1947.92 (1)	1754.04 (100.18)	41.81 (22.71)	19.3
rc201_21	100	21	1620.68 (45.36)	1550.91 (1)	1679.84 (1)	1619.67 (44.79)	127.45 (259.73)	17.5
rc202_21	100	21	1462.91 (67.97)	1363.47 (1)	1546.68 (1)	1461.68 (67.06)	336.66 (322.99)	15.5
rc203_21	100	21	1305.03 (75.17)	1211.77 (1)	1473.68 (1)	1305.0 (75.17)	271.47 (394.4)	14.1
rc204_21	100	21	1373.49 (146.93)	1174.32 (1)	1558.56 (1)	1373.49 (146.93)	14.55 (25.0)	15.9
rc205_21	100	21	1490.25 (75.19)	1438.08 (1)	1695.53 (1)	1489.31 (75.61)	73.98 (129.97)	16.4
rc206_21	100	21	1515.85 (171.31)	1351.39 (1)	1945.58 (1)	1515.85 (171.31)	196.4 (236.88)	16.3
rc207_21	100	21	1383.18 (138.42)	1288.5 (1)	1758.48 (1)	1382.39 (138.16)	126.14 (210.9)	15.2
rc208_21	100	21	1360.65 (210.66)	1211.32 (1)	1855.36 (1)	1347.46 (178.44)	13.19 (40.99)	15

TABLE B.26: Results for TDPR-EVRP-STW obtained by GRASP on the instance set I_2.

Instance	**C**	**A**	**Value**					**Trucks**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Distance** (σ)	**Penalty** (σ)	
c101_21	100	21	1967.57 (101.63)	1789.22 (1)	2090.63 (1)	1839.19 (52.66)	128.38 (97.35)	21.5
c102_21	100	21	1690.59 (51.54)	1590.9 (1)	1765.86 (1)	1678.76 (48.35)	11.83 (19.67)	20.3
c103_21	100	21	1633.22 (28.56)	1581.79 (1)	1676.73 (1)	1630.47 (27.03)	2.75 (3.69)	19.9
c104_21	100	21	1523.92 (34.32)	1462.12 (1)	1569.66 (1)	1523.9 (34.36)	0.02 (0.05)	18.7
c105_21	100	21	1779.02 (38.04)	1715.7 (1)	1827.19 (1)	1746.94 (56.79)	32.08 (33.16)	20.7
c106_21	100	21	1702.55 (32.46)	1639.49 (1)	1737.05 (1)	1680.82 (33.02)	21.74 (36.55)	20.8
c107_21	100	21	1683.96 (20.74)	1639.45 (1)	1709.91 (1)	1668.28 (20.26)	15.68 (13.1)	20.1
c108_21	100	21	1629.69 (23.62)	1598.23 (1)	1664.92 (1)	1616.97 (26.93)	12.72 (20.33)	19.8
c109_21	100	21	1542.92 (39.35)	1488.38 (1)	1613.2 (1)	1539.86 (40.07)	3.06 (4.85)	19
c201_21	100	21	1463.71 (27.21)	1417.42 (1)	1510.22 (1)	1460.71 (24.72)	3.0 (9.49)	16.4
c202_21	100	21	1410.59 (47.54)	1325.32 (1)	1467.42 (1)	1404.39 (43.14)	6.2 (19.6)	16.3
c203_21	100	21	1376.38 (43.41)	1295.53 (1)	1450.27 (1)	1376.38 (43.41)	0.0 (0.0)	15.9
c204_21	100	21	1277.31 (41.21)	1205.74 (1)	1330.49 (1)	1277.31 (41.21)	0.0 (0.0)	15.2
c205_21	100	21	1440.62 (55.11)	1348.51 (1)	1510.42 (1)	1440.62 (55.11)	0.0 (0.0)	16.8
c206_21	100	21	1454.76 (28.07)	1408.58 (1)	1497.93 (1)	1454.64 (28.03)	0.12 (0.37)	17.1
c207_21	100	21	1390.33 (45.97)	1327.93 (1)	1459.63 (1)	1390.33 (45.97)	0.0 (0.0)	16.4
c208_21	100	21	2249.11 (2716.95)	1353.67 (1)	9981.28 (1)	1937.1 (1730.37)	312.01 (986.67)	19.6
r101_21	100	21	2390.91 (117.59)	2170.52 (1)	2523.45 (1)	1915.42 (61.72)	475.49 (132.97)	22
r102_21	100	21	2038.19 (38.99)	1967.51 (1)	2095.43 (1)	1834.13 (44.06)	204.07 (50.54)	21.4
r103_21	100	21	1812.42 (36.34)	1750.75 (1)	1853.46 (1)	1727.97 (43.81)	84.45 (52.22)	21.1
r104_21	100	21	1580.9 (38.04)	1512.7 (1)	1628.23 (1)	1549.19 (42.69)	31.71 (26.64)	18.9
r105_21	100	21	1986.01 (60.95)	1920.05 (1)	2111.39 (1)	1859.65 (44.06)	126.36 (68.45)	21.9
r106_21	100	21	1820.25 (41.54)	1759.79 (1)	1890.27 (1)	1749.51 (40.33)	70.74 (48.07)	21.1
r107_21	100	21	1667.12 (44.98)	1599.68 (1)	1734.39 (4)	1638.56 (42.4)	28.56 (20.77)	20.2
r108_21	100	21	1567.41 (30.63)	1498.67 (1)	1603.84 (1)	1550.59 (31.47)	16.82 (23.44)	19.3
r109_21	100	21	1686.55 (46.8)	1584.68 (1)	1741.89 (1)	1654.74 (34.64)	31.81 (19.36)	19.8
r110_21	100	21	1570.44 (41.36)	1497.69 (1)	1623.56 (1)	1564.18 (42.02)	6.26 (4.78)	19.5
r111_21	100	21	1591.72 (28.38)	1559.36 (1)	1640.22 (1)	1575.84 (36.45)	15.88 (19.17)	19.4
r112_21	100	21	1517.13 (33.5)	1460.39 (1)	1559.71 (1)	1512.12 (30.45)	5.02 (6.39)	19.2
r201_21	100	21	1460.73 (28.5)	1418.97 (1)	1499.03 (1)	1459.35 (27.12)	1.38 (1.96)	16.6
r202_21	100	21	1368.33 (25.68)	1324.28 (1)	1406.26 (1)	1367.54 (25.61)	0.78 (0.72)	16.2
r203_21	100	21	1250.58 (28.69)	1186.96 (1)	1295.99 (1)	1250.48 (28.67)	0.11 (0.34)	15.2
r204_21	100	21	1142.21 (17.21)	1111.12 (1)	1165.44 (1)	1142.15 (17.31)	0.06 (0.19)	14.5
r205_21	100	21	1341.63 (22.8)	1296.66 (1)	1374.89 (1)	1339.44 (22.45)	2.19 (3.35)	16.4
r206_21	100	21	1284.37 (25.14)	1232.57 (1)	1309.86 (1)	1282.72 (25.13)	1.65 (2.88)	15.3
r207_21	100	21	1219.77 (21.39)	1191.33 (1)	1260.36 (1)	1219.08 (22.21)	0.69 (2.2)	14.7
r208_21	100	21	1149.34 (24.77)	1105.9 (1)	1177.8 (1)	1149.19 (24.65)	0.15 (0.49)	14.4
r209_21	100	21	1275.85 (30.04)	1221.66 (1)	1307.58 (1)	1273.07 (31.81)	2.78 (6.65)	15.4
r210_21	100	21	1257.83 (28.58)	1202.03 (1)	1284.63 (1)	1257.83 (28.58)	0.0 (0.0)	15.6
r211_21	100	21	1215.59 (28.71)	1157.47 (1)	1252.87 (1)	1215.37 (29.21)	0.22 (0.69)	15.5
rc101_21	100	21	2398.53 (39.28)	2336.36 (1)	2471.34 (1)	2215.58 (56.14)	182.95 (52.85)	21.2
rc102_21	100	21	2215.32 (65.09)	2097.02 (1)	2300.64 (1)	2135.35 (47.68)	79.97 (34.19)	21.1
rc103_21	100	21	2079.65 (45.05)	2030.0 (1)	2163.89 (1)	2042.05 (40.06)	37.6 (19.63)	20.5
rc104_21	100	21	1984.4 (32.08)	1917.32 (1)	2022.49 (1)	1962.16 (42.82)	22.23 (19.09)	19.7
rc105_21	100	21	2246.12 (61.34)	2174.04 (1)	2406.22 (1)	2117.22 (45.47)	128.9 (28.0)	20.6
rc106_21	100	21	2104.15 (51.43)	1982.43 (1)	2163.47 (1)	2042.17 (36.94)	61.98 (36.04)	20.3
rc107_21	100	21	2022.34 (44.79)	1938.54 (1)	2092.84 (1)	1997.1 (36.89)	25.25 (16.14)	20
rc108_21	100	21	1967.27 (50.8)	1903.35 (6)	2048.25 (1)	1955.59 (52.2)	11.69 (19.54)	19.7
rc201_21	100	21	1741.42 (54.46)	1667.25 (1)	1841.39 (1)	1738.2 (56.78)	3.22 (3.7)	16.6
rc202_21	100	21	1629.89 (51.27)	1522.84 (1)	1707.82 (1)	1627.72 (48.93)	2.18 (4.59)	16.3
rc203_21	100	21	1472.08 (57.41)	1367.1 (1)	1548.64 (1)	1472.07 (57.4)	0.02 (0.03)	15.1
rc204_21	100	21	1394.24 (27.14)	1360.97 (1)	1436.52 (1)	1394.24 (27.14)	0.0 (0.0)	15
rc205_21	100	21	1618.61 (60.86)	1540.74 (8)	1708.46 (1)	1615.19 (63.78)	3.42 (5.98)	16.4
rc206_21	100	21	1578.51 (93.51)	1396.59 (1)	1651.65 (1)	1576.17 (93.27)	2.34 (5.76)	15.9
rc207_21	100	21	1472.28 (48.41)	1389.01 (1)	1539.73 (1)	1471.58 (48.01)	0.7 (0.97)	15.2
rc208_21	100	21	1450.69 (30.53)	1390.55 (1)	1491.01 (1)	1450.47 (30.66)	0.21 (0.43)	15.5

TABLE B.27: Results for TDPR-EVRP-STW obtained by ACO on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	18404.84 (3336.54)	13173.92 (1)	22014.44 (1)	6038.3 (1557.04)	12366.54 (3204.28)	46
c102_21	100	21	13079.81 (1718.0)	10715.45 (1)	15993.94 (1)	4881.81 (1265.3)	8198.0 (2653.8)	42.4
c103_21	100	21	8799.49 (979.37)	7865.59 (1)	10975.0 (1)	4932.88 (1252.15)	3866.61 (1514.4)	42.4
c104_21	100	21	5123.53 (421.64)	4526.39 (1)	6114.81 (1)	3790.86 (220.78)	1332.67 (545.56)	36.1
c105_21	100	21	16226.69 (2149.71)	13060.99 (1)	19738.63 (1)	5947.44 (1356.03)	10279.25 (2728.07)	45.8
c106_21	100	21	14228.96 (1976.61)	11119.9 (1)	16572.09 (4)	4927.44 (1389.84)	9301.52 (2803.69)	42.5
c107_21	100	21	14087.29 (1905.56)	11145.22 (1)	16513.86 (7)	5838.07 (1655.86)	8249.22 (1912.86)	44.9
c108_21	100	21	11612.77 (1441.59)	9216.51 (1)	13199.52 (1)	5285.92 (1380.28)	6326.85 (2252.12)	43.1
c109_21	100	21	8650.05 (1111.66)	6589.71 (1)	9649.26 (1)	4648.35 (965.79)	4001.7 (1863.94)	40.3
c201_21	100	21	23990.48 (3800.81)	15341.26 (1)	28654.0 (1)	7982.78 (1711.98)	16007.7 (3182.51)	48.2
c202_21	100	21	13470.17 (1796.41)	10265.92 (1)	15592.22 (1)	7192.73 (998.58)	6277.44 (1634.06)	47.5
c203_21	100	21	7676.74 (1333.87)	6808.47 (8)	11235.3 (1)	6466.62 (837.64)	1210.12 (2026.88)	45.5
c204_21	100	21	4792.96 (280.31)	4247.28 (1)	5191.49 (1)	4268.53 (130.29)	524.43 (306.12)	29.8
c205_21	100	21	20394.67 (2703.57)	16428.29 (1)	23883.1 (1)	7105.78 (913.81)	13288.88 (2516.56)	47.2
c206_21	100	21	15463.0 (3945.65)	9597.27 (1)	24673.4 (1)	7512.12 (1683.49)	7950.88 (2899.44)	46.8
c207_21	100	21	12643.52 (3316.64)	9232.34 (1)	19860.55 (1)	6871.22 (1240.81)	5772.31 (3918.43)	46.4
c208_21	100	21	11227.08 (1850.23)	8334.64 (1)	14097.39 (1)	7005.55 (796.86)	4221.53 (1957.47)	49.1
r101_21	100	21	7634.29 (389.7)	6898.87 (1)	8127.34 (5)	3711.78 (173.69)	3922.51 (378.31)	42
r102_21	100	21	6120.34 (312.24)	5759.63 (1)	6769.88 (1)	3526.77 (226.61)	2593.57 (378.52)	40.1
r103_21	100	21	5047.06 (280.49)	4690.63 (1)	5457.86 (1)	3418.1 (145.3)	1628.96 (272.48)	39.3
r104_21	100	21	3934.73 (193.87)	3602.79 (1)	4138.09 (1)	3332.54 (113.21)	602.19 (165.26)	37.4
r105_21	100	21	6347.82 (265.47)	5930.11 (1)	6869.23 (1)	3641.82 (191.3)	2706.0 (360.35)	42
r106_21	100	21	5378.69 (317.51)	4775.1 (1)	5700.61 (1)	3356.26 (96.46)	2022.43 (302.62)	38.9
r107_21	100	21	4367.68 (198.75)	4198.16 (1)	4814.77 (1)	3351.95 (107.09)	1015.72 (190.78)	38.6
r108_21	100	21	3777.63 (122.28)	3592.82 (1)	3988.95 (1)	3321.07 (135.66)	456.56 (113.41)	37.3
r109_21	100	21	4785.61 (279.67)	4302.85 (8)	5113.36 (1)	3425.23 (108.69)	1360.39 (269.13)	39.5
r110_21	100	21	3930.24 (69.11)	3790.89 (1)	4011.94 (1)	3306.61 (121.25)	623.64 (130.67)	37
r111_21	100	21	4002.72 (163.6)	3682.35 (1)	4250.43 (1)	3407.71 (141.72)	595.01 (76.58)	38.1
r112_21	100	21	3430.0 (66.03)	3361.38 (1)	3562.79 (1)	3276.82 (96.39)	153.18 (80.25)	36.7
r201_21	100	21	9109.1 (979.72)	8240.92 (1)	11279.81 (1)	6113.57 (556.49)	2995.53 (698.52)	47.1
r202_21	100	21	7293.41 (595.17)	6694.61 (1)	8346.98 (1)	5829.36 (615.56)	1464.05 (357.81)	44.8
r203_21	100	21	5644.23 (643.68)	4807.85 (5)	6387.27 (1)	5452.31 (581.52)	191.92 (133.22)	44.7
r204_21	100	21	4344.18 (240.68)	3992.24 (6)	4693.98 (1)	3894.07 (433.15)	450.11 (380.59)	21.9
r205_21	100	21	7204.62 (568.85)	6383.33 (1)	8116.97 (1)	5861.26 (687.34)	1343.36 (368.93)	45.1
r206_21	100	21	6530.5 (915.07)	5327.32 (1)	7571.33 (1)	5915.39 (886.16)	615.11 (316.75)	45.7
r207_21	100	21	5426.24 (590.53)	4559.05 (1)	6255.79 (1)	4940.55 (1009.34)	485.69 (788.48)	35.2
r208_21	100	21	3906.2 (204.44)	3473.59 (1)	4148.7 (4)	3652.68 (155.97)	253.52 (163.55)	17.6
r209_21	100	21	6196.48 (628.18)	5307.13 (1)	6960.54 (1)	5595.75 (868.43)	600.73 (520.41)	42.6
r210_21	100	21	6044.9 (641.28)	4976.88 (1)	6855.19 (1)	5017.58 (1154.96)	1027.32 (1113.17)	35.8
r211_21	100	21	4728.86 (157.85)	4532.49 (1)	5043.02 (1)	4051.34 (397.63)	677.52 (436.21)	24
rc101_21	100	21	7120.9 (284.22)	6614.63 (1)	7593.57 (1)	4240.38 (244.85)	2880.52 (321.43)	39.4
rc102_21	100	21	6041.88 (186.1)	5751.96 (1)	6347.4 (1)	4111.32 (245.42)	1930.56 (286.47)	38.3
rc103_21	100	21	5449.87 (194.15)	5127.69 (1)	5786.81 (1)	4174.03 (221.84)	1275.84 (185.18)	38.9
rc104_21	100	21	4667.72 (160.32)	4382.59 (1)	4881.86 (1)	4057.58 (137.89)	610.14 (117.49)	37.7
rc105_21	100	21	6004.72 (305.87)	5598.57 (4)	6550.8 (1)	4193.43 (194.63)	1811.29 (279.39)	39.1
rc106_21	100	21	5789.62 (183.26)	5514.58 (1)	6123.65 (1)	4190.45 (210.02)	1599.17 (141.67)	39
rc107_21	100	21	4728.82 (124.56)	4572.19 (1)	5021.43 (1)	4056.18 (181.5)	672.64 (163.66)	37.9
rc108_21	100	21	4442.52 (232.7)	4152.21 (4)	4854.37 (1)	3971.41 (192.84)	471.1 (153.4)	36.7
rc201_21	100	21	11604.5 (1754.36)	9601.55 (1)	13916.99 (1)	8259.13 (1337.15)	3345.37 (647.51)	46.6
rc202_21	100	21	9207.9 (1005.0)	8074.66 (1)	10949.78 (1)	8015.61 (1123.0)	1192.28 (378.29)	45.6
rc203_21	100	21	7290.6 (614.82)	6512.75 (1)	8302.66 (1)	5665.74 (955.68)	1624.86 (1219.24)	32
rc204_21	100	21	4686.12 (164.59)	4438.42 (1)	4955.42 (1)	4460.27 (140.16)	225.85 (125.01)	24.9
rc205_21	100	21	9054.15 (1110.48)	7150.71 (1)	10648.14 (1)	7751.08 (929.88)	1303.07 (385.35)	47
rc206_21	100	21	8771.81 (676.49)	7759.79 (1)	9496.18 (8)	7122.26 (798.3)	1649.55 (251.38)	45.6
rc207_21	100	21	6873.72 (521.22)	6218.13 (5)	7557.42 (1)	5173.58 (670.41)	1700.14 (1144.0)	29.1
rc208_21	100	21	4510.55 (198.04)	4075.89 (1)	4756.38 (1)	4286.35 (203.74)	224.2 (127.73)	23.4

TABLE B.28: Results for TDPR-EVRP-STW obtained by ACOLS on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	5884.31 (844.73)	4925.29 (1)	8055.9 (1)	4927.79 (803.42)	956.51 (1242.15)	41.2
c102_21	100	21	5168.16 (483.35)	4205.66 (1)	5776.92 (1)	4449.14 (883.5)	719.02 (644.82)	38.4
c103_21	100	21	4093.41 (382.55)	3762.39 (4)	5037.86 (1)	3699.09 (483.85)	394.32 (233.16)	33.4
c104_21	100	21	3594.52 (270.51)	3205.54 (1)	3969.8 (1)	3450.35 (199.68)	144.17 (153.66)	32
c105_21	100	21	5195.15 (292.03)	4728.13 (1)	5670.11 (1)	4891.52 (646.79)	303.63 (490.47)	39.5
c106_21	100	21	5027.91 (377.77)	4353.18 (1)	5605.36 (1)	4483.48 (667.92)	544.44 (612.0)	38.2
c107_21	100	21	5131.79 (644.75)	4297.49 (1)	6537.76 (1)	4655.59 (678.58)	476.2 (849.92)	39.9
c108_21	100	21	4985.79 (568.08)	4075.86 (1)	5770.02 (1)	4090.65 (716.46)	895.14 (790.95)	36.2
c109_21	100	21	4279.54 (518.18)	3451.19 (1)	5025.63 (1)	3935.96 (571.77)	343.58 (246.04)	34.8
c201_21	100	21	4874.2 (413.37)	4418.49 (1)	5633.55 (1)	4841.4 (369.62)	32.81 (79.98)	39.8
c202_21	100	21	4602.75 (285.54)	4330.28 (1)	5247.61 (1)	4592.17 (289.26)	10.58 (20.37)	37.7
c203_21	100	21	3770.33 (249.86)	3377.49 (1)	4150.65 (1)	3673.38 (247.39)	96.95 (140.02)	27.6
c204_21	100	21	3502.36 (219.22)	3058.77 (1)	3772.58 (1)	3489.71 (226.48)	12.65 (32.78)	26.4
c205_21	100	21	4723.4 (602.5)	3569.93 (1)	5613.04 (1)	4527.39 (739.3)	196.02 (397.83)	35.6
c206_21	100	21	4944.68 (490.29)	4263.06 (1)	5860.52 (1)	4847.62 (390.0)	97.05 (229.55)	33.6
c207_21	100	21	4288.43 (572.25)	3295.8 (1)	5194.7 (1)	4102.84 (482.62)	185.59 (319.99)	30.4
c208_21	100	21	4446.96 (229.74)	4107.8 (5)	4711.56 (1)	4262.17 (321.93)	184.79 (314.89)	34.3
r101_21	100	21	4399.03 (391.14)	3864.51 (1)	4855.61 (1)	3540.49 (177.82)	858.53 (302.09)	38.1
r102_21	100	21	4056.38 (369.15)	3537.5 (1)	4482.81 (1)	3294.9 (133.01)	761.48 (409.63)	36.1
r103_21	100	21	3540.02 (322.12)	3219.75 (1)	4225.1 (1)	3178.22 (227.69)	361.8 (228.1)	35.6
r104_21	100	21	3103.28 (123.94)	2892.6 (1)	3280.3 (1)	2973.82 (91.48)	129.46 (80.79)	34
r105_21	100	21	3849.73 (241.13)	3549.37 (1)	4207.96 (1)	3437.64 (132.61)	412.09 (136.23)	37.2
r106_21	100	21	3679.5 (349.11)	3401.76 (1)	4597.54 (1)	3294.71 (181.2)	384.79 (311.86)	36.8
r107_21	100	21	3171.71 (260.32)	2742.85 (1)	3585.77 (1)	3001.44 (166.81)	170.27 (125.65)	33.9
r108_21	100	21	3148.2 (154.78)	2863.61 (1)	3456.35 (1)	3075.24 (134.83)	72.95 (64.91)	35.2
r109_21	100	21	3265.71 (107.45)	3020.97 (1)	3362.04 (1)	3142.3 (109.04)	123.41 (59.55)	35.4
r110_21	100	21	3068.24 (251.29)	2664.76 (1)	3411.1 (1)	3016.79 (211.46)	51.46 (62.52)	34.6
r111_21	100	21	3263.61 (238.66)	2864.65 (1)	3620.59 (1)	3166.8 (190.87)	96.81 (67.92)	35.9
r112_21	100	21	2996.42 (233.69)	2635.77 (1)	3355.03 (1)	2960.47 (216.84)	35.95 (74.81)	34.2
r201_21	100	21	3618.1 (203.02)	3223.21 (1)	3862.93 (1)	3509.11 (173.05)	108.99 (129.49)	27.5
r202_21	100	21	3451.05 (186.24)	3191.63 (1)	3766.04 (1)	3326.84 (138.82)	124.21 (100.64)	19.6
r203_21	100	21	3099.28 (265.34)	2832.96 (1)	3699.23 (1)	3004.13 (150.93)	95.15 (213.13)	19.9
r204_21	100	21	2577.75 (131.34)	2340.16 (1)	2792.21 (1)	2570.21 (133.22)	7.54 (10.85)	16.5
r205_21	100	21	3406.71 (232.83)	3061.03 (1)	3831.99 (1)	3206.02 (123.8)	200.69 (245.72)	18.9
r206_21	100	21	3175.31 (181.88)	2859.89 (1)	3504.57 (1)	3114.55 (175.24)	60.76 (97.8)	22.9
r207_21	100	21	2916.46 (189.13)	2520.13 (1)	3168.72 (1)	2896.23 (199.68)	20.23 (49.91)	17.6
r208_21	100	21	2528.71 (97.87)	2378.22 (1)	2665.13 (1)	2527.25 (99.1)	1.46 (3.15)	17
r209_21	100	21	3003.66 (150.34)	2749.89 (1)	3234.69 (1)	2983.57 (140.08)	20.09 (34.28)	19.7
r210_21	100	21	3036.6 (230.43)	2698.06 (1)	3540.66 (1)	2999.41 (238.62)	37.18 (56.31)	19.7
r211_21	100	21	2821.15 (114.12)	2620.05 (1)	2975.05 (1)	2803.33 (120.98)	17.83 (32.01)	17
rc101_21	100	21	5032.09 (314.98)	4475.91 (1)	5590.26 (1)	4311.58 (120.06)	720.51 (243.16)	38.7
rc102_21	100	21	4618.89 (407.52)	3996.43 (1)	5297.7 (1)	4142.47 (403.86)	476.42 (228.84)	38.1
rc103_21	100	21	4240.15 (403.31)	3532.32 (1)	4736.75 (1)	3935.65 (355.3)	304.5 (142.01)	36
rc104_21	100	21	3994.76 (262.17)	3488.48 (1)	4354.81 (1)	3844.92 (287.38)	149.84 (108.61)	35.9
rc105_21	100	21	4561.53 (359.87)	4136.68 (1)	5184.24 (1)	4159.45 (196.98)	402.08 (184.86)	38.2
rc106_21	100	21	4462.33 (328.96)	4012.77 (1)	5120.95 (1)	4142.64 (211.49)	319.69 (150.94)	37.9
rc107_21	100	21	3917.8 (312.51)	3381.71 (1)	4357.71 (1)	3790.76 (277.53)	127.05 (62.65)	35
rc108_21	100	21	3859.3 (241.21)	3454.57 (1)	4303.32 (1)	3768.62 (232.38)	90.68 (53.7)	35.3
rc201_21	100	21	5043.25 (771.55)	4286.36 (1)	6118.36 (1)	4792.52 (594.11)	250.73 (345.69)	29.7
rc202_21	100	21	4429.39 (426.73)	3940.93 (1)	5309.05 (1)	4313.91 (424.98)	115.48 (146.38)	23.8
rc203_21	100	21	3806.97 (231.25)	3377.55 (1)	4123.71 (1)	3740.87 (219.21)	66.1 (166.08)	20.4
rc204_21	100	21	3514.07 (261.29)	2888.22 (1)	3784.36 (4)	3459.33 (251.41)	54.75 (66.99)	21.5
rc205_21	100	21	4332.52 (271.74)	3979.26 (1)	4769.88 (1)	4084.27 (337.9)	248.25 (274.88)	25.1
rc206_21	100	21	4360.65 (275.47)	4023.45 (1)	4917.23 (1)	4136.22 (172.07)	224.43 (204.86)	22.9
rc207_21	100	21	3714.88 (200.54)	3451.09 (1)	4013.76 (1)	3684.59 (216.5)	30.28 (45.88)	20.5
rc208_21	100	21	3502.27 (183.18)	3195.9 (1)	3830.22 (1)	3496.54 (184.87)	5.73 (5.83)	21.6

TABLE B.29: Results for TDPR-EVRP-STW obtained by BCOi on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	7508.52 (402.54)	6999.05 (1)	8276.31 (1)	4891.81 (131.39)	2616.71 (445.23)	49.8
c102_21	100	21	5676.94 (184.58)	5380.91 (1)	5893.93 (6)	4870.3 (178.06)	806.64 (110.45)	49.7
c103_21	100	21	4785.92 (79.02)	4587.04 (1)	4866.48 (1)	4714.29 (67.77)	71.62 (58.9)	49.5
c104_21	100	21	4324.33 (50.12)	4229.82 (1)	4379.72 (1)	4310.23 (51.82)	14.11 (20.68)	48.7
c105_21	100	21	6694.43 (295.89)	6044.53 (1)	7078.4 (1)	4913.13 (102.66)	1781.3 (315.1)	49.9
c106_21	100	21	5996.66 (196.99)	5586.89 (1)	6235.95 (1)	4942.82 (154.94)	1053.84 (301.74)	49.6
c107_21	100	21	6028.31 (259.48)	5685.53 (8)	6320.65 (1)	4898.5 (135.78)	1129.81 (224.49)	49.5
c108_21	100	21	5462.89 (137.47)	5340.94 (1)	5662.59 (1)	4924.66 (143.26)	538.22 (155.0)	49.8
c109_21	100	21	4965.35 (82.33)	4843.95 (1)	5079.5 (5)	4752.28 (63.5)	213.07 (85.24)	49.3
c201_21	100	21	5870.55 (309.17)	5416.48 (1)	6275.16 (1)	4897.45 (163.73)	973.09 (418.53)	49.7
c202_21	100	21	4782.19 (111.07)	4632.37 (1)	4972.42 (1)	4726.72 (120.34)	55.47 (58.41)	49.2
c203_21	100	21	4512.77 (66.26)	4380.2 (1)	4577.35 (1)	4505.51 (64.32)	7.26 (12.26)	48.5
c204_21	100	21	3926.94 (55.86)	3829.35 (1)	4014.23 (1)	3917.86 (59.73)	9.08 (14.62)	47.5
c205_21	100	21	5290.35 (133.46)	5087.5 (1)	5510.85 (1)	4819.41 (183.12)	470.94 (173.0)	49.6
c206_21	100	21	4727.31 (116.13)	4584.9 (1)	4928.9 (1)	4636.55 (99.77)	90.76 (102.73)	49.5
c207_21	100	21	4647.45 (78.58)	4475.56 (1)	4729.52 (7)	4594.56 (109.36)	52.89 (61.69)	48.9
c208_21	100	21	4685.66 (81.49)	4556.15 (1)	4775.9 (7)	4628.65 (87.96)	57.01 (48.05)	48.4
r101_21	100	21	5316.0 (135.29)	5166.47 (4)	5591.86 (1)	3924.59 (116.55)	1391.4 (165.95)	49.8
r102_21	100	21	4691.6 (123.86)	4533.93 (4)	4925.05 (1)	3860.74 (127.41)	830.86 (135.71)	49.3
r103_21	100	21	4172.0 (83.17)	4075.5 (8)	4346.29 (1)	3808.36 (49.18)	363.64 (55.7)	49.6
r104_21	100	21	3814.47 (37.96)	3767.21 (1)	3884.44 (1)	3649.83 (59.68)	164.64 (64.66)	48.9
r105_21	100	21	4743.34 (58.94)	4642.65 (1)	4855.5 (1)	3830.77 (77.76)	912.57 (67.07)	49.4
r106_21	100	21	4360.41 (83.05)	4221.97 (1)	4452.49 (7)	3820.84 (90.38)	539.56 (150.02)	49.6
r107_21	100	21	3939.92 (68.36)	3788.69 (1)	4029.29 (1)	3709.53 (65.36)	230.39 (62.55)	49.4
r108_21	100	21	3842.15 (39.8)	3782.55 (1)	3926.88 (1)	3710.9 (71.55)	131.25 (45.37)	49
r109_21	100	21	4165.72 (50.01)	4065.17 (1)	4227.8 (1)	3791.45 (119.6)	374.27 (117.78)	49.5
r110_21	100	21	3763.82 (48.16)	3708.54 (8)	3857.37 (1)	3612.61 (48.68)	151.21 (49.1)	49
r111_21	100	21	3794.43 (70.96)	3634.73 (1)	3858.72 (1)	3625.06 (46.35)	169.38 (44.21)	48.6
r112_21	100	21	3609.79 (21.43)	3581.48 (1)	3652.89 (1)	3553.56 (40.66)	56.23 (30.86)	48.4
r201_21	100	21	3945.04 (57.59)	3823.72 (1)	4013.19 (1)	3849.29 (33.85)	95.76 (50.32)	49.3
r202_21	100	21	3691.79 (18.28)	3659.03 (1)	3718.54 (1)	3670.55 (27.7)	21.23 (13.26)	48.6
r203_21	100	21	3486.49 (30.43)	3445.72 (1)	3543.38 (1)	3476.87 (39.23)	9.62 (12.46)	47.9
r204_21	100	21	3091.49 (38.97)	3004.94 (1)	3150.49 (1)	3089.43 (39.7)	2.05 (6.01)	44.6
r205_21	100	21	3704.34 (37.73)	3618.72 (1)	3752.57 (1)	3650.94 (30.31)	53.4 (37.13)	48.6
r206_21	100	21	3556.3 (32.87)	3482.27 (1)	3588.39 (5)	3541.38 (45.58)	14.92 (19.78)	47.9
r207_21	100	21	3279.66 (35.74)	3238.0 (1)	3330.7 (1)	3271.49 (38.52)	8.16 (15.86)	46.8
r208_21	100	21	2932.52 (43.77)	2826.31 (1)	2975.22 (1)	2931.64 (43.44)	0.88 (2.78)	39.9
r209_21	100	21	3500.81 (16.42)	3485.85 (4)	3536.4 (1)	3492.28 (24.33)	8.53 (15.99)	48.4
r210_21	100	21	3448.61 (30.11)	3387.25 (1)	3477.35 (1)	3436.89 (22.63)	11.72 (14.24)	47.4
r211_21	100	21	2989.32 (37.22)	2926.12 (1)	3048.29 (1)	2986.24 (36.62)	3.09 (4.52)	42.3
rc101_21	100	21	6183.92 (270.63)	5833.21 (8)	6644.35 (1)	4801.91 (154.69)	1382.01 (166.19)	49.4
rc102_21	100	21	5834.21 (116.21)	5649.77 (1)	5959.72 (4)	4846.0 (130.83)	988.21 (106.37)	49.6
rc103_21	100	21	5610.2 (108.13)	5392.6 (1)	5779.77 (1)	4841.27 (94.96)	768.93 (136.01)	48.8
rc104_21	100	21	5247.86 (123.65)	5060.53 (1)	5422.1 (1)	4787.91 (99.51)	459.95 (70.04)	49.6
rc105_21	100	21	5877.65 (140.95)	5555.96 (1)	6038.16 (1)	4905.47 (161.11)	972.18 (112.38)	49.7
rc106_21	100	21	5785.44 (112.11)	5618.46 (1)	5936.77 (1)	4933.94 (110.48)	851.51 (157.62)	49.5
rc107_21	100	21	5211.24 (113.48)	5074.87 (1)	5448.9 (1)	4773.54 (84.47)	437.7 (126.98)	49.5
rc108_21	100	21	5095.93 (90.55)	4948.68 (1)	5223.23 (1)	4764.61 (108.42)	331.31 (65.43)	49.4
rc201_21	100	21	5233.7 (58.97)	5116.17 (1)	5324.2 (1)	5081.81 (109.64)	151.89 (87.07)	49.5
rc202_21	100	21	4745.96 (39.52)	4684.09 (1)	4802.47 (1)	4714.59 (36.53)	31.38 (28.11)	47.8
rc203_21	100	21	4421.27 (64.18)	4327.15 (1)	4511.32 (1)	4406.9 (67.57)	14.37 (20.96)	46.4
rc204_21	100	21	3915.11 (83.45)	3809.42 (4)	4029.61 (1)	3911.47 (84.34)	3.64 (6.43)	44
rc205_21	100	21	4785.62 (73.69)	4680.39 (8)	4860.41 (1)	4719.85 (68.48)	65.78 (61.01)	48.6
rc206_21	100	21	4754.36 (55.62)	4687.43 (1)	4845.15 (1)	4728.42 (58.72)	25.94 (24.94)	48.7
rc207_21	100	21	4305.31 (47.53)	4220.67 (1)	4364.62 (1)	4276.57 (60.75)	28.74 (37.46)	47.4
rc208_21	100	21	3711.72 (38.84)	3653.49 (1)	3769.93 (1)	3703.99 (40.76)	7.74 (9.86)	42.4

TABLE B.30: Results for TDPR-EVRP-STW obtained by GA on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	2286.64 (130.17)	2134.18 (1)	2472.88 (1)	2276.48 (138.77)	10.16 (13.45)	28.1
c102_21	100	21	2115.56 (80.33)	2017.75 (1)	2238.81 (1)	2108.76 (83.95)	6.8 (14.92)	26.1
c103_21	100	21	1954.08 (118.95)	1774.35 (1)	2162.55 (1)	1943.81 (119.34)	10.27 (17.55)	22.9
c104_21	100	21	1702.52 (78.51)	1547.5 (1)	1797.01 (1)	1702.37 (78.42)	0.14 (0.45)	17.8
c105_21	100	21	2088.6 (187.24)	1835.05 (1)	2432.79 (1)	2076.57 (183.55)	12.03 (18.55)	25.2
c106_21	100	21	2040.51 (116.63)	1888.57 (1)	2211.53 (1)	2029.66 (108.89)	10.85 (14.91)	24.8
c107_21	100	21	1962.65 (89.04)	1858.03 (1)	2112.82 (1)	1942.0 (87.77)	20.65 (12.5)	23.6
c108_21	100	21	1872.58 (98.45)	1714.64 (1)	2039.88 (1)	1865.69 (101.8)	6.89 (5.67)	23.3
c109_21	100	21	1786.83 (125.07)	1525.54 (1)	1918.87 (1)	1786.78 (125.13)	0.05 (0.16)	20.3
c201_21	100	21	1704.62 (86.53)	1591.09 (1)	1836.12 (1)	1701.62 (87.92)	3.0 (9.49)	17.5
c202_21	100	21	1543.81 (72.65)	1451.29 (1)	1686.32 (1)	1543.81 (72.65)	0.0 (0.0)	15.3
c203_21	100	21	1567.53 (83.36)	1414.66 (1)	1688.82 (1)	1567.53 (83.36)	0.0 (0.0)	15.2
c204_21	100	21	1390.15 (67.59)	1275.44 (1)	1500.81 (1)	1388.93 (67.56)	1.22 (2.63)	13.5
c205_21	100	21	1539.26 (87.49)	1384.52 (1)	1677.85 (1)	1535.06 (83.94)	4.21 (8.74)	15.4
c206_21	100	21	1402.26 (44.64)	1348.1 (1)	1475.66 (1)	1402.26 (44.64)	0.0 (0.0)	14.8
c207_21	100	21	1426.71 (97.85)	1225.65 (1)	1509.0 (4)	1426.71 (97.85)	0.0 (0.0)	14.7
c208_21	100	21	1386.74 (86.8)	1237.71 (1)	1518.98 (1)	1386.74 (86.8)	0.0 (0.0)	14.7
r101_21	100	21	2478.94 (46.85)	2394.05 (1)	2540.35 (1)	2325.96 (67.39)	152.98 (44.89)	32.4
r102_21	100	21	2295.95 (84.66)	2150.89 (1)	2457.27 (1)	2190.6 (89.71)	105.35 (35.25)	29.8
r103_21	100	21	2104.93 (50.77)	2017.61 (1)	2178.53 (1)	2024.31 (65.88)	80.62 (26.82)	27.3
r104_21	100	21	1860.78 (66.47)	1758.54 (1)	1956.79 (1)	1835.7 (66.79)	25.08 (10.67)	24
r105_21	100	21	2300.66 (67.6)	2208.59 (1)	2437.29 (1)	2233.04 (48.82)	67.62 (31.93)	30
r106_21	100	21	2125.48 (81.83)	2014.05 (1)	2220.81 (1)	2080.7 (77.86)	44.78 (15.11)	27.7
r107_21	100	21	1960.04 (86.79)	1830.81 (1)	2071.67 (1)	1945.73 (83.22)	14.31 (10.61)	24.8
r108_21	100	21	1803.75 (80.94)	1671.87 (1)	1891.17 (1)	1779.07 (75.74)	24.68 (14.15)	22.3
r109_21	100	21	2017.84 (62.63)	1898.5 (1)	2146.66 (1)	2000.44 (65.8)	17.4 (10.79)	25.7
r110_21	100	21	1887.01 (75.88)	1777.95 (1)	2012.11 (1)	1864.17 (71.95)	22.84 (14.45)	24
r111_21	100	21	1905.17 (95.19)	1790.77 (1)	2038.75 (1)	1889.05 (91.52)	16.12 (13.24)	24.5
r112_21	100	21	1801.97 (81.37)	1669.81 (1)	1923.58 (1)	1790.68 (80.92)	11.29 (10.3)	22.3
r201_21	100	21	1514.42 (41.67)	1478.91 (1)	1623.09 (1)	1510.98 (42.85)	3.44 (4.57)	16.8
r202_21	100	21	1403.09 (54.08)	1291.69 (1)	1462.57 (1)	1402.24 (53.47)	0.84 (0.86)	15.4
r203_21	100	21	1324.14 (28.81)	1288.19 (1)	1374.26 (1)	1323.26 (29.07)	0.88 (1.13)	13.8
r204_21	100	21	1251.32 (39.04)	1158.47 (1)	1298.35 (1)	1249.94 (39.49)	1.38 (4.37)	13.7
r205_21	100	21	1373.46 (48.37)	1259.49 (1)	1434.91 (1)	1371.87 (48.02)	1.6 (2.05)	15.3
r206_21	100	21	1363.17 (24.5)	1310.1 (1)	1391.7 (1)	1362.96 (24.23)	0.22 (0.68)	14.7
r207_21	100	21	1255.59 (37.37)	1200.73 (1)	1325.29 (1)	1255.59 (37.37)	0.0 (0.0)	14.3
r208_21	100	21	1230.26 (33.31)	1172.43 (1)	1283.11 (1)	1230.1 (33.4)	0.15 (0.49)	14.1
r209_21	100	21	1321.15 (27.02)	1289.97 (1)	1378.08 (1)	1319.25 (28.03)	1.9 (2.57)	14.7
r210_21	100	21	1307.52 (43.0)	1201.49 (1)	1367.78 (1)	1304.41 (41.23)	3.1 (5.02)	14.5
r211_21	100	21	1252.71 (43.77)	1185.99 (1)	1296.72 (1)	1252.16 (43.19)	0.54 (1.72)	13.9
rc101_21	100	21	2757.4 (92.94)	2565.77 (1)	2899.91 (1)	2652.23 (105.15)	105.17 (42.25)	28.9
rc102_21	100	21	2573.19 (94.3)	2436.86 (1)	2753.2 (1)	2493.61 (109.16)	79.58 (27.42)	27.2
rc103_21	100	21	2316.86 (137.91)	2089.89 (1)	2533.88 (1)	2270.5 (129.72)	46.35 (30.7)	25.1
rc104_21	100	21	2158.96 (105.65)	1972.97 (1)	2329.22 (1)	2124.61 (104.39)	34.34 (21.88)	22.8
rc105_21	100	21	2530.66 (89.19)	2408.72 (4)	2666.37 (1)	2454.54 (85.97)	76.12 (26.07)	26.7
rc106_21	100	21	2360.43 (101.64)	2215.39 (1)	2513.25 (1)	2319.92 (106.83)	40.51 (18.12)	25.3
rc107_21	100	21	2356.66 (153.66)	2139.36 (1)	2630.26 (1)	2316.69 (146.29)	39.96 (29.26)	24.9
rc108_21	100	21	2185.75 (88.38)	2046.12 (1)	2343.67 (1)	2170.79 (86.5)	14.96 (19.99)	23.7
rc201_21	100	21	1846.1 (80.69)	1715.13 (1)	1954.36 (1)	1841.59 (79.72)	4.51 (4.92)	16.9
rc202_21	100	21	1662.07 (53.29)	1586.65 (1)	1752.59 (1)	1659.87 (54.02)	2.2 (3.41)	16.2
rc203_21	100	21	1581.25 (109.69)	1425.01 (1)	1845.73 (1)	1580.43 (108.12)	0.82 (1.85)	14.9
rc204_21	100	21	1473.11 (81.64)	1385.3 (1)	1654.03 (1)	1473.11 (81.64)	0.0 (0.0)	13.8
rc205_21	100	21	1678.2 (119.54)	1500.15 (1)	1852.29 (8)	1670.98 (118.74)	7.22 (7.43)	15.4
rc206_21	100	21	1640.36 (61.2)	1542.1 (1)	1740.96 (1)	1636.72 (61.07)	3.64 (9.3)	15.8
rc207_21	100	21	1556.92 (65.68)	1469.4 (1)	1641.95 (1)	1552.4 (64.76)	4.52 (6.14)	14.7
rc208_21	100	21	1439.74 (82.43)	1315.94 (1)	1570.41 (1)	1439.38 (82.04)	0.36 (0.74)	13.2

Table B.31: Results for TDPR-EVRP-STW obtained by MA on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	1968.39 (132.22)	1742.12 (1)	2145.41 (1)	1961.6 (129.21)	6.79 (17.63)	29.9
c102_21	100	21	1766.97 (145.9)	1539.53 (1)	1988.98 (1)	1766.97 (145.9)	0.0 (0.0)	27.8
c103_21	100	21	1758.56 (164.74)	1322.84 (1)	1894.33 (1)	1758.28 (164.84)	0.29 (0.91)	27.9
c104_21	100	21	1328.32 (129.6)	1152.25 (1)	1539.52 (1)	1327.23 (129.44)	1.1 (3.47)	18.7
c105_21	100	21	1983.55 (97.57)	1853.82 (1)	2145.03 (1)	1981.0 (97.31)	2.55 (3.88)	31
c106_21	100	21	1886.75 (201.97)	1510.76 (1)	2118.25 (1)	1886.55 (201.86)	0.2 (0.63)	29.6
c107_21	100	21	1743.57 (165.13)	1457.13 (1)	1954.15 (1)	1742.91 (165.8)	0.66 (1.89)	26.9
c108_21	100	21	1671.02 (160.95)	1418.86 (1)	1901.37 (1)	1671.02 (160.95)	0.0 (0.0)	25.2
c109_21	100	21	1805.17 (178.53)	1492.55 (1)	2020.66 (1)	1805.17 (178.53)	0.0 (0.0)	29.2
c201_21	100	21	1746.81 (107.65)	1616.87 (1)	1965.18 (1)	1746.81 (107.65)	0.0 (0.0)	27.9
c202_21	100	21	1671.93 (89.43)	1539.57 (1)	1804.62 (1)	1671.93 (89.43)	0.0 (0.0)	25.7
c203_21	100	21	1521.1 (133.57)	1227.6 (1)	1713.72 (1)	1521.1 (133.57)	0.0 (0.0)	23.5
c204_21	100	21	1188.97 (113.11)	1036.42 (1)	1390.65 (1)	1188.97 (113.11)	0.0 (0.0)	15.8
c205_21	100	21	1676.97 (96.77)	1503.16 (1)	1824.05 (1)	1676.97 (96.77)	0.0 (0.0)	26
c206_21	100	21	1634.4 (167.06)	1299.39 (1)	1818.82 (1)	1634.4 (167.06)	0.0 (0.0)	25
c207_21	100	21	1598.87 (194.98)	1178.13 (1)	1804.94 (1)	1598.87 (194.98)	0.0 (0.0)	23.4
c208_21	100	21	1584.42 (184.19)	1350.37 (1)	1876.39 (1)	1584.42 (184.19)	0.0 (0.0)	24.3
r101_21	100	21	2478.03 (118.07)	2273.22 (1)	2650.06 (1)	2416.27 (124.67)	61.76 (17.68)	39.1
r102_21	100	21	2320.75 (115.62)	2122.8 (1)	2500.15 (1)	2257.03 (101.79)	63.73 (22.78)	35.8
r103_21	100	21	2177.99 (132.93)	1927.45 (1)	2391.17 (1)	2141.71 (134.06)	36.28 (23.32)	33.7
r104_21	100	21	1724.71 (138.54)	1513.04 (1)	1911.9 (1)	1713.52 (135.74)	11.19 (8.63)	27.3
r105_21	100	21	2308.82 (89.51)	2164.97 (1)	2491.04 (1)	2268.26 (89.5)	40.56 (25.08)	36
r106_21	100	21	2175.73 (149.88)	2017.67 (1)	2424.48 (1)	2150.2 (134.58)	25.54 (25.61)	35
r107_21	100	21	1974.88 (119.27)	1807.05 (1)	2151.87 (1)	1963.17 (120.13)	11.71 (10.86)	31.4
r108_21	100	21	1896.34 (88.25)	1783.47 (1)	2029.01 (1)	1891.28 (93.95)	5.06 (10.09)	31.1
r109_21	100	21	2125.52 (131.92)	1857.34 (1)	2276.65 (1)	2113.33 (137.27)	12.19 (12.82)	34.5
r110_21	100	21	1971.54 (90.02)	1836.79 (1)	2122.91 (1)	1969.04 (90.19)	2.5 (4.04)	33.2
r111_21	100	21	1960.6 (158.55)	1641.51 (1)	2131.26 (1)	1955.86 (161.66)	4.74 (8.06)	32.5
r112_21	100	21	1876.42 (58.43)	1779.87 (1)	1977.34 (1)	1871.8 (60.24)	4.62 (6.32)	31.4
r201_21	100	21	1617.57 (104.7)	1495.65 (1)	1825.47 (1)	1615.2 (104.32)	2.36 (2.8)	24.9
r202_21	100	21	1386.42 (67.85)	1259.61 (1)	1469.51 (1)	1385.46 (69.48)	0.96 (2.37)	19
r203_21	100	21	1358.04 (206.17)	1213.65 (1)	1925.94 (1)	1280.73 (68.55)	77.31 (244.35)	19.2
r204_21	100	21	1049.85 (86.71)	937.38 (1)	1203.71 (1)	1049.78 (86.57)	0.07 (0.24)	13.5
r205_21	100	21	1416.86 (86.69)	1271.71 (1)	1550.86 (1)	1416.68 (86.9)	0.18 (0.57)	20.9
r206_21	100	21	1472.6 (64.15)	1346.78 (1)	1569.39 (1)	1471.71 (64.44)	0.89 (2.81)	22.9
r207_21	100	21	1137.23 (88.92)	1031.39 (1)	1289.39 (1)	1137.23 (88.92)	0.0 (0.0)	14.5
r208_21	100	21	1097.95 (115.46)	981.38 (1)	1295.71 (1)	1015.08 (67.7)	82.88 (137.23)	12.4
r209_21	100	21	1370.6 (82.39)	1262.27 (1)	1494.55 (1)	1370.07 (82.92)	0.53 (1.08)	20.7
r210_21	100	21	1276.63 (95.04)	1136.33 (1)	1459.97 (1)	1268.66 (100.53)	7.97 (23.58)	17.5
r211_21	100	21	1188.34 (70.79)	1075.75 (1)	1272.64 (1)	1188.34 (70.79)	0.0 (0.0)	16.3
rc101_21	100	21	2780.47 (113.54)	2585.89 (1)	2914.45 (1)	2729.12 (120.72)	51.35 (16.84)	35.4
rc102_21	100	21	2464.05 (156.81)	2191.81 (1)	2669.87 (1)	2432.22 (158.87)	31.82 (28.7)	32.4
rc103_21	100	21	2430.5 (68.26)	2324.02 (1)	2519.52 (1)	2420.05 (70.89)	10.46 (11.87)	33
rc104_21	100	21	2009.18 (157.68)	1717.08 (1)	2184.36 (1)	1992.61 (165.67)	16.57 (18.47)	27.1
rc105_21	100	21	2594.22 (189.6)	2329.84 (1)	2834.9 (1)	2562.8 (193.48)	31.43 (15.27)	35.2
rc106_21	100	21	2577.03 (187.33)	2251.65 (1)	2792.68 (1)	2557.87 (186.05)	19.16 (15.92)	34.1
rc107_21	100	21	2187.47 (152.55)	1782.06 (1)	2303.77 (1)	2167.99 (159.25)	19.48 (15.74)	31
rc108_21	100	21	2204.76 (136.16)	1996.52 (1)	2435.07 (1)	2190.43 (142.84)	14.33 (19.0)	30.8
rc201_21	100	21	2051.55 (86.08)	1895.65 (1)	2197.4 (1)	2051.42 (86.28)	0.13 (0.31)	27.4
rc202_21	100	21	1718.93 (92.28)	1590.44 (1)	1911.85 (1)	1716.31 (90.52)	2.62 (3.76)	20
rc203_21	100	21	1588.93 (85.79)	1454.33 (1)	1723.92 (1)	1588.89 (85.8)	0.03 (0.04)	21.4
rc204_21	100	21	1234.75 (92.27)	1051.96 (1)	1345.07 (1)	1234.65 (92.16)	0.09 (0.3)	13.7
rc205_21	100	21	1859.9 (77.81)	1739.4 (1)	1989.36 (1)	1859.24 (78.3)	0.65 (0.92)	23.8
rc206_21	100	21	1707.7 (124.5)	1509.29 (1)	1881.95 (1)	1707.55 (124.62)	0.15 (0.48)	22.1
rc207_21	100	21	1586.6 (174.56)	1288.36 (1)	1865.05 (1)	1585.32 (175.05)	1.28 (1.98)	20.9
rc208_21	100	21	1452.4 (154.79)	1210.4 (1)	1691.62 (1)	1451.77 (155.1)	0.63 (1.03)	19.5

TABLE B.32: Results for TDPR-EVRP-STW obtained by MMA on the instance set I_2.

Instance	C	A	Value					Trucks
			Avg (σ)	Min (n_{min})	Max (n_{max})	Distance (σ)	Penalty (σ)	
c101_21	100	21	1425.37 (115.08)	1306.2 (1)	1717.97 (1)	1425.37 (115.08)	0.0 (0.0)	18.7
c102_21	100	21	1301.88 (40.27)	1235.83 (1)	1358.93 (1)	1301.88 (40.27)	0.0 (0.0)	17.1
c103_21	100	21	1273.47 (54.77)	1195.33 (1)	1366.59 (1)	1273.47 (54.77)	0.0 (0.0)	17
c104_21	100	21	1174.17 (39.75)	1124.74 (1)	1257.06 (1)	1172.59 (36.3)	1.57 (4.91)	14.1
c105_21	100	21	1452.56 (161.12)	1282.8 (1)	1749.03 (1)	1447.2 (161.42)	5.36 (1.88)	20
c106_21	100	21	1381.99 (86.38)	1264.46 (1)	1536.65 (1)	1381.99 (86.38)	0.0 (0.0)	18.3
c107_21	100	21	1303.6 (48.47)	1214.93 (1)	1371.66 (1)	1302.73 (47.18)	0.87 (2.74)	16.9
c108_21	100	21	1268.24 (58.76)	1184.37 (1)	1365.47 (1)	1268.24 (58.76)	0.0 (0.0)	16.2
c109_21	100	21	1164.75 (49.48)	1092.83 (1)	1259.91 (1)	1155.9 (39.62)	8.85 (19.99)	14.5
c201_21	100	21	1123.97 (156.34)	991.4 (1)	1538.44 (1)	1090.67 (69.72)	33.3 (105.3)	12.4
c202_21	100	21	1099.12 (148.93)	985.68 (1)	1510.19 (1)	1069.21 (61.69)	29.9 (94.55)	11.9
c203_21	100	21	1055.16 (73.75)	958.2 (1)	1201.0 (1)	1055.16 (73.75)	0.0 (0.0)	11.8
c204_21	100	21	1049.69 (78.04)	956.41 (1)	1196.34 (1)	1035.43 (58.96)	14.26 (45.1)	11.6
c205_21	100	21	1196.42 (377.63)	973.98 (1)	2256.84 (1)	1092.92 (76.38)	103.5 (327.28)	12.4
c206_21	100	21	1155.25 (205.08)	975.08 (1)	1662.01 (1)	1100.25 (86.8)	55.0 (144.8)	12.5
c207_21	100	21	1076.9 (88.63)	978.44 (1)	1245.47 (1)	1076.46 (87.74)	0.44 (1.36)	12
c208_21	100	21	1064.99 (87.78)	967.44 (1)	1271.33 (1)	1064.99 (87.78)	0.0 (0.0)	12.3
r101_21	100	21	1923.23 (63.41)	1819.68 (1)	2005.92 (1)	1865.45 (58.79)	57.78 (11.68)	26.4
r102_21	100	21	1800.77 (68.46)	1708.79 (1)	1906.91 (1)	1762.75 (65.61)	38.02 (13.66)	24.7
r103_21	100	21	1609.85 (58.16)	1516.57 (1)	1723.03 (1)	1573.49 (56.92)	36.36 (21.82)	21.5
r104_21	100	21	1375.44 (48.97)	1304.31 (1)	1467.47 (1)	1315.03 (37.3)	60.42 (64.59)	16.8
r105_21	100	21	1788.34 (98.23)	1631.58 (1)	1962.59 (1)	1764.54 (87.59)	23.8 (12.7)	23.9
r106_21	100	21	1631.86 (50.71)	1534.64 (1)	1690.58 (1)	1612.36 (49.82)	19.5 (14.59)	21.6
r107_21	100	21	1464.48 (56.14)	1369.27 (1)	1582.25 (1)	1438.05 (43.46)	26.43 (31.32)	18.8
r108_21	100	21	1333.39 (44.03)	1267.08 (1)	1398.88 (1)	1322.44 (39.73)	10.95 (10.98)	16.5
r109_21	100	21	1524.24 (45.68)	1451.94 (1)	1594.35 (1)	1511.29 (48.2)	12.95 (10.41)	19.9
r110_21	100	21	1395.67 (35.51)	1331.94 (1)	1456.05 (1)	1374.02 (30.53)	21.66 (38.14)	17.8
r111_21	100	21	1358.38 (29.49)	1294.49 (1)	1396.46 (1)	1349.26 (26.94)	9.12 (7.73)	16.9
r112_21	100	21	1337.33 (97.85)	1247.33 (1)	1582.44 (1)	1283.12 (50.16)	54.21 (91.41)	16.1
r201_21	100	21	1476.82 (258.2)	1294.06 (1)	2078.94 (1)	1308.75 (36.49)	168.07 (230.89)	15.5
r202_21	100	21	1644.51 (297.35)	1252.01 (1)	2325.61 (1)	1216.09 (24.81)	428.42 (297.25)	14.2
r203_21	100	21	1179.42 (122.65)	1029.84 (1)	1385.59 (1)	1092.0 (34.15)	87.42 (125.48)	12.8
r204_21	100	21	1168.16 (299.09)	924.01 (1)	1687.56 (1)	955.86 (19.46)	212.29 (298.23)	10.5
r205_21	100	21	1321.24 (144.98)	1143.83 (1)	1572.24 (1)	1183.47 (34.46)	137.77 (127.01)	13.6
r206_21	100	21	1283.62 (199.65)	1083.11 (1)	1610.05 (1)	1111.47 (37.5)	172.15 (216.63)	12.6
r207_21	100	21	1099.87 (208.72)	983.54 (1)	1652.09 (1)	1008.22 (19.4)	91.65 (214.34)	11.2
r208_21	100	21	1003.38 (129.18)	892.74 (1)	1293.49 (1)	947.44 (23.0)	55.94 (120.82)	10.7
r209_21	100	21	1248.08 (230.35)	1035.36 (1)	1692.25 (1)	1086.11 (41.52)	161.97 (218.73)	12.6
r210_21	100	21	1292.63 (194.36)	1043.81 (1)	1684.0 (1)	1037.1 (25.6)	255.54 (188.71)	11.8
r211_21	100	21	1026.7 (112.19)	949.19 (1)	1280.37 (1)	977.04 (25.34)	49.67 (106.11)	10.8
rc101_21	100	21	2192.01 (76.85)	2101.23 (1)	2330.87 (1)	2086.99 (48.13)	105.02 (55.2)	23.1
rc102_21	100	21	2059.87 (237.95)	1818.51 (1)	2493.3 (1)	1890.55 (53.08)	169.32 (222.9)	20.9
rc103_21	100	21	1761.22 (69.93)	1614.8 (1)	1862.38 (1)	1731.37 (64.41)	29.86 (21.47)	19.4
rc104_21	100	21	1609.19 (110.91)	1492.22 (1)	1883.26 (1)	1547.47 (44.24)	61.72 (95.14)	16.5
rc105_21	100	21	1909.58 (108.68)	1741.3 (1)	2108.88 (1)	1850.06 (73.3)	59.51 (56.77)	20.4
rc106_21	100	21	1789.5 (84.38)	1691.27 (1)	1992.7 (1)	1755.05 (45.09)	34.45 (59.12)	19.2
rc107_21	100	21	1617.22 (65.87)	1497.32 (1)	1734.75 (1)	1592.08 (77.48)	25.14 (36.33)	16.9
rc108_21	100	21	1634.98 (206.64)	1471.9 (1)	2189.03 (1)	1494.42 (80.58)	140.56 (143.37)	16
rc201_21	100	21	1879.23 (361.91)	1536.1 (1)	2749.02 (1)	1624.16 (92.11)	255.07 (323.91)	16.6
rc202_21	100	21	1666.89 (194.17)	1373.99 (1)	2075.07 (1)	1445.12 (66.95)	221.76 (217.16)	14.7
rc203_21	100	21	1462.24 (259.37)	1234.8 (1)	1860.31 (1)	1240.82 (43.16)	221.42 (270.92)	12.3
rc204_21	100	21	1362.74 (276.16)	1133.32 (1)	1953.98 (1)	1131.77 (64.53)	230.97 (267.67)	11.1
rc205_21	100	21	1618.51 (135.18)	1488.22 (1)	1880.82 (1)	1413.56 (79.77)	204.95 (167.62)	13.8
rc206_21	100	21	1557.2 (236.45)	1269.13 (1)	2027.17 (1)	1373.7 (70.63)	183.5 (223.09)	13.6
rc207_21	100	21	1391.57 (191.35)	1229.46 (1)	1881.69 (1)	1252.47 (71.3)	139.1 (198.63)	12.7
rc208_21	100	21	1169.12 (137.98)	1038.32 (1)	1440.68 (1)	1109.3 (51.72)	59.82 (105.46)	11.1

B.3 Results for MOHF-VRP-STW

In this section, we will display the results for MOHF-VRP-STW, derived from various methodologies applied to datasets $\mathcal{I}_1$ and $\mathcal{I}_2$. The tables are organized as follows:

Instance Information: The first three columns mirror the format used in Section B.1, beginning with the instance name, followed by the number of customers, and the number of available AFSs in each instance.

- **Solution Quality**: The next three columns continue as per the previous format, detailing the average, best-found, and worst-found solutions in relation to objective $\mathcal{O}_1$.
- **Distance Traveled**: Column seven documents the average distance traveled by EVs, including the standard deviation in parentheses. Column eight notes the average distance traveled by ICVs, corresponding to our objective $\mathcal{O}_2$.
- **Penalty and Vehicle Utilization**: Column nine illustrates the average penalty incurred from missing time windows. Column ten indicates the average number of vehicles used in the solutions.
- **Pareto-Front Solutions**: Finally, column eleven presents the average number of solutions found in the pareto-front.

B.3.1 Results on the instance set $\mathcal{I}_1$

TABLE B.33: Results for MOHF-VRP-STW obtained by GVNS on the instance set $\mathcal{I}_1$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101C10	10	5	345.01 (16.5)	316.53 (1)	369.37 (1)	342.54 (17.31)	2.47 (7.15)	123.68 (55.27)	2.4	11.1
c101C5	5	3	231.24 (3.68)	229.6 (13)	241.6 (1)	231.24 (3.68)	0.0 (0.0)	121.72 (5.47)	2.9	8.7
c103C15	15	5	350.06 (15.22)	331.59 (10)	370.77 (1)	343.62 (13.35)	6.43 (9.86)	196.5 (46.6)	2.7	9.8
c103C5	5	2	215.5 (81.13)	154.13 (1)	334.17 (1)	166.87 (9.51)	48.62 (74.18)	21.35 (20.97)	1.7	12.1
c104C10	10	4	268.38 (3.39)	261.31 (1)	272.43 (6)	268.38 (3.39)	0.0 (0.0)	76.06 (19.84)	2	4.2
c106C15	15	3	269.21 (2.26)	265.68 (1)	272.62 (8)	269.21 (2.26)	0.0 (0.0)	124.74 (45.32)	2.5	10.7
c202C10	10	5	235.87 (0.92)	234.46 (1)	236.72 (13)	235.87 (0.92)	0.0 (0.0)	100.74 (20.78)	2	9.3
c202C15	15	5	364.93 (5.67)	358.37 (1)	374.91 (1)	364.37 (4.79)	0.56 (1.76)	179.16 (29.79)	2.2	8.4
c205C10	10	3	231.48 (14.92)	221.62 (10)	264.97 (1)	231.48 (14.92)	0.0 (0.0)	96.61 (16.62)	2	8.4
c206C5	5	4	218.46 (1.28)	216.97 (11)	219.46 (16)	218.46 (1.28)	0.0 (0.0)	81.36 (0.0)	2	5.7
c208C15	15	4	291.98 (0.28)	291.77 (18)	292.31 (12)	291.98 (0.28)	0.0 (0.0)	105.92 (0.0)	3	5.5
c208C5	5	3	172.86 (14.53)	156.89 (1)	187.9 (8)	172.86 (14.53)	0.0 (0.0)	9.12 (19.23)	1.2	5.3
r102C10	10	4	260.38 (23.68)	239.22 (1)	304.87 (1)	238.25 (17.76)	22.13 (17.47)	98.44 (24.02)	2.4	12.3
r102C15	15	8	409.72 (30.12)	372.47 (1)	442.7 (12)	352.98 (13.21)	56.74 (20.7)	258.66 (37.53)	4.6	18.7
r103C10	10	3	184.01 (20.8)	144.42 (1)	206.89 (1)	158.31 (11.2)	25.7 (15.14)	61.28 (10.23)	2.2	9.4
r104C5	5	3	137.47 (0.0)	137.47 (30)	137.47 (30)	137.47 (0.0)	0.0 (0.0)	59.84 (0.0)	2	9
r105C15	15	6	370.51 (78.19)	306.22 (5)	535.26 (1)	315.7 (11.32)	54.81 (82.38)	208.56 (13.77)	3.5	8.9
r105C5	5	3	154.33 (0.0)	154.33 (30)	154.33 (30)	154.33 (0.0)	0.0 (0.0)	87.04 (0.0)	2	10.9
r201C10	10	4	208.95 (9.07)	197.38 (8)	219.15 (1)	206.18 (6.83)	2.77 (4.12)	79.82 (37.04)	2.5	7.9
r202C15	15	6	350.84 (8.5)	340.57 (1)	364.23 (4)	342.67 (10.09)	8.17 (7.29)	200.73 (35.37)	2.7	8.7
r202C5	5	3	138.13 (0.16)	138.03 (22)	138.37 (7)	138.13 (0.16)	0.0 (0.0)	69.83 (0.0)	2	16.3
r203C10	10	5	238.25 (6.5)	231.7 (1)	255.16 (1)	238.25 (6.5)	0.0 (0.0)	71.22 (21.51)	2.1	8.4
r203C5	5	4	191.26 (1.6)	188.5 (6)	192.22 (21)	191.26 (1.6)	0.0 (0.0)	98.81 (0.0)	2	11.5
r209C15	15	5	282.39 (16.48)	270.05 (11)	313.26 (1)	277.13 (14.18)	5.26 (9.67)	106.98 (17.64)	2.1	3.4
rc102C10	10	4	482.08 (71.18)	384.31 (1)	640.17 (1)	372.66 (25.93)	109.42 (77.63)	202.89 (34.07)	3.3	14.6
rc103C15	15	5	394.35 (1.78)	390.5 (1)	395.4 (22)	373.79 (1.16)	20.56 (1.48)	261.58 (4.34)	4	14.4
rc105C5	5	4	226.14 (0.0)	226.14 (30)	226.14 (30)	212.71 (0.0)	13.43 (0.0)	112.72 (0.0)	2	12.7
rc108C10	10	4	476.87 (184.51)	174.11 (1)	888.14 (1)	339.44 (61.5)	137.43 (159.35)	155.4 (62.68)	2.4	14.5
rc108C15	10	5	369.06 (12.06)	348.0 (1)	385.97 (1)	347.94 (33.26)	21.12 (25.21)	223.07 (56.18)	3.1	8.4
rc108C5	5	4	248.47 (0.0)	248.47 (30)	248.47 (30)	248.47 (0.0)	0.0 (0.0)	143.64 (0.0)	2	7.8
rc201C10	10	4	293.03 (7.06)	289.3 (21)	307.63 (1)	293.03 (7.06)	0.0 (0.0)	99.03 (41.91)	2.2	9.5
rc202C15	15	5	374.89 (14.49)	365.27 (15)	403.3 (1)	371.68 (12.23)	3.21 (3.72)	195.01 (25.84)	2.6	8.1
rc204C15	15	7	305.72 (9.06)	302.36 (17)	331.38 (1)	305.72 (9.06)	0.0 (0.0)	137.1 (7.8)	2	6.9
rc204C5	5	4	166.15 (4.17)	161.39 (1)	176.25 (1)	166.15 (4.17)	0.0 (0.0)	26.53 (32.59)	1.6	10.8
rc205C10	10	4	349.58 (14.74)	323.56 (7)	364.17 (1)	342.41 (12.01)	7.17 (8.63)	117.8 (50.75)	2.2	8.6
rc208C5	5	3	164.41 (1.19)	161.65 (1)	165.2 (19)	164.41 (1.19)	0.0 (0.0)	91.3 (62.2)	1.9	4.9

Table B.34: Results for MOHF-VRP-STW obtained by GRASP on the instance set $\mathcal{I}_1$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101C10	10	5	446.83 (73.02)	334.66 (1)	514.25 (13)	330.79 (2.76)	116.04 (75.77)	90.11 (0.0)	2	8.4
c101C5	5	3	822.84 (185.24)	295.64 (1)	881.89 (24)	238.03 (1.36)	584.81 (185.39)	40.63 (0.0)	2	6
c103C15	15	5	506.01 (220.44)	355.02 (7)	823.99 (11)	357.94 (5.67)	148.07 (217.0)	164.02 (8.19)	2.9	14.5
c103C5	5	2	176.1 (0.0)	176.1 (30)	176.1 (30)	176.1 (0.0)	0.0 (0.0)	20.0 (0.0)	2	3.9
c104C10	10	4	286.35 (13.29)	271.26 (10)	306.0 (1)	286.35 (13.29)	0.0 (0.01)	86.05 (18.68)	2.3	4
c106C15	15	3	297.8 (0.0)	297.8 (30)	297.8 (30)	283.33 (0.0)	14.47 (0.0)	79.01 (0.0)	2	10.1
c202C10	10	5	449.79 (357.36)	269.52 (13)	1126.91 (5)	284.19 (20.15)	165.6 (349.12)	39.1 (7.49)	2	6.6
c202C15	15	5	376.8 (8.45)	361.94 (1)	390.87 (4)	372.9 (9.75)	3.9 (2.69)	149.25 (8.44)	2.2	8.1
c205C10	10	3	276.99 (9.24)	267.67 (7)	287.63 (6)	276.99 (9.24)	0.0 (0.0)	48.13 (3.99)	2	7.3
c206C5	5	4	298.6 (0.0)	298.6 (30)	298.6 (30)	259.5 (0.0)	39.1 (0.0)	34.13 (0.0)	2	4.1
c208C15	15	4	291.93 (0.26)	291.77 (22)	292.31 (8)	291.93 (0.26)	0.0 (0.0)	105.92 (0.0)	3	4.3
c208C5	5	3	187.9 (0.0)	187.9 (30)	187.9 (30)	187.9 (0.0)	0.0 (0.0)	45.61 (0.0)	2	3
r102C10	10	4	335.47 (26.27)	283.13 (1)	393.23 (1)	230.48 (4.08)	104.98 (26.23)	87.46 (12.5)	2.1	7.5
r102C15	15	8	548.51 (66.6)	463.06 (1)	610.72 (1)	331.49 (14.69)	217.02 (60.46)	180.45 (16.84)	3.8	18.6
r103C10	10	3	284.66 (92.22)	172.27 (1)	431.49 (1)	156.72 (6.1)	127.94 (91.28)	38.83 (21.03)	2.1	7.1
r104C5	5	3	172.8 (0.0)	172.8 (30)	172.8 (30)	144.9 (0.0)	27.9 (0.0)	36.77 (0.0)	2	6.2
r105C15	15	6	753.58 (58.88)	586.01 (1)	772.2 (28)	282.76 (8.71)	470.82 (67.59)	192.1 (0.49)	3	21.4
r105C5	5	3	317.28 (0.0)	317.28 (30)	317.28 (30)	177.96 (0.0)	139.32 (0.0)	12.64 (0.0)	2	8.3
r201C10	10	4	225.6 (4.26)	217.17 (1)	232.73 (1)	208.93 (1.99)	16.68 (4.87)	40.36 (0.0)	2	7.4
r202C15	15	6	359.35 (23.33)	338.64 (1)	418.39 (1)	339.75 (14.81)	19.6 (12.35)	162.51 (5.13)	2.1	8.4
r202C5	5	3	152.07 (0.0)	152.07 (30)	152.07 (30)	152.07 (0.0)	0.0 (0.0)	29.07 (0.0)	2	2.8
r203C10	10	5	258.83 (5.83)	242.49 (1)	263.26 (1)	258.83 (5.83)	0.0 (0.0)	51.86 (4.92)	2	4.7
r203C5	5	4	194.6 (0.0)	194.6 (30)	194.6 (30)	194.6 (0.0)	0.0 (0.0)	30.53 (0.0)	2	4
r209C15	15	5	274.92 (15.28)	270.05 (22)	318.4 (1)	270.22 (0.42)	4.7 (14.88)	99.68 (0.0)	2	2.3
rc102C10	10	4	464.4 (88.64)	416.6 (8)	712.62 (1)	378.52 (10.4)	85.88 (93.12)	206.4 (11.5)	3.2	10.6
rc103C15	15	5	774.53 (246.18)	548.68 (1)	1240.68 (1)	373.85 (8.25)	400.68 (244.07)	218.94 (24.94)	3.4	14
rc105C5	5	4	524.55 (129.04)	323.48 (1)	748.9 (7)	224.02 (16.9)	300.54 (132.71)	45.24 (53.62)	2.2	8.6
rc108C10	10	4	694.77 (130.9)	554.95 (6)	840.98 (8)	335.83 (6.67)	358.94 (134.2)	176.47 (25.1)	2.5	14.2
rc108C15	10	5	463.44 (60.04)	411.52 (1)	622.83 (1)	364.46 (24.04)	98.98 (74.65)	212.42 (21.77)	3.6	8.1
rc108C5	5	4	438.89 (13.73)	424.71 (6)	474.75 (1)	248.46 (4.58)	190.43 (16.16)	91.35 (20.8)	2	6.5
rc201C10	10	4	557.61 (126.3)	318.41 (1)	630.69 (21)	327.49 (15.24)	230.12 (113.2)	75.55 (4.28)	2.7	11.5
rc202C15	15	5	385.84 (14.41)	367.4 (1)	418.09 (1)	380.4 (11.42)	5.44 (4.61)	165.51 (10.52)	3	6.1
rc204C15	15	7	325.94 (32.99)	302.36 (13)	399.49 (1)	325.94 (32.99)	0.0 (0.0)	145.14 (24.72)	2.4	4
rc204C5	5	4	174.53 (0.0)	174.53 (30)	174.53 (30)	174.53 (0.0)	0.0 (0.0)	24.08 (0.0)	2	3.5
rc205C10	10	4	355.02 (0.96)	353.32 (6)	356.38 (1)	353.32 (0.0)	1.7 (0.96)	74.63 (0.0)	2	6.1
rc208C5	5	3	164.25 (1.64)	163.74 (29)	168.91 (1)	164.25 (1.64)	0.0 (0.0)	26.08 (0.0)	2	2.7

TABLE B.35: Results for MOHF-VRP-STW obtained by ACO on the instance set $\mathcal{I}_1$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101C10	10	5	397.78 (14.75)	383.14 (10)	425.25 (1)	389.86 (14.63)	7.92 (20.46)	273.82 (17.67)	3.8	24.5
c101C5	5	3	247.46 (10.31)	230.69 (4)	258.83 (1)	241.92 (16.53)	5.54 (17.51)	138.52 (10.82)	3.2	7
c103C15	15	5	472.34 (19.42)	448.72 (1)	503.66 (1)	468.0 (23.39)	4.34 (9.19)	327.84 (43.36)	4.8	13.2
c103C5	5	2	177.41 (26.66)	161.9 (1)	252.39 (1)	168.59 (4.36)	8.83 (27.91)	74.9 (11.97)	2.1	5
c104C10	10	4	370.13 (26.82)	340.5 (6)	417.43 (1)	364.72 (30.22)	5.41 (5.69)	130.78 (44.01)	3	13.2
c106C15	15	3	371.98 (17.66)	352.94 (1)	402.41 (1)	371.89 (17.49)	0.09 (0.28)	262.62 (22.18)	4.5	19.4
c202C10	10	5	307.54 (32.32)	270.51 (1)	358.77 (1)	303.28 (28.24)	4.26 (13.47)	122.19 (11.26)	3	14.5
c202C15	15	5	509.53 (36.63)	452.93 (1)	552.58 (1)	509.53 (36.63)	0.0 (0.0)	326.28 (35.32)	4.7	11.9
c205C10	10	3	337.69 (10.25)	326.65 (5)	361.11 (1)	337.69 (10.25)	0.0 (0.0)	135.47 (54.88)	3.3	10.5
c206C5	5	4	249.99 (20.54)	228.71 (13)	274.99 (4)	249.99 (20.54)	0.0 (0.0)	89.72 (20.56)	2.2	4.4
c208C15	15	4	454.35 (19.14)	425.46 (1)	491.53 (1)	447.27 (16.8)	7.08 (22.38)	251.82 (51.07)	3.6	10.4
c208C5	5	3	227.74 (95.1)	197.67 (1)	498.39 (1)	200.26 (8.19)	27.48 (86.91)	74.76 (26.46)	1.9	2
r102C10	10	4	259.58 (4.43)	253.14 (7)	268.31 (1)	256.83 (8.15)	2.75 (4.59)	163.26 (8.15)	3.6	19.4
r102C15	15	8	493.53 (21.85)	467.34 (1)	538.76 (1)	414.97 (23.46)	78.55 (20.04)	316.14 (19.87)	5	21.9
r103C10	10	3	212.36 (9.61)	185.46 (1)	216.98 (5)	212.16 (10.24)	0.2 (0.64)	91.08 (20.22)	3.2	16.4
r104C5	5	3	137.47 (0.0)	137.47 (30)	137.47 (30)	137.47 (0.0)	0.0 (0.0)	59.84 (0.0)	2	2
r105C15	15	6	545.28 (34.63)	487.16 (1)	601.9 (1)	427.68 (30.26)	117.6 (45.76)	310.36 (22.57)	5	22.1
r105C5	5	3	199.5 (7.08)	179.36 (1)	201.83 (25)	187.93 (11.11)	11.57 (11.18)	72.59 (23.31)	3.1	5.1
r201C10	10	4	283.71 (18.72)	256.12 (1)	308.99 (8)	278.26 (15.54)	5.46 (7.86)	124.33 (37.15)	3.3	15.5
r202C15	15	6	498.25 (26.98)	447.09 (1)	519.68 (1)	487.69 (26.04)	10.56 (15.58)	309.87 (32.45)	4.4	9.9
r202C5	5	3	141.0 (5.62)	138.37 (25)	153.48 (1)	141.0 (5.62)	0.0 (0.0)	69.86 (0.11)	2	2
r203C10	10	5	306.94 (27.47)	256.9 (1)	347.14 (1)	306.94 (27.47)	0.0 (0.0)	124.45 (38.23)	2.9	9.2
r203C5	5	4	245.65 (10.42)	238.55 (8)	265.16 (4)	225.7 (23.23)	19.94 (15.3)	97.92 (11.37)	2.3	6.4
r209C15	15	5	425.94 (23.04)	397.83 (1)	468.39 (1)	425.94 (23.04)	0.0 (0.0)	273.95 (29.84)	4.5	10.2
rc102C10	10	4	557.43 (26.7)	516.08 (8)	587.44 (1)	457.07 (27.08)	100.36 (28.33)	320.04 (40.48)	4.8	12.3
rc103C15	15	5	511.77 (32.65)	470.86 (1)	576.55 (1)	483.46 (25.42)	28.32 (25.61)	364.98 (31.54)	5	15.1
rc105C5	5	4	372.08 (323.45)	232.74 (4)	1288.84 (1)	230.89 (14.99)	141.2 (322.84)	97.9 (38.65)	2.5	7.4
rc108C10	10	4	383.22 (17.78)	346.3 (1)	406.02 (1)	370.09 (17.76)	13.13 (18.46)	257.21 (30.2)	3.6	25.5
rc108C15	10	5	469.09 (16.55)	439.42 (1)	487.48 (1)	467.45 (17.48)	1.64 (5.18)	369.01 (20.05)	4.8	11.3
rc108C5	5	4	248.47 (0.0)	248.47 (30)	248.47 (30)	248.47 (0.0)	0.0 (0.0)	143.64 (0.0)	2	2
rc201C10	10	4	383.55 (10.46)	367.66 (1)	394.02 (5)	349.01 (15.05)	34.54 (18.2)	156.5 (53.49)	3.4	15.7
rc202C15	15	5	563.54 (28.23)	524.61 (7)	608.73 (1)	539.66 (41.55)	23.88 (32.88)	319.1 (37.28)	4.4	12.5
rc204C15	15	7	473.71 (16.99)	447.98 (1)	493.96 (1)	472.82 (17.15)	0.89 (2.81)	273.72 (26.58)	3.4	8.3
rc204C5	5	4	232.22 (125.75)	176.25 (1)	588.67 (1)	204.36 (38.78)	27.87 (88.12)	70.15 (27.74)	1.9	4.7
rc205C10	10	4	449.58 (42.44)	403.18 (4)	517.28 (5)	423.65 (26.13)	25.93 (25.81)	182.52 (75.89)	3.7	9.1
rc208C5	5	3	200.8 (16.35)	174.49 (1)	224.99 (1)	182.02 (11.51)	18.78 (14.68)	22.9 (35.24)	1.4	2

Table B.36: Results for MOHF-VRP-STW obtained by ACOLS on the instance set $\mathcal{I}_1$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101C10	10	5	340.21 (8.06)	330.39 (1)	358.38 (1)	336.63 (7.31)	3.58 (3.99)	95.05 (15.63)	2.1	4.7
c101C5	5	3	233.85 (9.23)	229.6 (1)	259.92 (1)	228.31 (8.44)	5.54 (17.51)	116.9 (21.32)	2.8	7
c103C15	15	5	359.89 (22.67)	328.76 (1)	410.18 (1)	351.91 (22.16)	7.98 (11.93)	194.38 (37.25)	2.9	14.5
c103C5	5	2	162.58 (8.15)	154.13 (13)	172.97 (5)	162.47 (8.0)	0.12 (0.37)	57.25 (21.19)	2	6.1
c104C10	10	4	267.67 (5.56)	261.31 (12)	272.43 (15)	267.67 (5.56)	0.0 (0.0)	56.4 (14.37)	2	3.8
c106C15	15	3	271.09 (4.42)	267.94 (6)	280.87 (1)	271.09 (4.42)	0.0 (0.0)	98.23 (13.33)	2.3	8.2
c202C10	10	5	251.18 (12.22)	237.11 (5)	271.67 (1)	251.18 (12.22)	0.0 (0.0)	106.84 (35.18)	2	7.7
c202C15	15	5	364.05 (9.42)	354.96 (1)	379.54 (1)	361.93 (7.32)	2.11 (5.04)	193.15 (31.98)	2.6	11.1
c205C10	10	3	236.27 (14.58)	223.75 (11)	258.53 (1)	236.27 (14.58)	0.0 (0.0)	105.33 (21.64)	2.1	6
c206C5	5	4	224.95 (10.24)	216.97 (7)	247.47 (1)	224.95 (10.24)	0.0 (0.0)	83.08 (32.57)	2	4
c208C15	15	4	291.65 (0.24)	291.56 (23)	292.31 (1)	291.65 (0.24)	0.0 (0.0)	105.92 (0.0)	3	4.4
c208C5	5	3	185.71 (9.85)	157.72 (1)	189.87 (1)	185.71 (9.85)	0.0 (0.0)	82.24 (30.52)	1.9	13.1
r102C10	10	4	264.27 (7.38)	248.99 (1)	273.12 (1)	245.64 (4.46)	18.63 (8.21)	145.19 (11.17)	3.1	11.8
r102C15	15	8	435.27 (28.33)	393.38 (1)	468.1 (1)	352.0 (18.59)	83.28 (42.62)	227.62 (42.36)	4.3	11.8
r103C10	10	3	148.56 (8.4)	144.42 (1)	172.05 (1)	143.51 (0.53)	5.04 (8.0)	61.9 (7.58)	2	8.9
r104C5	5	3	117.59 (58.0)	36.77 (11)	179.03 (1)	117.19 (57.53)	0.4 (0.92)	50.48 (15.83)	1.5	4.5
r105C15	15	6	327.31 (12.29)	310.02 (1)	338.98 (8)	318.72 (9.27)	8.58 (5.99)	198.81 (20.89)	3.4	21.1
r105C5	5	3	178.01 (10.66)	171.39 (23)	193.46 (7)	154.76 (7.08)	23.25 (3.58)	38.11 (17.57)	2	4.4
r201C10	10	4	214.39 (16.96)	191.64 (1)	240.02 (4)	208.3 (10.59)	6.09 (8.42)	86.46 (27.7)	2.5	7.2
r202C15	15	6	356.28 (15.38)	339.55 (1)	380.52 (6)	340.45 (11.29)	15.83 (18.15)	190.84 (28.28)	2.6	16
r202C5	5	3	143.59 (5.43)	138.37 (6)	152.07 (6)	143.59 (5.43)	0.0 (0.0)	49.54 (17.98)	2	4.2
r203C10	10	5	243.56 (6.61)	236.11 (1)	256.89 (1)	243.56 (6.61)	0.0 (0.0)	72.1 (16.95)	2	6.1
r203C5	5	4	202.32 (4.26)	192.22 (1)	204.28 (26)	202.32 (4.26)	0.0 (0.0)	43.48 (27.36)	2	7.2
r209C15	15	5	270.39 (0.97)	269.64 (1)	273.09 (1)	269.68 (1.31)	0.7 (1.41)	99.39 (0.9)	2	2.9
rc102C10	10	4	420.41 (25.03)	384.31 (1)	474.9 (1)	385.15 (12.69)	35.27 (26.87)	233.85 (40.26)	3.4	12.1
rc103C15	15	5	455.88 (50.19)	409.78 (1)	526.6 (8)	387.11 (16.09)	68.77 (46.82)	286.76 (35.88)	4	9
rc105C5	5	4	476.82 (531.36)	226.14 (18)	1667.05 (1)	222.75 (20.17)	254.06 (512.63)	83.44 (46.08)	1.8	9.4
rc108C10	10	4	413.16 (107.47)	190.65 (1)	572.76 (1)	328.14 (63.72)	85.02 (64.19)	185.28 (57.18)	2.4	16.9
rc108C15	10	5	381.56 (54.54)	265.7 (1)	460.73 (4)	366.23 (36.36)	15.33 (32.32)	245.33 (44.77)	3.2	8
rc108C5	5	4	267.94 (41.05)	248.47 (23)	345.84 (4)	257.73 (19.52)	10.21 (21.53)	152.59 (18.88)	2.2	4.5
rc201C10	10	4	297.52 (17.05)	289.3 (13)	344.47 (1)	292.48 (10.05)	5.04 (7.76)	73.34 (0.0)	2	6.3
rc202C15	15	5	375.16 (9.33)	365.27 (1)	391.38 (1)	373.12 (9.33)	2.04 (0.0)	168.48 (19.4)	2.2	6.6
rc204C15	15	7	305.01 (2.44)	302.36 (13)	309.06 (1)	305.01 (2.44)	0.0 (0.0)	140.37 (18.15)	2	9.2
rc204C5	5	4	167.56 (2.92)	166.17 (22)	173.09 (6)	167.56 (2.92)	0.0 (0.0)	24.08 (0.0)	2	3.2
rc205C10	10	4	361.7 (15.35)	344.88 (7)	384.17 (1)	350.95 (4.48)	10.75 (13.19)	120.45 (54.89)	2.3	7.3
rc208C5	5	3	168.91 (0.0)	168.91 (30)	168.91 (30)	168.91 (0.0)	0.0 (0.0)	26.08 (0.0)	2	3.2

Table B.37: Results for MOHF-VRP-STW obtained by BCOi on the instance set $\mathcal{I}_1$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101C10	10	5	448.29 (32.36)	405.24 (8)	507.56 (1)	414.71 (28.28)	33.57 (46.68)	194.6 (17.11)	3.8	23.5
c101C5	5	3	2260.23 (2444.96)	263.07 (1)	7161.31 (1)	276.05 (36.12)	1984.18 (2433.25)	27.76 (31.66)	1.5	8.9
c103C15	15	5	448.44 (39.75)	420.37 (6)	550.92 (1)	440.63 (24.72)	7.81 (17.56)	271.68 (13.29)	4.6	12.4
c103C5	5	2	1944.89 (1745.65)	176.1 (1)	4642.59 (1)	180.67 (12.19)	1764.23 (1741.66)	2.0 (6.32)	1.1	12
c104C10	10	4	396.28 (62.99)	331.3 (4)	489.47 (6)	344.52 (17.12)	51.76 (54.35)	53.46 (7.66)	2.1	10.4
c106C15	15	3	377.28 (44.43)	329.88 (1)	477.08 (1)	361.45 (16.24)	15.82 (36.48)	199.74 (18.57)	4.7	14.3
c202C10	10	5	367.02 (56.62)	293.01 (1)	457.97 (7)	335.71 (34.08)	31.31 (57.87)	83.55 (12.87)	2.6	13.2
c202C15	15	5	476.13 (25.58)	445.72 (1)	519.14 (1)	471.22 (20.65)	4.9 (15.5)	276.96 (23.34)	4.5	10.8
c205C10	10	3	323.44 (9.37)	312.77 (10)	336.63 (1)	321.64 (8.21)	1.8 (5.69)	62.15 (10.22)	2.7	7.3
c206C5	5	4	1334.31 (1118.6)	245.98 (1)	2971.41 (6)	263.21 (24.99)	1071.1 (1114.96)	13.65 (17.63)	1.4	8.5
c208C15	15	4	426.27 (25.57)	383.29 (1)	460.18 (1)	421.66 (23.95)	4.61 (14.58)	178.23 (13.65)	4.5	9.1
c208C5	5	3	1567.26 (780.39)	202.81 (1)	2310.74 (7)	243.86 (21.49)	1323.4 (761.79)	0.0 (0.0)	1	11.7
r102C10	10	4	307.51 (109.41)	252.94 (1)	608.41 (1)	260.34 (19.05)	47.18 (100.28)	139.22 (23.69)	3.1	16
r102C15	15	8	427.43 (21.02)	396.77 (1)	449.71 (1)	368.08 (16.5)	59.36 (33.58)	274.15 (13.89)	5	20.2
r103C10	10	3	612.96 (134.35)	453.33 (1)	803.22 (1)	186.53 (9.32)	426.43 (128.84)	10.25 (2.83)	2	13.8
r104C5	5	3	931.74 (345.99)	144.9 (1)	1287.95 (1)	192.26 (30.4)	739.48 (334.0)	3.68 (11.63)	1.1	11.3
r105C15	15	6	377.14 (31.44)	347.06 (1)	435.97 (1)	351.15 (10.2)	25.99 (32.34)	241.83 (15.56)	4.9	16
r105C5	5	3	1338.91 (397.54)	709.63 (1)	1958.97 (1)	198.4 (22.28)	1140.51 (390.86)	0.0 (0.0)	1	9.6
r201C10	10	4	263.34 (12.58)	248.52 (1)	289.11 (1)	255.11 (6.56)	8.23 (16.92)	53.28 (6.91)	2.9	11.9
r202C15	15	6	466.04 (34.44)	408.82 (1)	511.18 (1)	457.71 (34.85)	8.33 (24.54)	274.93 (18.72)	4.3	11.6
r202C5	5	3	295.65 (227.35)	152.07 (8)	802.14 (1)	174.71 (21.21)	120.94 (217.42)	11.63 (15.01)	1.4	11.9
r203C10	10	5	275.39 (18.62)	250.44 (5)	306.59 (1)	275.39 (18.62)	0.0 (0.0)	67.57 (1.88)	2	7.8
r203C5	5	4	266.87 (72.49)	194.6 (14)	367.27 (1)	241.23 (45.81)	25.64 (38.04)	15.61 (16.48)	1.5	10.5
r209C15	15	5	406.56 (28.26)	375.18 (1)	472.09 (1)	400.65 (16.96)	5.91 (18.68)	208.47 (16.69)	4.1	11.7
rc102C10	10	4	500.02 (32.41)	416.67 (1)	524.37 (5)	423.46 (14.11)	76.57 (28.07)	260.58 (17.44)	4.6	15.5
rc103C15	15	5	410.5 (13.52)	385.76 (1)	432.78 (1)	403.09 (8.46)	7.41 (12.23)	282.42 (10.25)	4.9	14.3
rc105C5	5	4	1261.52 (492.64)	322.93 (1)	1720.78 (1)	259.65 (23.67)	1001.87 (474.67)	5.66 (11.93)	1.2	10.6
rc108C10	10	4	376.23 (8.75)	365.88 (1)	393.27 (1)	364.39 (11.65)	11.84 (16.75)	203.94 (5.36)	3.4	19.2
rc108C15	10	5	468.38 (40.53)	414.23 (1)	513.34 (5)	421.01 (7.81)	47.38 (37.14)	276.92 (22.19)	4.6	11.9
rc108C5	5	4	2024.37 (822.88)	549.42 (1)	3235.59 (1)	321.63 (40.89)	1702.74 (785.58)	5.19 (16.41)	1.1	8.7
rc201C10	10	4	433.63 (72.9)	377.26 (1)	580.06 (1)	357.72 (15.33)	75.91 (60.48)	91.96 (12.9)	2.9	17.9
rc202C15	15	5	506.69 (48.93)	474.18 (1)	630.12 (1)	489.95 (38.03)	16.74 (25.2)	261.54 (22.24)	4.5	11.9
rc204C15	15	7	430.3 (30.45)	389.15 (1)	462.53 (7)	430.3 (30.45)	0.0 (0.0)	187.51 (8.29)	3.3	7.1
rc204C5	5	4	285.89 (116.02)	183.2 (1)	521.09 (1)	227.46 (49.59)	58.43 (105.96)	0.0 (0.0)	1	9.2
rc205C10	10	4	408.06 (30.57)	360.11 (1)	471.91 (1)	385.92 (14.47)	22.14 (20.92)	80.06 (2.86)	2.8	7
rc208C5	5	3	254.89 (58.35)	163.74 (1)	340.42 (8)	222.34 (38.38)	32.55 (58.5)	11.38 (20.71)	1.3	12

Table B.38: Results for MOHF-VRP-STW obtained by GA on the instance set $\mathcal{I}_1$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101C10	10	5	380.71 (7.55)	368.45 (1)	388.22 (1)	379.61 (7.47)	1.1 (2.75)	249.03 (31.57)	3.1	22.3
c101C5	5	3	231.04 (1.09)	230.69 (29)	234.15 (1)	231.04 (1.09)	0.0 (0.0)	134.51 (35.01)	2.9	9.2
c103C15	15	5	378.4 (10.44)	367.15 (1)	392.42 (10)	374.29 (10.27)	4.11 (6.01)	250.31 (19.76)	3.5	13.8
c103C5	5	2	1173.43 (1789.06)	161.83 (1)	4642.59 (1)	180.18 (12.8)	993.25 (1783.06)	42.45 (46.85)	1.7	6
c104C10	10	4	303.23 (9.84)	291.54 (1)	328.01 (1)	302.15 (10.47)	1.08 (3.42)	94.32 (18.81)	2.1	8.2
c106C15	15	3	305.05 (20.43)	281.55 (5)	343.12 (1)	297.65 (23.73)	7.4 (15.6)	187.71 (10.42)	3.2	13.9
c202C10	10	5	273.63 (30.77)	247.5 (8)	343.81 (1)	273.63 (30.77)	0.0 (0.0)	111.83 (28.89)	2.5	11.2
c202C15	15	5	360.02 (6.21)	355.61 (17)	372.84 (1)	360.02 (6.21)	0.0 (0.0)	227.4 (7.39)	3	9.4
c205C10	10	3	274.95 (23.17)	235.41 (1)	312.19 (1)	274.95 (23.17)	0.0 (0.0)	131.53 (47.35)	2.6	7.2
c206C5	5	4	435.06 (592.92)	234.4 (1)	2122.48 (1)	255.68 (26.15)	179.37 (567.23)	59.72 (63.99)	1.9	6.3
c208C15	15	4	327.72 (16.05)	312.17 (10)	358.37 (1)	327.72 (16.05)	0.0 (0.0)	131.71 (24.62)	3	6.6
c208C5	5	3	630.23 (726.22)	179.22 (1)	2219.01 (1)	226.26 (50.74)	403.97 (702.07)	35.82 (40.15)	1.7	3.2
r102C10	10	4	248.99 (0.0)	248.99 (30)	248.99 (30)	238.32 (0.0)	10.67 (0.0)	148.9 (0.0)	3	12.5
r102C15	15	8	428.17 (42.75)	390.15 (9)	482.73 (1)	368.38 (17.19)	59.79 (42.14)	248.02 (15.81)	4.2	22.4
r103C10	10	3	213.79 (28.36)	182.95 (1)	284.96 (1)	204.99 (14.41)	8.8 (17.25)	103.24 (13.5)	3.2	14.8
r104C5	5	3	410.29 (433.31)	140.13 (6)	1287.95 (1)	155.66 (17.44)	254.64 (423.13)	33.47 (24.98)	1.7	5.3
r105C15	15	6	333.2 (11.78)	322.58 (1)	363.99 (1)	326.14 (8.9)	7.06 (11.51)	220.37 (13.59)	3.8	16.2
r105C5	5	3	661.34 (632.29)	168.02 (1)	1789.21 (1)	186.01 (18.16)	475.33 (621.7)	35.36 (39.56)	1.9	5.2
r201C10	10	4	227.15 (23.36)	197.38 (5)	271.5 (1)	227.15 (23.36)	0.0 (0.0)	122.13 (22.93)	3.3	8.4
r202C15	15	6	370.92 (21.07)	347.22 (1)	416.38 (1)	364.53 (22.26)	6.39 (3.37)	205.45 (12.93)	2.9	10.2
r202C5	5	3	218.54 (205.08)	149.57 (7)	802.14 (1)	156.09 (8.28)	62.45 (197.48)	37.14 (26.53)	1.8	3.6
r203C10	10	5	265.62 (14.87)	244.51 (1)	286.89 (1)	265.62 (14.87)	0.0 (0.0)	113.87 (25.65)	2.1	8.5
r203C5	5	4	233.64 (31.06)	208.5 (1)	312.13 (1)	227.96 (17.24)	5.67 (17.94)	54.75 (47.88)	2.1	5.2
r209C15	15	5	329.26 (23.26)	305.06 (1)	369.33 (1)	329.26 (23.26)	0.0 (0.0)	149.84 (25.88)	2.6	8.4
rc102C10	10	4	441.65 (31.03)	406.5 (1)	483.36 (1)	412.95 (16.0)	28.7 (33.82)	298.07 (45.4)	4	10.4
rc103C15	15	5	378.36 (2.86)	374.02 (4)	380.41 (18)	378.36 (2.86)	0.0 (0.0)	266.71 (5.85)	4	16.9
rc105C5	5	4	704.42 (592.63)	265.76 (1)	1695.42 (1)	247.66 (12.96)	456.76 (586.32)	53.7 (43.76)	1.9	6.5
rc108C10	10	4	355.37 (3.98)	348.85 (7)	361.2 (1)	341.14 (2.65)	14.24 (3.84)	205.68 (11.03)	3	21.7
rc108C15	10	5	383.3 (11.58)	363.35 (1)	403.96 (1)	369.88 (9.05)	13.42 (15.73)	253.87 (33.62)	3.2	11.2
rc108C5	5	4	868.57 (981.19)	250.81 (5)	2608.14 (1)	287.94 (32.6)	580.63 (953.77)	105.65 (78.48)	1.9	6
rc201C10	10	4	334.64 (10.82)	316.68 (1)	353.89 (1)	333.98 (10.76)	0.67 (2.1)	197.52 (30.94)	3.5	8.8
rc202C15	15	5	403.65 (31.93)	378.96 (4)	474.46 (1)	401.56 (33.0)	2.09 (1.53)	217.23 (32.4)	2.8	7.7
rc204C15	15	7	337.13 (23.91)	309.98 (1)	390.78 (1)	337.13 (23.91)	0.0 (0.0)	182.18 (43.09)	2.2	4.1
rc204C5	5	4	260.44 (128.6)	176.25 (1)	521.09 (1)	209.51 (49.62)	50.92 (108.7)	47.37 (42.18)	1.7	3.3
rc205C10	10	4	383.25 (24.64)	358.2 (7)	426.94 (1)	373.81 (19.55)	9.44 (12.17)	114.48 (45.75)	2.8	8
rc208C5	5	3	192.14 (31.22)	168.91 (4)	276.39 (1)	192.14 (31.22)	0.0 (0.0)	23.47 (8.25)	1.9	3.6

Table B.39: Results for MOHF-VRP-STW obtained by MA on the instance set $\mathcal{I}_1$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101C10	10	5	318.36 (15.12)	302.55 (6)	336.6 (8)	316.7 (14.74)	1.66 (0.92)	90.11 (0.0)	2	10.1
c101C5	5	3	1469.94 (1851.2)	252.82 (8)	5445.82 (1)	256.88 (4.93)	1213.07 (1848.1)	57.27 (66.59)	1.9	5.5
c103C15	15	5	351.27 (12.21)	337.73 (1)	373.34 (1)	346.59 (9.83)	4.68 (6.69)	178.8 (12.0)	2.9	14.2
c103C5	5	2	2020.17 (1878.42)	199.31 (1)	5372.2 (1)	180.73 (12.39)	1839.45 (1873.82)	2.0 (6.32)	1.1	3.4
c104C10	10	4	272.2 (0.73)	270.11 (1)	272.43 (27)	272.2 (0.73)	0.0 (0.0)	48.55 (13.32)	2	4.3
c106C15	15	3	269.97 (3.08)	267.94 (6)	278.57 (1)	269.97 (3.08)	0.0 (0.0)	98.44 (13.71)	2.2	10.8
c202C10	10	5	246.63 (8.91)	234.15 (1)	268.02 (1)	246.59 (8.91)	0.04 (0.11)	81.92 (16.18)	2	7.3
c202C15	15	5	364.77 (6.57)	359.03 (13)	374.91 (8)	363.65 (4.86)	1.11 (2.35)	179.46 (30.19)	2.4	8.4
c205C10	10	3	240.48 (21.78)	221.62 (7)	284.57 (1)	240.48 (21.78)	0.0 (0.0)	89.06 (22.23)	2	8
c206C5	5	4	1324.64 (1129.03)	217.34 (1)	2971.41 (4)	253.54 (32.2)	1071.1 (1114.96)	21.44 (30.82)	1.4	7.1
c208C15	15	4	291.98 (0.36)	291.56 (10)	292.31 (16)	291.98 (0.36)	0.0 (0.0)	105.92 (0.0)	3	6.4
c208C5	5	3	1494.2 (769.99)	202.81 (1)	2310.74 (5)	242.48 (20.79)	1251.72 (752.34)	11.02 (34.84)	1.1	4
r102C10	10	4	257.48 (26.96)	243.27 (9)	332.87 (1)	239.09 (10.38)	18.4 (30.17)	87.94 (12.37)	2.3	7.6
r102C15	15	8	441.82 (55.13)	379.94 (1)	538.59 (1)	342.04 (23.7)	99.78 (56.92)	215.68 (23.59)	3.9	25.6
r103C10	10	3	197.0 (42.71)	146.3 (1)	298.42 (1)	153.92 (14.42)	43.08 (37.68)	62.34 (18.55)	2.3	8.2
r104C5	5	3	932.38 (344.38)	151.28 (1)	1287.95 (1)	192.9 (29.35)	739.48 (334.0)	7.1 (22.45)	1.1	8.6
r105C15	15	6	353.6 (84.85)	306.22 (8)	589.19 (1)	317.64 (15.83)	35.96 (87.07)	198.41 (22.42)	3.2	22.5
r105C5	5	3	1338.91 (397.54)	709.63 (1)	1958.97 (1)	198.4 (22.28)	1140.51 (390.86)	0.0 (0.0)	1	6.9
r201C10	10	4	203.55 (9.76)	191.64 (4)	217.17 (1)	202.29 (7.98)	1.26 (2.07)	72.26 (27.45)	2.6	5.6
r202C15	15	6	350.26 (4.93)	341.02 (1)	357.08 (1)	336.55 (6.39)	13.72 (7.73)	169.09 (15.97)	2.2	9.7
r202C5	5	3	285.09 (234.27)	126.42 (1)	802.14 (1)	164.15 (28.37)	120.94 (217.42)	14.73 (19.24)	1.4	3.8
r203C10	10	5	243.5 (14.61)	235.02 (16)	270.83 (8)	243.5 (14.61)	0.0 (0.0)	61.47 (6.21)	2	10.4
r203C5	5	4	251.54 (79.66)	183.14 (8)	367.27 (1)	225.91 (48.12)	25.64 (38.04)	12.21 (15.76)	1.4	3.6
r209C15	15	5	278.91 (15.38)	267.53 (6)	302.28 (1)	278.91 (15.38)	0.0 (0.0)	116.78 (28.95)	2.3	3.2
rc102C10	10	4	530.48 (123.71)	395.08 (1)	745.17 (6)	371.73 (8.62)	158.75 (124.56)	199.48 (19.81)	3	12.2
rc103C15	15	5	464.88 (106.49)	375.63 (1)	664.9 (1)	383.58 (39.07)	81.3 (100.62)	266.41 (47.13)	3.9	13.9
rc105C5	5	4	1258.62 (497.88)	330.44 (1)	1720.78 (1)	258.89 (25.1)	999.73 (478.52)	7.45 (16.25)	1.2	7.2
rc108C10	10	4	477.55 (67.66)	366.49 (1)	569.97 (1)	397.64 (50.95)	79.91 (70.72)	211.42 (121.91)	3.3	15.5
rc108C15	10	5	373.82 (9.84)	361.93 (1)	390.52 (1)	358.04 (15.31)	15.78 (17.9)	220.69 (43.72)	3	8.6
rc108C5	5	4	2002.41 (868.28)	329.86 (1)	3235.59 (1)	322.53 (39.43)	1679.88 (833.12)	11.13 (35.21)	1.1	8.8
rc201C10	10	4	288.62 (1.43)	285.92 (6)	289.3 (22)	288.62 (1.43)	0.0 (0.0)	73.34 (0.0)	2	7.3
rc202C15	15	5	379.98 (7.1)	374.48 (18)	388.22 (11)	375.03 (3.34)	4.95 (3.76)	160.56 (0.0)	3	6.5
rc204C15	15	7	304.56 (1.94)	302.29 (1)	306.3 (15)	304.56 (1.94)	0.0 (0.0)	140.03 (17.06)	2	6.1
rc204C5	5	4	372.62 (165.24)	183.2 (1)	617.9 (7)	259.99 (63.54)	112.63 (131.34)	0.0 (0.0)	1	2.9
rc205C10	10	4	348.28 (17.36)	326.24 (8)	373.63 (1)	339.3 (16.13)	8.98 (10.74)	147.01 (44.78)	2.2	7.7
rc208C5	5	3	229.63 (75.29)	161.65 (14)	340.42 (8)	197.08 (43.71)	32.55 (58.5)	2.61 (8.25)	1.1	3.6

Table B.40: Results for MOHF-VRP-STW obtained by MMA on the instance set $\mathcal{I}_1$.

Instance	**C**	**A**	**Value**						**Trucks**	**Pareto-front size**
			Avg (σ)	**Min** (n_{min})	**Max** (n_{max})	**Dist. EV** (σ)	**Dist. ICV** (σ)	**Penalty** (σ)		
c101C10	10	5	332.42 (27.46)	304.39 (4)	375.71 (1)	329.17 (26.89)	3.25 (7.62)	122.04 (61.14)	2.3	8.8
c101C5	5	3	1095.2 (1684.03)	229.6 (1)	5445.82 (1)	243.06 (14.99)	852.13 (1672.19)	100.58 (80.02)	2.1	5.5
c103C15	15	5	362.34 (19.82)	336.21 (8)	395.9 (1)	354.79 (13.77)	7.55 (12.2)	208.41 (38.57)	3.2	13.5
c103C5	5	2	1325.42 (1704.74)	163.72 (1)	4642.59 (1)	179.28 (13.27)	1146.14 (1697.83)	7.0 (11.6)	1.3	2.9
c104C10	10	4	269.66 (3.22)	261.31 (1)	272.43 (10)	269.66 (3.22)	0.0 (0.0)	71.58 (20.04)	2	3.1
c106C15	15	3	263.72 (6.62)	261.62 (26)	282.56 (1)	263.63 (6.34)	0.09 (0.28)	129.48 (10.82)	3	9.8
c202C10	10	5	250.04 (15.43)	236.72 (5)	287.71 (1)	250.0 (15.44)	0.04 (0.11)	95.66 (29.55)	2.1	10
c202C15	15	5	367.78 (10.29)	355.61 (1)	382.56 (1)	367.22 (10.0)	0.56 (1.76)	192.55 (25.13)	2.9	10.8
c205C10	10	3	246.94 (13.05)	225.37 (1)	258.95 (11)	246.94 (13.05)	0.0 (0.0)	135.18 (15.41)	2.7	7.5
c206C5	5	4	964.37 (1211.96)	216.97 (1)	2971.41 (4)	238.52 (33.41)	725.85 (1193.17)	48.91 (36.68)	1.7	5.4
c208C15	15	4	292.31 (0.0)	292.31 (30)	292.31 (30)	292.31 (0.0)	0.0 (0.0)	105.92 (0.0)	3	7.2
c208C5	5	3	1017.43 (986.05)	160.18 (5)	2310.74 (8)	214.63 (40.76)	802.8 (949.47)	29.52 (64.16)	1.3	2.4
r102C10	10	4	255.5 (7.7)	248.99 (13)	270.34 (1)	247.19 (9.48)	8.31 (6.4)	166.24 (22.74)	3.2	16.5
r102C15	15	8	422.03 (27.08)	400.82 (8)	466.57 (4)	327.09 (16.53)	94.95 (22.82)	233.28 (23.77)	4.1	21
r103C10	10	3	186.39 (61.79)	144.42 (1)	345.9 (1)	153.62 (14.21)	32.78 (50.53)	58.63 (14.67)	2	10.1
r104C5	5	3	759.06 (553.85)	135.69 (1)	1499.89 (1)	178.6 (32.41)	580.45 (524.5)	22.91 (31.09)	1.4	3.5
r105C15	15	6	350.9 (54.86)	306.22 (1)	463.82 (1)	317.93 (9.12)	32.97 (55.93)	209.57 (23.09)	3.5	16.7
r105C5	5	3	628.8 (650.61)	168.02 (1)	1789.21 (1)	177.59 (18.61)	451.21 (633.82)	25.56 (37.67)	1.7	5.9
r201C10	10	4	211.33 (8.47)	199.09 (1)	224.9 (1)	210.73 (8.21)	0.6 (1.63)	90.15 (31.61)	2.6	6
r202C15	15	6	355.01 (15.04)	337.55 (1)	386.03 (1)	349.02 (17.99)	5.99 (6.95)	211.92 (23.13)	3	11.3
r202C5	5	3	216.08 (206.37)	140.93 (15)	802.14 (1)	153.63 (15.97)	62.45 (197.48)	25.51 (18.08)	1.7	3.7
r203C10	10	5	237.28 (1.8)	235.02 (8)	239.03 (10)	237.28 (1.8)	0.0 (0.0)	64.41 (0.0)	2	7
r203C5	5	4	222.48 (63.24)	183.14 (1)	367.27 (1)	205.61 (26.46)	16.87 (37.87)	21.37 (14.75)	1.7	4.1
r209C15	15	5	287.49 (11.96)	279.58 (1)	318.4 (1)	277.16 (7.05)	10.32 (13.82)	114.83 (24.68)	2.5	4.1
rc102C10	10	4	488.7 (104.3)	399.65 (1)	654.96 (6)	384.27 (34.71)	104.43 (102.36)	255.21 (47.84)	3.5	14.1
rc103C15	15	5	495.39 (133.84)	398.72 (1)	814.94 (1)	383.68 (7.77)	111.72 (137.75)	285.66 (43.09)	4	17.6
rc105C5	5	4	911.3 (652.87)	236.3 (1)	1767.58 (1)	251.99 (28.04)	659.31 (629.62)	32.66 (37.92)	1.6	7.8
rc108C10	10	4	407.52 (67.28)	348.37 (1)	581.4 (1)	352.96 (18.57)	54.57 (69.73)	213.87 (35.32)	3.2	16.5
rc108C15	10	5	379.53 (10.78)	369.57 (9)	398.0 (4)	367.3 (12.67)	12.22 (20.02)	231.36 (40.08)	3.2	10.3
rc108C5	5	4	870.16 (980.19)	248.47 (5)	2608.14 (1)	293.91 (32.07)	576.26 (956.6)	118.93 (87.26)	2.1	6.4
rc201C10	10	4	289.3 (0.0)	289.3 (30)	289.3 (30)	289.3 (0.0)	0.0 (0.0)	73.34 (0.0)	2	5.5
rc202C15	15	5	368.85 (3.97)	365.27 (13)	374.48 (8)	366.81 (3.97)	2.04 (0.0)	185.77 (26.57)	2.5	4.2
rc204C15	15	7	305.65 (2.64)	302.29 (7)	310.59 (1)	305.65 (2.64)	0.0 (0.0)	150.81 (26.05)	2	5.4
rc204C5	5	4	253.72 (129.9)	174.53 (12)	521.09 (1)	203.91 (52.44)	49.81 (106.83)	18.08 (26.23)	1.5	4.5
rc205C10	10	4	356.15 (12.58)	341.79 (1)	372.04 (4)	346.73 (13.5)	9.41 (9.53)	157.24 (70.96)	2.5	6.4
rc208C5	5	3	173.96 (36.01)	161.65 (13)	276.39 (1)	173.96 (36.01)	0.0 (0.0)	10.43 (13.47)	1.4	3.6

B.3.2 Results on the instance set $\mathcal{I}_2$

TABLE B.41: Results for MOHF-VRP-STW obtained by GVNS on the instance set $\mathcal{I}_2$.

Instance	**C**	**A**	**Value**						**Trucks**	**Pareto-front size**
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Dist. EV (σ)**	**Dist. ICV (σ)**	**Penalty (σ)**		
c101_21	100	21	1423.92 (92.86)	1287.54 (1)	1604.09 (1)	1419.89 (86.08)	4.03 (9.73)	897.21 (106.18)	17.7	12.6
c102_21	100	21	1317.93 (98.54)	1096.49 (1)	1412.25 (1)	1317.68 (98.52)	0.25 (0.8)	831.91 (60.5)	18	16.2
c103_21	100	21	1362.25 (39.73)	1275.43 (1)	1406.65 (5)	1350.53 (47.18)	11.72 (15.66)	1087.0 (84.99)	17.8	8.5
c104_21	100	21	1170.16 (78.66)	1054.96 (1)	1307.59 (1)	1170.16 (78.66)	0.0 (0.0)	667.32 (68.57)	15.4	12.6
c105_21	100	21	1402.29 (140.37)	1217.41 (1)	1695.08 (1)	1397.2 (140.3)	5.09 (9.65)	833.57 (61.69)	17.2	16.7
c106_21	100	21	1361.92 (57.44)	1300.12 (1)	1430.19 (1)	1337.41 (37.77)	24.51 (26.26)	945.95 (202.02)	17.5	23
c107_21	100	21	1375.17 (159.45)	1147.03 (1)	1588.23 (1)	1356.5 (146.8)	18.67 (19.0)	822.33 (160.86)	17	10
c108_21	100	21	1315.23 (125.57)	1157.2 (1)	1537.47 (1)	1314.39 (125.95)	0.84 (1.19)	749.78 (130.65)	16.8	14.3
c109_21	100	21	1284.09 (53.76)	1213.56 (1)	1378.89 (1)	1284.04 (53.75)	0.04 (0.13)	819.19 (200.51)	17.2	13.2
c201_21	100	21	1290.45 (79.8)	1186.15 (1)	1453.94 (1)	1290.45 (79.8)	0.0 (0.0)	590.2 (98.99)	14.9	16.9
c202_21	100	21	1238.72 (95.61)	1110.03 (1)	1407.33 (1)	1235.85 (90.28)	2.87 (9.06)	558.61 (182.1)	14.4	9.3
c203_21	100	21	1287.03 (137.19)	1057.61 (1)	1436.92 (1)	1287.03 (137.19)	0.0 (0.0)	565.99 (207.42)	14.5	12.8
c204_21	100	21	1194.54 (89.61)	1104.37 (1)	1427.83 (1)	1194.54 (89.61)	0.0 (0.0)	639.25 (120.6)	13.8	15.7
c205_21	100	21	1279.12 (111.09)	1164.88 (1)	1528.43 (1)	1272.65 (97.18)	6.46 (18.23)	619.03 (133.51)	14.8	10.7
c206_21	100	21	1204.99 (71.46)	1094.49 (1)	1331.84 (1)	1204.99 (71.46)	0.0 (0.0)	580.84 (136.76)	14.3	16.8
c207_21	100	21	1292.89 (93.17)	1132.18 (1)	1400.39 (1)	1292.68 (93.05)	0.21 (0.67)	629.58 (116.11)	14.8	12.2
c208_21	100	21	1278.29 (112.78)	1081.21 (1)	1444.7 (1)	1278.29 (112.78)	0.0 (0.0)	616.49 (177.08)	15.8	16.8
r101_21	100	21	1797.13 (113.8)	1619.43 (1)	1928.74 (1)	1579.1 (54.15)	218.04 (110.34)	906.06 (76.94)	18.9	30.7
r102_21	100	21	1552.77 (72.3)	1475.4 (1)	1679.03 (1)	1454.77 (55.09)	98.01 (45.32)	867.39 (75.17)	18.9	26.9
r103_21	100	21	1444.02 (37.62)	1390.05 (1)	1490.89 (10)	1416.39 (42.82)	27.63 (21.25)	1067.05 (172.29)	18.5	28.9
r104_21	100	21	1486.56 (203.36)	1259.11 (1)	1847.07 (1)	1395.89 (141.67)	90.67 (72.69)	941.26 (201.45)	16.1	20.6
r105_21	100	21	1558.69 (64.05)	1487.26 (6)	1638.76 (6)	1488.8 (54.46)	69.89 (18.43)	842.84 (44.98)	18.3	28.2
r106_21	100	21	1507.92 (74.63)	1399.64 (1)	1640.17 (1)	1449.07 (76.29)	58.85 (35.11)	837.22 (81.1)	18.3	25
r107_21	100	21	1345.79 (63.49)	1251.61 (1)	1485.09 (1)	1326.83 (62.42)	18.96 (14.03)	730.99 (100.23)	17.3	21.9
r108_21	100	21	1288.54 (81.41)	1141.95 (1)	1405.16 (1)	1276.29 (83.74)	12.26 (8.33)	688.51 (122.85)	16.3	23.5
r109_21	100	21	1426.07 (117.47)	1295.19 (1)	1675.72 (1)	1397.96 (112.35)	28.11 (17.83)	789.98 (71.54)	17.2	19.9
r110_21	100	21	1289.83 (54.13)	1224.75 (1)	1416.93 (1)	1271.57 (47.32)	18.25 (13.31)	709.36 (114.73)	16.4	19.2
r111_21	100	21	1308.87 (189.64)	1195.86 (1)	1804.73 (1)	1284.12 (173.92)	24.76 (20.73)	742.95 (165.09)	16	28
r112_21	100	21	1280.31 (94.93)	1147.38 (1)	1403.57 (11)	1270.8 (90.68)	9.51 (6.68)	950.89 (228.62)	15.9	16.5
r201_21	100	21	1483.06 (50.61)	1412.59 (1)	1550.61 (1)	1477.17 (55.8)	5.89 (8.19)	639.15 (162.44)	16.7	18.7
r202_21	100	21	1368.5 (70.31)	1238.72 (1)	1469.97 (1)	1364.55 (72.21)	3.96 (5.2)	444.22 (181.35)	16.1	13.4
r203_21	100	21	1251.53 (88.71)	1106.0 (1)	1377.8 (1)	1250.97 (89.1)	0.56 (1.04)	425.78 (164.08)	15.4	11.7
r204_21	100	21	1079.7 (78.9)	970.86 (1)	1214.97 (1)	1079.57 (78.98)	0.13 (0.41)	358.4 (123.42)	12.6	7.6
r205_21	100	21	1311.03 (72.93)	1228.04 (1)	1447.81 (1)	1308.51 (72.39)	2.52 (5.95)	562.24 (202.19)	15	15.9
r206_21	100	21	1358.58 (115.24)	1147.31 (1)	1581.95 (1)	1356.38 (116.45)	2.2 (4.14)	474.86 (226.67)	16	12
r207_21	100	21	1158.72 (84.27)	1055.15 (1)	1297.62 (1)	1157.7 (83.41)	1.02 (2.09)	481.39 (109.1)	13.5	12.3
r208_21	100	21	1068.47 (51.61)	963.6 (1)	1156.99 (1)	1068.24 (51.64)	0.23 (0.55)	276.71 (93.1)	12.1	7.8
r209_21	100	21	1260.76 (84.55)	1105.63 (1)	1386.33 (1)	1260.69 (84.68)	0.06 (0.2)	464.27 (84.22)	14.2	14.2
r210_21	100	21	1245.51 (61.46)	1114.96 (1)	1336.01 (1)	1245.3 (61.34)	0.2 (0.59)	396.39 (130.11)	13.7	10.4
r211_21	100	21	1139.74 (63.83)	1042.69 (1)	1229.91 (1)	1137.8 (63.74)	1.94 (6.13)	275.17 (109.29)	13.4	10.1
rc101_21	100	21	1987.73 (113.23)	1780.09 (1)	2163.93 (1)	1863.19 (110.43)	124.54 (33.88)	1362.77 (259.27)	19.3	24.2
rc102_21	100	21	1788.25 (94.46)	1656.82 (1)	2014.27 (1)	1740.4 (83.26)	47.85 (29.38)	953.27 (106.53)	19.9	17.9
rc103_21	100	21	1813.52 (185.94)	1584.55 (1)	2145.33 (1)	1715.88 (144.92)	97.64 (55.5)	1215.75 (195.48)	17.1	17.6
rc104_21	100	21	1681.17 (196.5)	1359.54 (1)	2082.73 (1)	1613.26 (138.2)	67.91 (97.95)	1251.87 (244.94)	17.3	25.1
rc105_21	100	21	1650.4 (82.79)	1519.12 (1)	1820.71 (1)	1614.45 (74.08)	35.95 (15.74)	907.77 (92.5)	18.4	26.3
rc106_21	100	21	1800.11 (104.73)	1726.36 (1)	2026.66 (1)	1732.81 (107.81)	67.3 (18.39)	1306.8 (237.4)	18.1	18.5
rc107_21	100	21	1670.61 (128.54)	1523.36 (9)	1836.57 (8)	1629.38 (88.58)	41.22 (43.84)	1296.55 (56.69)	17.3	21.9
rc108_21	100	21	1573.79 (181.01)	1360.94 (1)	2011.97 (1)	1551.05 (179.51)	22.74 (11.78)	980.74 (224.16)	17.1	18.3
rc201_21	100	21	1705.38 (103.59)	1548.26 (1)	1820.39 (1)	1700.47 (100.51)	4.9 (6.86)	706.14 (145.46)	18	16.3
rc202_21	100	21	1590.62 (85.33)	1451.67 (1)	1689.37 (1)	1587.9 (84.48)	2.72 (4.14)	629.92 (159.73)	15.3	14.7
rc203_21	100	21	1500.78 (104.74)	1362.31 (1)	1635.65 (1)	1500.73 (104.74)	0.06 (0.15)	416.67 (74.97)	14.4	10.5
rc204_21	100	21	1338.01 (133.3)	1132.23 (1)	1554.71 (1)	1337.47 (132.72)	0.54 (1.55)	543.49 (158.8)	13.6	11
rc205_21	100	21	1510.19 (91.29)	1387.77 (1)	1627.82 (1)	1506.06 (90.42)	4.14 (4.09)	632.86 (150.08)	14.8	14.2
rc206_21	100	21	1469.72 (79.51)	1350.68 (1)	1616.04 (1)	1467.9 (78.93)	1.82 (2.26)	539.22 (144.04)	14.2	9.9
rc207_21	100	21	1418.66 (88.44)	1261.21 (1)	1552.58 (1)	1416.55 (88.37)	2.11 (3.03)	560.39 (157.68)	14.3	16.4
rc208_21	100	21	1367.95 (150.9)	1145.03 (1)	1630.94 (1)	1366.13 (151.95)	1.81 (1.82)	572.7 (160.07)	14	11.4

TABLE B.42: Results for MOHF-VRP-STW obtained by GRASP on the instance set $\mathcal{I}_2$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101_21	100	21	1526.89 (74.21)	1373.55 (1)	1636.32 (1)	1485.36 (56.84)	41.53 (41.0)	1203.32 (91.95)	18.3	16.8
c102_21	100	21	1417.87 (79.68)	1328.21 (1)	1529.19 (1)	1375.25 (57.14)	42.62 (53.94)	1052.0 (65.87)	17.6	12.9
c103_21	100	21	1366.99 (44.32)	1275.43 (1)	1432.66 (1)	1351.1 (52.72)	15.89 (17.33)	1078.03 (69.7)	17.5	12.5
c104_21	100	21	1262.45 (56.35)	1187.6 (7)	1341.35 (1)	1261.58 (56.47)	0.87 (1.64)	985.94 (90.49)	16.4	14.8
c105_21	100	21	1469.65 (112.13)	1302.99 (1)	1670.54 (1)	1412.69 (87.04)	56.96 (50.64)	1063.29 (138.99)	17.6	14.5
c106_21	100	21	1395.33 (43.17)	1281.87 (1)	1430.19 (1)	1370.51 (40.49)	24.82 (21.66)	1135.39 (110.17)	17.4	13.4
c107_21	100	21	1396.5 (88.51)	1285.0 (1)	1604.82 (1)	1372.96 (91.63)	23.53 (11.31)	1130.56 (83.97)	17.1	18.5
c108_21	100	21	1346.46 (81.21)	1203.67 (1)	1473.34 (1)	1339.72 (76.22)	6.75 (12.36)	1099.97 (101.6)	17.1	14.3
c109_21	100	21	1286.32 (60.65)	1186.8 (1)	1350.29 (1)	1282.46 (61.27)	3.87 (7.64)	1016.68 (121.97)	16.5	10.5
c201_21	100	21	1388.84 (52.25)	1306.06 (1)	1485.12 (1)	1386.06 (52.83)	2.79 (8.82)	1169.97 (100.12)	15.8	17
c202_21	100	21	1385.0 (55.42)	1298.54 (1)	1468.91 (1)	1385.0 (55.42)	0.0 (0.0)	1089.85 (97.41)	16.3	12.9
c203_21	100	21	1307.51 (101.93)	1151.01 (1)	1449.42 (1)	1303.28 (96.09)	4.24 (13.39)	1023.4 (64.81)	15.2	12.5
c204_21	100	21	1265.49 (43.53)	1190.84 (1)	1327.54 (1)	1265.49 (43.53)	0.0 (0.0)	1013.4 (134.4)	15.2	11.2
c205_21	100	21	1371.71 (84.53)	1239.01 (1)	1518.3 (1)	1371.71 (84.53)	0.0 (0.0)	1059.78 (98.66)	15.9	11.3
c206_21	100	21	1361.71 (47.8)	1290.34 (1)	1447.44 (1)	1361.71 (47.8)	0.0 (0.0)	1010.75 (79.82)	16.3	8.6
c207_21	100	21	1368.26 (66.25)	1231.15 (1)	1440.58 (1)	1368.26 (66.25)	0.0 (0.0)	1033.06 (103.27)	16.6	11.5
c208_21	100	21	1344.18 (84.32)	1217.6 (1)	1484.47 (1)	1344.18 (84.32)	0.0 (0.0)	1040.46 (109.7)	16.1	9.3
r101_21	100	21	1859.58 (62.38)	1766.87 (1)	1962.83 (1)	1589.34 (18.29)	270.24 (65.64)	1336.35 (93.07)	19.1	42.1
r102_21	100	21	1647.77 (64.1)	1538.47 (1)	1764.1 (1)	1494.05 (56.93)	153.72 (35.0)	1225.2 (96.28)	18.9	28.1
r103_21	100	21	1460.06 (48.22)	1390.05 (1)	1542.56 (1)	1402.46 (19.05)	57.6 (33.25)	1177.04 (94.74)	17.7	29.6
r104_21	100	21	1314.51 (43.98)	1240.59 (1)	1366.03 (1)	1284.79 (41.21)	29.72 (25.72)	1124.91 (135.42)	16.3	17
r105_21	100	21	1633.74 (67.74)	1513.58 (1)	1751.57 (1)	1517.11 (58.92)	116.62 (40.87)	1271.47 (104.62)	18.7	35.4
r106_21	100	21	1516.4 (46.97)	1456.31 (1)	1594.86 (1)	1447.62 (34.32)	68.78 (26.91)	1200.69 (79.78)	18	26.7
r107_21	100	21	1387.93 (41.53)	1286.38 (1)	1434.15 (1)	1352.4 (45.13)	35.53 (20.13)	1109.82 (79.11)	17.1	22.5
r108_21	100	21	1329.72 (51.89)	1260.16 (1)	1418.05 (1)	1316.89 (53.42)	12.84 (10.72)	1126.06 (119.01)	17.2	11.6
r109_21	100	21	1460.15 (52.22)	1398.35 (1)	1528.86 (1)	1416.85 (43.86)	43.3 (29.18)	1095.65 (87.14)	17.9	19.2
r110_21	100	21	1348.34 (54.65)	1263.27 (1)	1427.25 (1)	1334.18 (54.36)	14.16 (10.08)	1058.44 (74.69)	17.5	21
r111_21	100	21	1350.9 (36.19)	1285.69 (1)	1391.5 (1)	1339.55 (35.96)	11.35 (11.53)	1044.6 (61.17)	17.2	19.4
r112_21	100	21	1284.57 (73.91)	1147.38 (1)	1398.32 (1)	1274.03 (67.95)	10.55 (7.67)	1064.57 (68.64)	16.5	15.3
r201_21	100	21	1488.52 (79.87)	1407.2 (1)	1633.63 (1)	1478.65 (78.57)	9.87 (11.05)	1114.98 (117.88)	16.4	18.8
r202_21	100	21	1404.49 (30.23)	1343.57 (1)	1438.09 (1)	1400.42 (29.14)	4.06 (6.56)	1024.97 (109.05)	16.4	16.4
r203_21	100	21	1299.49 (26.63)	1248.39 (1)	1330.95 (1)	1294.88 (27.24)	4.61 (5.25)	901.47 (123.52)	15.8	16.7
r204_21	100	21	1200.97 (34.96)	1136.83 (1)	1241.26 (1)	1200.56 (34.62)	0.4 (1.28)	899.28 (98.44)	14.9	18.8
r205_21	100	21	1417.05 (42.51)	1341.44 (1)	1466.17 (1)	1397.73 (38.37)	19.33 (28.44)	1071.77 (110.21)	16.6	20.2
r206_21	100	21	1371.64 (47.07)	1309.8 (1)	1443.74 (1)	1362.67 (40.81)	8.97 (11.54)	940.74 (104.14)	15.7	22
r207_21	100	21	1258.03 (38.27)	1187.65 (1)	1330.04 (1)	1256.81 (37.51)	1.22 (3.85)	943.08 (153.96)	15.9	17.4
r208_21	100	21	1181.06 (38.71)	1120.11 (1)	1221.38 (1)	1180.94 (38.58)	0.11 (0.24)	842.78 (133.15)	14.7	12.3
r209_21	100	21	1317.47 (31.86)	1260.77 (1)	1355.22 (1)	1314.78 (33.44)	2.69 (3.53)	973.83 (97.17)	16	14.1
r210_21	100	21	1287.97 (40.53)	1210.1 (1)	1336.6 (1)	1281.87 (44.31)	6.1 (6.65)	973.13 (74.98)	15.4	17.1
r211_21	100	21	1250.74 (31.05)	1201.1 (1)	1303.83 (1)	1248.19 (33.5)	2.55 (7.24)	935.07 (124.61)	15.4	17.4
rc101_21	100	21	2003.71 (60.99)	1879.91 (1)	2098.65 (1)	1823.12 (35.8)	180.59 (53.48)	1527.11 (106.04)	18.9	32.1
rc102_21	100	21	1842.67 (74.4)	1753.65 (1)	1961.5 (1)	1740.83 (58.65)	101.84 (41.29)	1425.67 (118.1)	18.8	18.3
rc103_21	100	21	1656.85 (65.37)	1571.68 (1)	1792.67 (1)	1602.45 (83.37)	54.4 (27.91)	1321.48 (72.6)	17.4	17.8
rc104_21	100	21	1594.32 (72.97)	1455.5 (1)	1724.63 (1)	1562.95 (64.86)	31.37 (26.22)	1321.84 (84.08)	17.3	10.3
rc105_21	100	21	1777.36 (86.09)	1612.2 (1)	1907.58 (1)	1687.88 (79.86)	89.48 (54.37)	1447.19 (141.21)	18	16.3
rc106_21	100	21	1804.2 (88.53)	1726.36 (1)	1980.16 (1)	1732.53 (78.24)	71.67 (24.6)	1452.85 (117.79)	18.2	17.3
rc107_21	100	21	1675.1 (111.73)	1497.81 (1)	1836.57 (1)	1638.69 (112.78)	36.41 (32.55)	1293.31 (85.17)	17.2	10.5
rc108_21	100	21	1585.5 (51.45)	1498.89 (1)	1653.68 (1)	1571.17 (53.57)	14.33 (10.76)	1242.42 (99.73)	17.5	9.8
rc201_21	100	21	1800.88 (50.3)	1721.69 (1)	1883.3 (1)	1787.99 (46.58)	12.89 (13.19)	1423.44 (164.52)	17.6	23
rc202_21	100	21	1692.9 (48.25)	1632.13 (1)	1774.03 (1)	1687.08 (49.14)	5.81 (8.46)	1262.62 (105.47)	16.7	18.6
rc203_21	100	21	1515.2 (73.8)	1399.78 (8)	1599.9 (1)	1514.31 (72.79)	0.89 (1.92)	1189.94 (154.15)	16	18.7
rc204_21	100	21	1457.03 (53.48)	1360.98 (1)	1538.56 (1)	1456.75 (54.04)	0.28 (0.88)	1091.3 (98.79)	15.4	12.6
rc205_21	100	21	1684.59 (61.02)	1606.6 (1)	1793.61 (1)	1669.78 (63.11)	14.82 (14.87)	1292.02 (119.23)	16.8	18.2
rc206_21	100	21	1655.06 (66.84)	1583.91 (1)	1780.02 (1)	1639.7 (75.87)	15.36 (18.6)	1255.3 (121.94)	16.2	16.5
rc207_21	100	21	1541.83 (47.49)	1475.53 (1)	1612.13 (1)	1539.41 (48.15)	2.42 (3.7)	1229.71 (85.61)	16.3	16.7
rc208_21	100	21	1451.4 (59.49)	1322.47 (1)	1515.48 (1)	1450.28 (59.12)	1.12 (1.73)	1170.31 (74.08)	15.7	11.3

TABLE B.43: Results for MOHF-VRP-STW obtained by ACO on the instance set $\mathcal{I}_2$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101_21	100	21	27662.82 (3052.19)	25329.7 (1)	35336.37 (1)	3931.29 (188.45)	23731.53 (3074.16)	2706.5 (170.23)	25	78.5
c102_21	100	21	19083.57 (1508.91)	17640.22 (4)	21689.13 (1)	4044.01 (193.03)	15039.56 (1615.24)	2713.34 (231.97)	25.8	59.4
c103_21	100	21	11353.0 (1326.97)	9489.75 (1)	13311.89 (1)	4000.92 (271.67)	7352.08 (1423.4)	2695.92 (139.16)	25.2	64.3
c104_21	100	21	5939.3 (619.71)	5189.21 (1)	6857.83 (1)	3895.62 (178.91)	2043.68 (632.78)	2486.64 (173.32)	23.5	53.3
c105_21	100	21	22864.03 (2935.77)	17545.17 (1)	25902.31 (6)	3957.11 (128.22)	18906.92 (3035.81)	2824.11 (227.43)	25.7	83
c106_21	100	21	20381.56 (1158.41)	17502.21 (1)	21435.5 (1)	4053.54 (188.11)	16328.02 (1296.38)	2816.46 (149.43)	25.5	79
c107_21	100	21	21654.74 (2487.4)	17862.71 (1)	25122.19 (5)	4015.52 (156.01)	17639.22 (2592.41)	2732.95 (199.68)	24.5	91.5
c108_21	100	21	16396.62 (1172.47)	15391.6 (1)	18696.73 (1)	4111.01 (155.65)	12285.61 (1267.25)	2903.95 (192.02)	26.3	78.2
c109_21	100	21	12837.5 (1048.24)	10214.98 (1)	13848.75 (1)	3816.52 (182.87)	9020.98 (1163.38)	2617.06 (308.41)	23.1	61.6
c201_21	100	21	50660.83 (5091.04)	45172.12 (1)	62126.03 (1)	4143.18 (179.04)	46517.65 (5046.53)	2114.04 (185.67)	22.5	85.3
c202_21	100	21	27598.16 (3625.58)	23228.35 (1)	33408.2 (1)	4123.82 (251.85)	23474.34 (3671.92)	2309.45 (215.12)	21.3	65.4
c203_21	100	21	13375.12 (1810.58)	10445.53 (1)	17096.91 (1)	4187.9 (132.34)	9187.23 (1802.45)	2269.34 (243.44)	22.1	65.4
c204_21	100	21	4449.3 (332.25)	3877.17 (1)	4859.12 (7)	4020.16 (140.26)	429.13 (384.24)	2266.22 (299.97)	21	59.9
c205_21	100	21	40214.52 (4081.9)	33222.07 (7)	43692.22 (1)	4096.77 (240.36)	36117.75 (4107.44)	2262.32 (353.67)	22.1	83.2
c206_21	100	21	32020.12 (2174.99)	28843.19 (1)	35418.56 (1)	4190.01 (113.91)	27830.11 (2223.9)	2302.89 (263.37)	23.1	82
c207_21	100	21	24551.43 (3094.13)	19642.05 (1)	28390.92 (1)	4144.73 (107.41)	20406.7 (3014.1)	2278.12 (215.86)	23.3	74.3
c208_21	100	21	26489.61 (2478.18)	23801.95 (5)	32450.67 (1)	4251.98 (119.63)	22237.63 (2546.62)	2165.29 (127.97)	22.7	69.2
r101_21	100	21	13351.75 (879.69)	11476.33 (1)	14323.53 (1)	3383.59 (155.02)	9968.17 (911.15)	2288.64 (257.28)	25.2	67.9
r102_21	100	21	10288.72 (1043.61)	8742.39 (1)	12304.24 (1)	3448.45 (154.7)	6840.26 (1117.63)	2532.66 (233.09)	25.1	73.4
r103_21	100	21	8208.09 (378.05)	7579.45 (1)	8744.18 (1)	3472.25 (82.11)	4735.84 (367.19)	2503.18 (92.51)	26.3	56.9
r104_21	100	21	6292.75 (710.39)	5069.12 (1)	7111.76 (1)	3382.17 (133.44)	2910.58 (728.93)	2460.0 (129.81)	24.9	41.9
r105_21	100	21	12029.61 (496.87)	11470.46 (1)	12845.6 (1)	3487.74 (83.51)	8541.87 (487.18)	2371.49 (166.78)	25.6	82.4
r106_21	100	21	9526.39 (632.26)	8716.65 (6)	10389.37 (1)	3471.69 (92.08)	6054.7 (659.95)	2381.0 (205.94)	25.9	60.5
r107_21	100	21	7833.17 (509.12)	7173.14 (1)	8811.26 (1)	3457.57 (181.96)	4375.61 (641.91)	2417.2 (153.89)	25.8	62.1
r108_21	100	21	6483.64 (824.2)	5526.19 (1)	7961.54 (1)	3470.44 (144.71)	3013.2 (823.15)	2607.23 (112.42)	25.6	44.6
r109_21	100	21	8822.79 (610.13)	8259.45 (1)	9996.34 (1)	3530.5 (113.34)	5292.29 (660.0)	2502.3 (168.58)	27.2	83.1
r110_21	100	21	7729.71 (449.68)	6805.89 (1)	8324.99 (1)	3385.84 (163.27)	4343.87 (572.38)	2282.58 (167.95)	24.9	73.7
r111_21	100	21	7803.01 (463.61)	7106.93 (1)	8295.55 (1)	3503.35 (230.85)	4299.65 (325.64)	2313.93 (120.18)	25.6	73.3
r112_21	100	21	6292.33 (434.35)	5575.47 (1)	6939.26 (4)	3383.47 (121.95)	2908.86 (438.53)	2324.28 (163.81)	25.4	84.4
r201_21	100	21	16549.89 (1758.49)	13661.48 (1)	19491.77 (1)	3436.49 (159.98)	13113.4 (1873.08)	1227.13 (102.53)	19.2	53.2
r202_21	100	21	11626.5 (1193.45)	10222.21 (1)	13685.97 (1)	3364.05 (130.9)	8262.45 (1212.61)	862.09 (120.16)	16.9	27.6
r203_21	100	21	5837.42 (668.46)	5140.59 (1)	7270.01 (1)	3493.83 (182.05)	2343.59 (815.79)	1275.83 (149.38)	19.7	42.1
r204_21	100	21	3772.08 (316.49)	3364.19 (7)	4115.42 (1)	3258.93 (100.32)	513.15 (250.25)	708.5 (71.49)	15.5	16.8
r205_21	100	21	10796.36 (1207.15)	8207.61 (1)	13016.19 (1)	3409.99 (99.46)	7386.37 (1213.19)	1077.39 (130.67)	17.4	35.5
r206_21	100	21	7198.07 (709.06)	6415.92 (8)	8761.5 (1)	3346.81 (157.67)	3851.26 (789.86)	1247.41 (180.24)	18.8	35.7
r207_21	100	21	4960.47 (766.22)	3760.86 (1)	6257.87 (1)	3286.65 (82.41)	1673.81 (750.16)	617.45 (86.02)	15.1	18.1
r208_21	100	21	3468.1 (106.91)	3284.82 (1)	3636.43 (1)	3285.3 (90.99)	182.8 (138.81)	888.81 (102.2)	15.4	23.7
r209_21	100	21	6073.43 (486.35)	5307.38 (1)	6754.6 (1)	3344.45 (147.16)	2728.98 (546.72)	1216.02 (126.46)	18.7	40.6
r210_21	100	21	5493.84 (437.6)	5129.61 (1)	6624.45 (1)	3402.87 (80.77)	2090.97 (441.43)	1250.57 (65.83)	18.4	44.3
r211_21	100	21	4330.62 (528.47)	3751.54 (1)	5132.54 (1)	3286.37 (169.75)	1044.25 (549.74)	588.19 (153.81)	14.9	17.5
rc101_21	100	21	13780.62 (991.13)	12206.3 (1)	14763.76 (1)	4363.18 (246.89)	9417.43 (1079.08)	3176.24 (323.07)	25.8	47.2
rc102_21	100	21	12188.36 (1080.69)	9541.68 (1)	13609.3 (1)	4492.86 (328.89)	7695.5 (1099.12)	3247.56 (339.77)	27.1	51
rc103_21	100	21	10468.83 (443.62)	9381.64 (1)	11109.7 (1)	4238.32 (211.08)	6230.51 (524.39)	3196.61 (208.16)	25	38.9
rc104_21	100	21	8892.25 (610.79)	8089.01 (1)	9835.56 (1)	4286.13 (157.84)	4606.12 (718.75)	3259.02 (148.86)	24.7	40.5
rc105_21	100	21	12336.81 (931.68)	10569.26 (1)	13436.53 (1)	4337.02 (230.07)	7999.79 (999.36)	3036.16 (251.08)	25	50.5
rc106_21	100	21	12192.12 (765.59)	11200.03 (1)	13665.11 (1)	4415.02 (262.53)	7777.1 (751.51)	3053.35 (329.06)	25	36.3
rc107_21	100	21	10449.32 (576.35)	9402.91 (1)	11174.9 (1)	4431.24 (183.46)	6018.07 (574.43)	3150.17 (200.35)	26.3	50.2
rc108_21	100	21	9355.64 (572.35)	8318.57 (1)	10369.03 (1)	4498.69 (371.49)	4856.95 (651.33)	3247.24 (357.26)	26.8	57.6
rc201_21	100	21	17609.94 (1185.32)	16013.92 (1)	20041.55 (1)	4394.11 (233.05)	13215.83 (1210.25)	1765.14 (172.15)	20.2	52.3
rc202_21	100	21	12619.08 (1182.24)	10832.54 (1)	14091.25 (1)	4287.41 (203.03)	8331.66 (1289.58)	1376.51 (256.7)	17.4	39
rc203_21	100	21	7327.74 (256.23)	6795.61 (1)	7624.51 (1)	4265.63 (201.23)	3062.11 (381.72)	1702.94 (106.99)	18.5	41.4
rc204_21	100	21	4738.89 (360.52)	4299.87 (1)	5185.62 (5)	4343.21 (161.62)	395.68 (325.85)	2008.24 (161.59)	19.4	50.2
rc205_21	100	21	10514.14 (1168.16)	8813.9 (1)	12805.5 (1)	4422.27 (135.31)	6091.86 (1164.6)	1925.6 (123.65)	19.8	58.9
rc206_21	100	21	11239.72 (1298.33)	9447.4 (1)	13465.65 (1)	4321.56 (177.97)	6918.16 (1378.34)	1610.74 (119.45)	18.5	47.7
rc207_21	100	21	6731.15 (428.11)	5973.09 (1)	7626.14 (1)	4313.52 (118.03)	2417.64 (388.03)	1710.77 (96.62)	19.8	49
rc208_21	100	21	4633.86 (319.93)	3898.0 (1)	4968.95 (7)	4152.63 (182.83)	481.23 (272.49)	1828.47 (207.74)	20.4	36.1

Table B.44: Results for MOHF-VRP-STW obtained by ACOLS on the instance set $\mathcal{I}_2$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101_21	100	21	6619.16 (832.57)	5614.58 (1)	7635.96 (1)	3558.38 (204.26)	3060.79 (772.41)	1890.28 (295.04)	21.2	56.2
c102_21	100	21	4500.17 (535.08)	3988.03 (1)	5677.98 (1)	3462.67 (428.89)	1037.49 (333.82)	1782.39 (140.68)	20.9	39
c103_21	100	21	3556.74 (285.31)	2917.77 (1)	3888.53 (1)	3038.76 (280.15)	517.99 (216.78)	1730.87 (265.93)	20.8	31.3
c104_21	100	21	2849.12 (151.5)	2590.66 (1)	3109.04 (1)	2685.54 (148.07)	163.58 (113.54)	1291.24 (192.15)	19	11.2
c105_21	100	21	5247.13 (703.62)	3710.08 (1)	6012.12 (1)	3256.1 (269.46)	1991.03 (893.3)	1789.4 (207.76)	20.3	37.2
c106_21	100	21	4117.17 (412.92)	3335.82 (1)	4751.06 (1)	3085.37 (312.17)	1031.8 (470.47)	1658.01 (272.85)	20.1	30.5
c107_21	100	21	4492.35 (588.3)	3637.03 (1)	5770.1 (1)	3196.05 (296.15)	1296.31 (652.92)	1770.28 (300.49)	20.8	37.4
c108_21	100	21	4013.41 (509.06)	3388.64 (1)	4755.54 (1)	3044.82 (218.17)	968.59 (458.24)	1666.4 (200.46)	20.1	31.6
c109_21	100	21	3187.89 (107.76)	3051.33 (1)	3379.41 (1)	3016.65 (133.19)	171.24 (108.39)	1626.7 (187.99)	20.4	26.1
c201_21	100	21	4815.76 (682.88)	3814.85 (1)	6188.45 (1)	3977.04 (302.24)	838.73 (574.0)	1608.08 (383.24)	20.4	37.5
c202_21	100	21	3816.43 (273.91)	3353.99 (1)	4286.05 (1)	3498.19 (191.21)	318.24 (296.67)	1395.42 (150.75)	20.2	29.2
c203_21	100	21	3359.0 (219.55)	2955.06 (1)	3639.06 (1)	3292.05 (225.95)	66.95 (76.62)	1406.94 (205.57)	18.6	17.8
c204_21	100	21	2691.01 (219.39)	2255.76 (1)	3079.32 (1)	2647.07 (225.84)	43.95 (111.37)	1107.79 (88.07)	17.8	11.5
c205_21	100	21	3817.72 (292.13)	3528.09 (1)	4493.26 (1)	3559.48 (271.1)	258.24 (138.07)	1603.83 (166.32)	19.7	33.3
c206_21	100	21	3515.77 (203.02)	3254.4 (1)	3861.91 (1)	3458.16 (189.49)	57.61 (50.73)	1470.05 (188.73)	19	24.1
c207_21	100	21	3474.44 (178.19)	3232.89 (1)	3780.67 (1)	3400.81 (233.87)	73.63 (85.35)	1351.59 (113.32)	18.3	20.9
c208_21	100	21	3397.36 (250.91)	3053.86 (1)	3908.73 (1)	3244.16 (161.58)	153.2 (272.78)	1351.89 (242.46)	18.3	24.4
r101_21	100	21	6038.41 (928.16)	5040.32 (1)	8287.32 (1)	2488.46 (95.38)	3549.95 (959.74)	1437.31 (199.09)	21.2	39.3
r102_21	100	21	4801.43 (770.99)	3792.48 (1)	6644.47 (1)	2426.22 (175.79)	2375.21 (853.28)	1401.7 (174.31)	21.6	34.8
r103_21	100	21	4167.05 (603.16)	3589.85 (1)	5629.21 (1)	2299.54 (250.51)	1867.51 (543.9)	1289.52 (229.47)	19.1	30.7
r104_21	100	21	3171.62 (455.68)	2471.53 (1)	3872.95 (1)	2029.73 (209.53)	1141.89 (392.5)	1063.58 (265.76)	18.2	19.5
r105_21	100	21	5125.77 (268.28)	4591.94 (1)	5542.52 (1)	2470.09 (211.33)	2655.68 (358.9)	1398.6 (165.48)	20.6	43.3
r106_21	100	21	4257.31 (331.8)	3680.91 (1)	4625.04 (1)	2472.48 (267.66)	1784.83 (411.5)	1360.73 (251.61)	22.1	32.5
r107_21	100	21	3331.8 (443.0)	2518.84 (1)	3971.72 (1)	2300.96 (197.31)	1030.84 (573.68)	1260.71 (181.91)	20.7	29.5
r108_21	100	21	3151.98 (255.94)	2825.11 (1)	3484.9 (1)	2238.05 (221.8)	913.93 (261.98)	1307.5 (229.67)	20.3	21.2
r109_21	100	21	3890.91 (353.42)	3347.44 (1)	4557.36 (1)	2406.57 (233.49)	1484.34 (265.12)	1229.02 (97.3)	21.1	36
r110_21	100	21	3413.7 (437.17)	2715.14 (1)	4084.6 (1)	2294.44 (223.66)	1119.25 (455.45)	1126.26 (203.79)	20.2	26.1
r111_21	100	21	3489.35 (174.13)	3138.47 (1)	3738.63 (1)	2381.04 (175.35)	1108.31 (303.05)	1331.66 (168.42)	20.8	28.8
r112_21	100	21	3012.81 (189.07)	2755.17 (1)	3292.29 (1)	2293.36 (213.03)	719.45 (220.47)	1221.25 (195.03)	20.4	25.8
r201_21	100	21	3277.45 (316.86)	2909.05 (1)	3816.13 (1)	2939.61 (116.89)	337.83 (266.54)	1033.71 (111.7)	18.2	30.7
r202_21	100	21	2774.16 (133.26)	2485.65 (1)	2949.7 (1)	2657.12 (97.57)	117.05 (85.89)	835.15 (102.42)	17.1	24.3
r203_21	100	21	2609.72 (119.17)	2420.92 (1)	2794.23 (1)	2538.8 (124.69)	70.92 (67.08)	858.11 (171.2)	16.1	11.3
r204_21	100	21	2315.67 (144.79)	2131.0 (1)	2548.89 (1)	2303.95 (142.48)	11.73 (11.51)	620.66 (118.23)	14.1	11.7
r205_21	100	21	2809.8 (351.33)	2419.82 (1)	3692.65 (1)	2688.46 (172.58)	121.34 (247.03)	937.85 (144.14)	17.1	20.7
r206_21	100	21	2624.62 (146.05)	2359.74 (1)	2819.71 (1)	2576.2 (142.6)	48.42 (34.75)	973.93 (160.48)	17.8	14.3
r207_21	100	21	2334.26 (183.68)	2165.43 (1)	2709.1 (1)	2308.17 (177.53)	26.09 (38.41)	635.52 (79.99)	14.9	17.3
r208_21	100	21	2055.96 (179.33)	1816.0 (1)	2331.77 (1)	2055.06 (178.69)	0.9 (2.55)	709.91 (96.69)	14.7	7.2
r209_21	100	21	2571.76 (146.41)	2336.2 (1)	2807.85 (1)	2527.93 (156.7)	43.84 (35.35)	900.95 (118.8)	16.8	13.6
r210_21	100	21	2598.91 (189.44)	2297.4 (1)	2931.5 (1)	2553.01 (174.56)	45.9 (48.81)	859.36 (82.11)	17.2	14.5
r211_21	100	21	2453.11 (166.29)	2187.89 (1)	2778.3 (1)	2414.42 (141.7)	38.7 (37.5)	746.21 (202.81)	15.4	15.6
rc101_21	100	21	6434.81 (847.54)	5054.55 (1)	7691.56 (1)	2999.04 (218.09)	3435.76 (827.89)	1778.85 (177.99)	21	31.1
rc102_21	100	21	5795.88 (507.34)	5037.59 (1)	6522.83 (1)	3024.69 (337.16)	2771.2 (656.24)	1790.89 (360.82)	21.5	35.5
rc103_21	100	21	4596.6 (484.7)	3840.75 (1)	5211.89 (1)	2745.28 (243.62)	1851.32 (439.65)	1539.1 (239.31)	19.9	27
rc104_21	100	21	3943.57 (434.49)	3266.29 (1)	4884.79 (1)	2520.4 (161.5)	1423.17 (492.79)	1344.53 (178.01)	18.9	14.7
rc105_21	100	21	5709.67 (279.93)	5274.08 (1)	6348.39 (1)	3104.66 (244.15)	2605.01 (489.57)	1911.96 (161.19)	22.4	23.4
rc106_21	100	21	5552.03 (554.06)	5001.15 (1)	6466.72 (1)	3055.58 (106.51)	2496.45 (562.77)	1867.85 (167.32)	22	28.1
rc107_21	100	21	4635.12 (614.35)	3810.46 (1)	5313.79 (1)	2794.67 (348.79)	1840.45 (470.34)	1607.69 (300.59)	20.5	20.8
rc108_21	100	21	4171.89 (401.71)	3603.7 (1)	4883.68 (1)	2701.33 (216.79)	1470.56 (409.71)	1527.13 (204.46)	19.8	15.3
rc201_21	100	21	4640.17 (488.22)	3955.55 (1)	5501.3 (1)	3863.19 (214.5)	776.99 (520.69)	1403.52 (195.89)	18.4	36.7
rc202_21	100	21	3889.13 (249.06)	3650.71 (1)	4521.81 (1)	3605.0 (237.51)	284.12 (157.85)	1153.73 (144.99)	16.9	23.7
rc203_21	100	21	3364.21 (142.56)	3142.0 (1)	3622.98 (1)	3310.16 (163.9)	54.06 (63.39)	1231.09 (105.09)	17.7	14.4
rc204_21	100	21	3117.68 (199.24)	2885.34 (1)	3580.83 (1)	3073.89 (187.52)	43.78 (50.91)	1108.3 (239.48)	17.6	6.5
rc205_21	100	21	3895.98 (268.45)	3623.24 (1)	4540.16 (1)	3651.66 (195.96)	244.33 (192.19)	1385.66 (107.35)	17.8	25.7
rc206_21	100	21	3675.4 (175.79)	3375.61 (1)	3992.47 (1)	3486.6 (124.28)	188.8 (138.76)	1321.2 (191.31)	18.1	23.6
rc207_21	100	21	3493.85 (210.37)	3214.4 (1)	3885.37 (1)	3443.83 (200.09)	50.01 (34.25)	1324.22 (133.32)	17.7	20.5
rc208_21	100	21	3325.44 (208.97)	3126.01 (1)	3768.75 (1)	3272.47 (196.93)	52.97 (57.07)	1389.22 (152.32)	18.5	14.1

Table B.45: Results for MOHF-VRP-STW obtained by BCOi on the instance set $\mathcal{I}_2$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Dist. EV (σ)**	**Dist. ICV (σ)**	**Penalty (σ)**		
c101_21	100	21	5517.38 (199.15)	5271.7 (1)	5841.85 (1)	4283.74 (153.87)	1233.64 (253.99)	3317.88 (97.44)	49.7	33.3
c102_21	100	21	4501.08 (108.94)	4364.65 (1)	4644.1 (5)	4288.09 (125.94)	212.99 (78.41)	3267.46 (142.91)	49.4	28.9
c103_21	100	21	4059.35 (127.9)	3813.03 (1)	4228.02 (1)	4002.42 (144.5)	56.93 (39.68)	2937.54 (168.03)	48.3	30.2
c104_21	100	21	3738.11 (69.36)	3621.75 (1)	3850.74 (1)	3720.58 (66.27)	17.53 (18.05)	2461.74 (106.21)	45.8	14.7
c105_21	100	21	4812.88 (209.6)	4505.63 (1)	5206.08 (1)	4257.07 (172.2)	555.81 (188.7)	3326.57 (131.69)	49.6	29.1
c106_21	100	21	4595.46 (174.14)	4405.32 (6)	4858.72 (1)	4316.28 (102.57)	279.17 (194.62)	3204.48 (113.22)	49.1	41.3
c107_21	100	21	4676.51 (174.23)	4356.35 (1)	4877.29 (6)	4281.92 (126.86)	394.59 (192.68)	3341.5 (194.77)	49.5	26.4
c108_21	100	21	4373.59 (143.43)	4198.56 (5)	4668.75 (1)	4213.51 (154.31)	160.08 (110.45)	3213.16 (124.59)	49.6	26
c109_21	100	21	4057.83 (125.76)	3846.59 (1)	4246.78 (1)	3942.93 (135.3)	114.9 (101.59)	3021.06 (112.27)	48.1	33.2
c201_21	100	21	4981.67 (281.98)	4502.08 (1)	5394.25 (1)	4438.98 (78.18)	542.69 (265.63)	3432.01 (136.89)	49.4	28.8
c202_21	100	21	4510.28 (122.96)	4330.25 (1)	4704.69 (1)	4458.82 (120.23)	51.46 (52.7)	3302.05 (135.45)	48.6	27.4
c203_21	100	21	4324.71 (69.58)	4252.69 (1)	4480.32 (1)	4277.56 (41.1)	47.15 (63.62)	2931.7 (190.68)	47.7	17.3
c204_21	100	21	4257.17 (514.18)	3797.13 (1)	5171.44 (4)	4134.66 (315.78)	122.51 (227.95)	2076.5 (201.47)	34.6	2
c205_21	100	21	4657.01 (152.94)	4479.49 (1)	4868.64 (1)	4423.77 (122.04)	233.23 (162.16)	3475.5 (130.65)	49.2	27.7
c206_21	100	21	4358.35 (133.23)	4174.57 (1)	4564.99 (1)	4305.86 (117.18)	52.49 (91.77)	3225.31 (189.36)	49	14
c207_21	100	21	4351.29 (158.2)	4158.29 (1)	4575.07 (7)	4248.23 (115.66)	103.06 (174.39)	3172.26 (186.93)	48.9	15.4
c208_21	100	21	4351.89 (91.11)	4261.43 (1)	4529.42 (1)	4292.34 (106.31)	59.55 (42.79)	3199.1 (198.87)	49.1	14
r101_21	100	21	4135.03 (144.21)	3927.86 (1)	4373.26 (1)	3415.0 (118.1)	720.03 (163.95)	2687.33 (78.39)	49.5	25
r102_21	100	21	3660.11 (90.0)	3531.9 (1)	3830.64 (1)	3316.22 (83.62)	343.89 (95.95)	2553.63 (78.75)	48.8	17.1
r103_21	100	21	3467.0 (52.38)	3356.73 (1)	3549.73 (1)	3281.03 (91.27)	185.97 (62.33)	2483.15 (106.39)	48	36.1
r104_21	100	21	3229.67 (71.67)	3080.98 (1)	3308.34 (1)	3155.82 (64.71)	73.85 (36.19)	2345.6 (66.26)	46.3	28.4
r105_21	100	21	3808.58 (107.55)	3648.08 (1)	3924.13 (1)	3403.78 (120.49)	404.8 (112.49)	2611.11 (81.51)	49	43.1
r106_21	100	21	3557.1 (72.98)	3435.68 (1)	3668.97 (1)	3310.17 (40.04)	246.93 (85.97)	2514.09 (49.87)	48.1	17.9
r107_21	100	21	3387.32 (63.46)	3255.61 (1)	3435.84 (1)	3252.3 (48.83)	135.02 (67.53)	2444.55 (132.22)	48.1	2.2
r108_21	100	21	3147.43 (81.36)	3060.5 (1)	3322.13 (1)	3090.25 (54.44)	57.18 (40.04)	2271.82 (63.52)	46.5	2
r109_21	100	21	3435.2 (114.47)	3283.89 (6)	3605.25 (1)	3221.71 (95.23)	213.48 (79.38)	2419.36 (49.02)	48.4	15
r110_21	100	21	3222.7 (52.76)	3121.69 (1)	3293.29 (1)	3121.57 (73.03)	101.14 (46.47)	2270.5 (86.74)	46.1	2
r111_21	100	21	3246.06 (68.84)	3157.78 (1)	3329.19 (1)	3167.42 (79.23)	78.64 (51.85)	2333.95 (63.64)	48.1	30.5
r112_21	100	21	3109.97 (31.09)	3068.35 (1)	3177.37 (1)	3082.05 (38.45)	27.91 (22.54)	2217.76 (89.18)	45.3	24.1
r201_21	100	21	3792.24 (90.64)	3647.65 (1)	3882.4 (1)	3591.34 (75.12)	200.9 (130.43)	2531.16 (137.32)	49.6	45.5
r202_21	100	21	3680.64 (202.97)	3367.06 (1)	4026.68 (1)	3569.59 (161.57)	111.06 (122.84)	2145.24 (157.21)	47	30.4
r203_21	100	21	3502.52 (63.49)	3366.74 (1)	3583.23 (1)	3471.94 (67.66)	30.57 (33.42)	2074.0 (112.49)	44.7	23.3
r204_21	100	21	3308.91 (125.28)	3171.29 (1)	3510.26 (1)	3283.16 (115.46)	25.75 (27.61)	1530.99 (107.12)	37.2	2
r205_21	100	21	3699.6 (264.1)	3502.75 (4)	4399.66 (1)	3523.72 (76.93)	175.88 (245.86)	2264.08 (216.65)	46.4	34.2
r206_21	100	21	3726.94 (414.76)	3182.19 (1)	4493.14 (1)	3493.31 (224.17)	233.63 (300.22)	1958.09 (223.62)	41.7	29.8
r207_21	100	21	3336.36 (69.14)	3274.73 (7)	3477.48 (1)	3308.96 (63.18)	27.4 (29.25)	1756.51 (115.0)	41	14.1
r208_21	100	21	3242.26 (74.15)	3152.97 (1)	3433.52 (1)	3236.65 (75.11)	5.62 (8.35)	1476.39 (45.95)	35.5	2
r209_21	100	21	3609.9 (488.03)	3333.91 (1)	4986.93 (1)	3433.4 (133.48)	176.5 (383.0)	1973.02 (254.42)	43.1	29
r210_21	100	21	3498.65 (70.95)	3412.45 (1)	3664.8 (1)	3467.62 (65.3)	31.04 (31.0)	1936.72 (183.35)	43.4	22.5
r211_21	100	21	3361.23 (258.01)	3183.33 (1)	4070.68 (1)	3241.3 (121.77)	119.93 (165.75)	1543.4 (144.14)	36.3	2
rc101_21	100	21	5033.77 (83.41)	4856.26 (1)	5152.09 (1)	4206.17 (147.44)	827.61 (148.33)	3275.47 (122.02)	49.3	35.4
rc102_21	100	21	4502.71 (109.41)	4303.45 (1)	4674.18 (1)	4116.72 (110.16)	386.0 (144.93)	3244.3 (104.69)	49.4	8.4
rc103_21	100	21	4220.03 (101.94)	4054.82 (1)	4381.78 (4)	4042.39 (115.72)	177.64 (47.42)	3097.69 (92.22)	48.1	26.5
rc104_21	100	21	4074.76 (53.74)	3999.85 (1)	4145.37 (1)	3950.44 (42.72)	124.33 (48.37)	2962.78 (57.86)	46.6	24.1
rc105_21	100	21	4528.59 (95.16)	4391.85 (1)	4649.34 (1)	4019.6 (102.27)	508.99 (154.57)	3066.46 (129.24)	47.9	2
rc106_21	100	21	4461.12 (91.73)	4358.2 (1)	4630.12 (1)	4079.58 (95.22)	381.54 (121.25)	3081.97 (104.96)	48.6	25.6
rc107_21	100	21	4180.29 (99.08)	4032.7 (1)	4307.86 (5)	4012.92 (90.14)	167.37 (70.79)	2974.63 (81.53)	47.2	20.1
rc108_21	100	21	4025.44 (72.1)	3894.72 (1)	4174.05 (1)	3896.13 (72.49)	129.31 (33.16)	2935.76 (82.13)	46.8	24.7
rc201_21	100	21	4908.8 (136.79)	4690.68 (6)	5062.89 (1)	4691.68 (134.02)	217.13 (159.33)	3327.35 (104.4)	48.6	30.2
rc202_21	100	21	4626.61 (93.03)	4534.53 (4)	4767.15 (1)	4465.21 (91.52)	161.4 (103.72)	2934.78 (162.72)	48.5	24.2
rc203_21	100	21	4359.6 (124.94)	4279.61 (1)	4701.45 (1)	4265.01 (102.18)	94.59 (101.84)	2573.55 (112.95)	42.6	17.2
rc204_21	100	21	4272.07 (153.27)	4068.25 (1)	4553.0 (1)	4253.59 (153.86)	18.48 (21.22)	2090.51 (134.67)	38.4	2
rc205_21	100	21	4663.29 (107.39)	4530.76 (1)	4891.45 (1)	4539.82 (137.12)	123.47 (96.67)	2916.28 (199.8)	47.9	20.9
rc206_21	100	21	4617.85 (166.5)	4373.92 (1)	4915.21 (1)	4537.82 (147.78)	80.04 (72.1)	2904.32 (182.77)	47.7	19.7
rc207_21	100	21	4313.23 (127.07)	4158.52 (1)	4525.8 (1)	4225.84 (145.94)	87.39 (127.1)	2449.37 (91.15)	43.5	16.2
rc208_21	100	21	4140.46 (137.34)	3969.2 (4)	4363.17 (1)	4073.89 (110.55)	66.57 (61.47)	1994.55 (116.65)	38.3	2

Table B.46: Results for MOHF-VRP-STW obtained by GA on the instance set $\mathcal{I}_2$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	Min (n_{min})	Max (n_{max})	Dist. EV (σ)	Dist. ICV (σ)	Penalty (σ)		
c101_21	100	21	3270.44 (330.42)	2863.46 (1)	4095.63 (1)	2979.11 (180.65)	291.33 (233.91)	1589.31 (120.12)	32	20.7
c102_21	100	21	3168.69 (268.68)	2768.26 (1)	3704.79 (1)	2954.19 (202.59)	214.5 (104.39)	1423.14 (112.63)	29.6	22.3
c103_21	100	21	3031.87 (165.04)	2763.52 (1)	3363.15 (1)	2854.37 (166.65)	177.49 (115.64)	1172.69 (152.86)	25.6	21.1
c104_21	100	21	2963.42 (205.92)	2743.89 (1)	3305.04 (1)	2893.13 (203.39)	70.28 (49.25)	871.33 (140.77)	21.2	21.8
c105_21	100	21	3042.68 (272.96)	2835.79 (7)	3561.48 (1)	2852.0 (202.03)	190.68 (131.5)	1441.21 (169.32)	29.2	23.6
c106_21	100	21	2999.9 (267.07)	2483.33 (1)	3400.93 (1)	2816.72 (187.01)	183.19 (153.09)	1326.37 (179.46)	28.3	21
c107_21	100	21	2982.04 (269.74)	2470.95 (1)	3460.39 (1)	2793.68 (292.27)	188.36 (62.65)	1325.18 (230.9)	28.3	20.4
c108_21	100	21	2848.94 (31.05)	2811.33 (1)	2906.64 (1)	2727.76 (105.51)	121.18 (83.56)	1223.02 (106.57)	26.8	23.4
c109_21	100	21	2910.8 (116.16)	2657.05 (1)	3065.35 (1)	2822.98 (123.99)	87.82 (29.03)	1218.5 (126.13)	25.2	16.9
c201_21	100	21	2900.67 (247.56)	2464.23 (1)	3236.56 (1)	2728.04 (193.96)	172.63 (105.02)	837.11 (145.27)	21.3	17.3
c202_21	100	21	2834.0 (172.51)	2592.39 (1)	3172.07 (1)	2774.55 (148.89)	59.45 (63.41)	727.95 (85.4)	20.2	16.8
c203_21	100	21	2940.05 (304.94)	2602.38 (1)	3551.55 (1)	2904.47 (318.43)	35.59 (37.76)	675.49 (159.86)	19.4	16.2
c204_21	100	21	3015.94 (95.75)	2908.73 (1)	3253.54 (1)	2999.09 (59.07)	16.85 (43.46)	565.19 (71.95)	17.9	12.2
c205_21	100	21	2840.06 (181.78)	2528.29 (1)	3103.41 (1)	2714.68 (150.41)	125.38 (112.62)	686.41 (79.65)	19.6	17.9
c206_21	100	21	2844.67 (153.06)	2578.36 (1)	3138.69 (1)	2792.47 (148.92)	52.2 (35.08)	709.38 (136.23)	19.9	17.6
c207_21	100	21	2769.71 (167.18)	2424.93 (1)	3029.08 (1)	2744.34 (164.35)	25.37 (18.79)	596.07 (85.12)	18.6	15.9
c208_21	100	21	2914.96 (216.46)	2562.83 (1)	3234.46 (1)	2859.88 (199.96)	55.08 (59.51)	695.42 (95.9)	19.4	17.1
r101_21	100	21	3157.65 (201.37)	2954.34 (1)	3625.01 (1)	2385.98 (185.75)	771.67 (211.77)	1310.36 (193.13)	31.2	33.7
r102_21	100	21	2821.6 (125.51)	2689.5 (1)	3016.47 (1)	2260.05 (194.79)	561.54 (162.53)	1174.91 (227.21)	28.3	27.7
r103_21	100	21	2598.5 (189.7)	2376.67 (1)	2982.36 (1)	2131.65 (172.73)	466.85 (121.68)	1039.71 (161.45)	26.2	28.7
r104_21	100	21	2388.91 (159.31)	2171.97 (1)	2730.47 (1)	2031.09 (100.21)	357.82 (89.3)	922.76 (111.59)	23.2	26.6
r105_21	100	21	2846.11 (183.95)	2663.45 (1)	3235.6 (1)	2234.84 (142.53)	611.28 (124.76)	1140.12 (119.4)	28.4	29.1
r106_21	100	21	2789.91 (149.04)	2540.58 (1)	3019.59 (1)	2249.8 (140.49)	540.11 (144.74)	1118.11 (161.61)	27.4	31.8
r107_21	100	21	2566.81 (165.75)	2366.41 (1)	2898.88 (1)	2126.63 (118.24)	440.19 (181.72)	992.42 (171.88)	24.6	31
r108_21	100	21	2299.09 (111.44)	2083.5 (1)	2460.96 (1)	1981.67 (123.72)	317.42 (100.72)	880.09 (110.49)	23.2	29.7
r109_21	100	21	2668.85 (205.88)	2420.82 (1)	3038.42 (1)	2125.39 (141.65)	543.46 (232.79)	1008.87 (163.08)	26.5	28.3
r110_21	100	21	2345.45 (165.91)	2159.64 (7)	2702.15 (1)	2021.11 (97.51)	324.33 (139.66)	924.37 (74.14)	25.2	21.7
r111_21	100	21	2596.02 (205.88)	2343.54 (1)	2899.93 (6)	2246.73 (200.53)	349.29 (107.97)	1118.67 (194.36)	25.9	30.8
r112_21	100	21	2439.02 (262.59)	2120.92 (1)	2965.99 (1)	2074.8 (167.26)	364.22 (152.49)	907.59 (152.5)	24	29
r201_21	100	21	2748.13 (323.81)	2405.44 (1)	3394.57 (1)	2560.59 (180.79)	187.54 (167.1)	594.26 (167.73)	21.1	18.5
r202_21	100	21	2687.55 (142.82)	2448.14 (1)	3015.07 (1)	2607.45 (115.17)	80.1 (61.41)	460.06 (108.21)	19.2	16.1
r203_21	100	21	2676.55 (169.25)	2473.84 (1)	3012.1 (1)	2620.68 (149.78)	55.87 (46.35)	439.49 (134.32)	17.8	16.9
r204_21	100	21	2667.84 (117.07)	2544.25 (7)	2877.39 (1)	2620.72 (117.23)	47.13 (49.89)	335.94 (111.77)	17.7	14
r205_21	100	21	2694.22 (130.08)	2554.91 (1)	3031.42 (1)	2636.86 (148.6)	57.36 (59.26)	520.8 (295.8)	20	15.6
r206_21	100	21	2594.16 (225.82)	2264.3 (1)	2914.57 (1)	2522.43 (179.84)	71.73 (88.3)	346.39 (67.45)	17.2	14
r207_21	100	21	2703.85 (115.98)	2516.05 (1)	2837.4 (7)	2654.63 (109.03)	49.22 (29.71)	340.52 (142.49)	17.2	11.7
r208_21	100	21	2592.61 (110.86)	2431.89 (1)	2799.98 (1)	2569.71 (86.51)	22.9 (30.96)	287.88 (97.64)	16.7	13.1
r209_21	100	21	2617.83 (165.03)	2418.02 (1)	2846.2 (1)	2550.5 (154.38)	67.33 (74.25)	453.24 (181.29)	18.6	14
r210_21	100	21	2615.14 (181.74)	2432.72 (5)	3027.9 (1)	2542.0 (163.34)	73.15 (58.54)	432.04 (73.94)	18.2	18.9
r211_21	100	21	2860.22 (121.46)	2723.17 (1)	3131.17 (1)	2768.17 (96.8)	92.05 (54.86)	370.4 (148.95)	17.5	15.5
rc101_21	100	21	3579.31 (266.91)	3119.15 (1)	3974.97 (1)	2561.27 (136.33)	1018.03 (266.44)	1318.13 (119.27)	27.1	32.2
rc102_21	100	21	3341.35 (210.23)	3100.23 (1)	3760.08 (1)	2618.43 (203.22)	722.91 (194.95)	1336.11 (217.5)	26.8	33
rc103_21	100	21	3144.56 (214.4)	2801.7 (1)	3435.91 (1)	2455.26 (146.47)	689.29 (204.2)	1135.99 (169.36)	24.7	33.9
rc104_21	100	21	2987.2 (198.36)	2702.02 (1)	3344.69 (1)	2581.19 (263.25)	406.01 (154.46)	1337.51 (315.48)	25.6	25.8
rc105_21	100	21	3237.95 (239.8)	2773.68 (1)	3521.27 (1)	2596.66 (211.25)	641.29 (232.18)	1300.23 (226.15)	27	36.9
rc106_21	100	21	3219.55 (112.19)	2971.73 (1)	3339.12 (1)	2548.66 (152.95)	670.9 (100.34)	1265.86 (195.45)	26.4	28.6
rc107_21	100	21	3060.24 (268.34)	2691.75 (1)	3559.04 (1)	2655.87 (209.24)	404.37 (102.29)	1356.7 (193.98)	26.8	23.9
rc108_21	100	21	2893.49 (213.7)	2624.6 (1)	3269.0 (1)	2390.03 (169.17)	503.45 (83.67)	1071.57 (126.33)	23.6	24.2
rc201_21	100	21	3316.94 (220.49)	3087.32 (1)	3698.0 (1)	3120.61 (144.54)	196.33 (168.89)	813.67 (176.14)	21.9	18.2
rc202_21	100	21	3430.95 (381.91)	2780.64 (1)	4011.59 (1)	3278.58 (350.0)	152.37 (85.2)	622.97 (147.99)	19.8	18.8
rc203_21	100	21	3215.81 (249.68)	2895.17 (1)	3717.12 (1)	3096.77 (230.31)	119.05 (119.11)	529.98 (111.41)	18.1	18
rc204_21	100	21	3406.12 (144.23)	3104.91 (1)	3565.92 (1)	3315.36 (141.76)	90.76 (72.4)	629.39 (130.83)	17.8	15.8
rc205_21	100	21	3506.86 (283.86)	3154.97 (1)	4025.73 (1)	3201.08 (177.89)	305.78 (176.69)	648.16 (202.06)	18.7	16.1
rc206_21	100	21	3319.85 (145.8)	3138.19 (6)	3540.35 (1)	3107.34 (98.82)	212.51 (151.25)	546.34 (103.22)	19.1	17.3
rc207_21	100	21	3184.17 (347.64)	2754.05 (7)	3636.61 (1)	3058.06 (254.57)	126.12 (162.74)	439.56 (118.73)	17.1	13.7
rc208_21	100	21	3315.95 (301.56)	2892.88 (1)	3892.17 (1)	3229.49 (236.32)	86.46 (94.3)	520.4 (142.19)	17.5	13.9

TABLE B.47: Results for MOHF-VRP-STW obtained by MA on the instance set $\mathcal{I}_2$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (σ)	**Min (n_{min})**	**Max (n_{max})**	**Dist. EV (σ)**	**Dist. ICV (σ)**	**Penalty (σ)**		
c101_21	100	21	1632.82 (158.43)	1361.82 (1)	1842.41 (1)	1628.02 (158.71)	4.81 (8.72)	1145.25 (111.77)	24.3	11.4
c102_21	100	21	1652.13 (173.04)	1374.61 (1)	1908.49 (1)	1645.04 (170.31)	7.09 (11.81)	1035.49 (172.67)	25.2	14.1
c103_21	100	21	1527.46 (109.32)	1398.3 (1)	1752.27 (1)	1525.74 (110.17)	1.71 (3.0)	1011.05 (130.62)	23	15.8
c104_21	100	21	1326.72 (151.59)	1034.04 (1)	1503.95 (1)	1320.2 (148.61)	6.52 (15.13)	799.17 (116.76)	19.8	13.8
c105_21	100	21	1559.45 (152.99)	1389.25 (1)	1859.54 (1)	1553.43 (147.41)	6.02 (9.13)	1066.32 (154.08)	24.2	10.6
c106_21	100	21	1550.69 (171.83)	1236.87 (1)	1838.92 (1)	1545.36 (174.33)	5.34 (6.06)	1051.7 (173.23)	23	14.6
c107_21	100	21	1528.06 (94.58)	1321.25 (1)	1646.27 (1)	1508.64 (96.26)	19.41 (9.01)	965.95 (74.41)	21.9	14.7
c108_21	100	21	1500.15 (130.64)	1328.11 (1)	1736.23 (1)	1499.76 (130.45)	0.39 (0.76)	897.55 (116.76)	21.7	16.7
c109_21	100	21	1406.29 (141.72)	1246.73 (1)	1647.99 (1)	1405.67 (141.04)	0.62 (1.96)	851.94 (117.37)	21.8	13.9
c201_21	100	21	1458.24 (75.94)	1352.61 (1)	1559.17 (1)	1458.24 (75.94)	0.0 (0.0)	914.08 (166.65)	20.6	10.4
c202_21	100	21	1543.59 (135.85)	1327.8 (1)	1826.17 (1)	1543.59 (135.85)	0.0 (0.0)	840.31 (158.15)	22.4	11.1
c203_21	100	21	1442.5 (96.89)	1236.17 (1)	1598.69 (1)	1442.5 (96.89)	0.0 (0.0)	719.75 (147.42)	20.2	8
c204_21	100	21	1298.97 (139.1)	1127.6 (1)	1513.4 (1)	1298.97 (139.1)	0.0 (0.0)	560.2 (146.23)	17.8	6.8
c205_21	100	21	1470.86 (121.76)	1250.6 (1)	1657.37 (1)	1470.86 (121.76)	0.0 (0.0)	721.58 (148.56)	21.6	11.9
c206_21	100	21	1457.73 (116.25)	1246.98 (1)	1643.07 (1)	1457.64 (116.19)	0.09 (0.24)	776.28 (193.4)	21.2	7.3
c207_21	100	21	1453.9 (92.17)	1309.57 (1)	1576.03 (1)	1453.9 (92.17)	0.0 (0.0)	802.87 (146.52)	20.8	13.2
c208_21	100	21	1498.58 (117.6)	1298.1 (1)	1686.4 (1)	1498.58 (117.6)	0.0 (0.0)	805.58 (124.19)	20.9	13.5
r101_21	100	21	1933.98 (105.73)	1747.96 (1)	2092.91 (1)	1811.83 (101.96)	122.16 (46.37)	1254.36 (124.24)	26.7	27.8
r102_21	100	21	1713.85 (51.93)	1662.95 (1)	1803.83 (1)	1630.84 (51.02)	83.01 (38.12)	1157.59 (124.42)	24.1	34.4
r103_21	100	21	1625.24 (85.12)	1474.15 (1)	1736.77 (1)	1579.53 (84.61)	45.71 (26.9)	1062.75 (89.21)	24	25.8
r104_21	100	21	1476.62 (100.18)	1272.42 (1)	1616.95 (1)	1453.5 (108.29)	23.12 (24.52)	862.95 (86.24)	22.4	19
r105_21	100	21	1753.3 (100.82)	1574.91 (1)	1944.94 (1)	1667.63 (98.7)	85.68 (24.11)	1055.23 (75.4)	24.4	28.5
r106_21	100	21	1702.77 (88.13)	1604.49 (1)	1856.51 (1)	1654.14 (90.85)	48.62 (31.52)	1068.95 (83.15)	25.1	24.9
r107_21	100	21	1561.88 (115.73)	1429.31 (1)	1758.51 (1)	1526.37 (98.6)	35.51 (27.53)	1047.97 (130.19)	22.7	19.8
r108_21	100	21	1463.39 (134.55)	1223.87 (1)	1606.57 (1)	1439.67 (130.54)	23.72 (20.25)	876.23 (140.08)	22.3	24.8
r109_21	100	21	1659.16 (76.63)	1511.17 (1)	1770.02 (1)	1629.01 (75.46)	30.15 (13.55)	1074.7 (99.39)	24.9	24.4
r110_21	100	21	1564.57 (108.79)	1367.24 (1)	1715.27 (1)	1539.35 (121.64)	25.21 (39.51)	976.7 (122.37)	22.7	19.6
r111_21	100	21	1598.15 (101.03)	1461.51 (1)	1761.72 (1)	1566.76 (102.28)	31.39 (22.51)	950.57 (117.1)	22.7	22.9
r112_21	100	21	1552.82 (71.13)	1469.23 (1)	1688.99 (1)	1545.6 (67.96)	7.22 (7.27)	935.76 (80.63)	24.2	20
r201_21	100	21	1696.23 (267.72)	1439.01 (1)	2418.81 (1)	1648.2 (154.86)	48.04 (127.39)	708.75 (138.5)	19.5	15.3
r202_21	100	21	1463.49 (68.79)	1346.94 (1)	1569.64 (1)	1457.76 (67.87)	5.73 (6.42)	558.88 (87.01)	17	16.8
r203_21	100	21	1341.46 (114.32)	1136.31 (1)	1503.21 (1)	1340.75 (115.18)	0.72 (2.23)	509.97 (132.06)	16.8	11
r204_21	100	21	1160.55 (88.86)	981.49 (1)	1293.73 (1)	1160.42 (88.79)	0.13 (0.41)	370.35 (77.54)	14.5	13
r205_21	100	21	1436.41 (90.04)	1305.23 (1)	1589.6 (1)	1432.07 (89.89)	4.34 (5.94)	617.28 (105.82)	18.3	13.3
r206_21	100	21	1460.4 (96.64)	1302.15 (1)	1641.7 (1)	1459.04 (97.48)	1.36 (2.31)	619.32 (94.27)	18.3	21.4
r207_21	100	21	1273.34 (80.1)	1146.79 (1)	1375.13 (1)	1270.06 (75.68)	3.27 (7.18)	449.77 (126.02)	14.1	14.9
r208_21	100	21	1160.41 (71.22)	1058.11 (1)	1289.85 (1)	1160.36 (71.25)	0.06 (0.18)	508.6 (158.06)	13.4	17.8
r209_21	100	21	1401.15 (91.71)	1274.77 (1)	1540.53 (1)	1397.66 (95.37)	3.48 (8.31)	641.83 (127.36)	18.5	12.6
r210_21	100	21	1341.34 (68.65)	1237.21 (1)	1436.84 (1)	1340.28 (70.37)	1.06 (2.61)	538.99 (163.64)	17	16.9
r211_21	100	21	1243.91 (84.12)	1132.38 (1)	1384.05 (1)	1237.72 (84.56)	6.2 (12.47)	530.6 (144.27)	14.6	18.2
rc101_21	100	21	2231.72 (109.51)	2041.95 (1)	2382.01 (1)	2091.36 (120.48)	140.36 (56.06)	1457.54 (122.29)	25.6	34.4
rc102_21	100	21	1917.78 (89.23)	1769.86 (1)	2047.87 (1)	1856.31 (102.04)	61.46 (32.54)	1276.68 (111.02)	23.7	20.4
rc103_21	100	21	1815.88 (91.23)	1666.27 (1)	1973.04 (1)	1785.39 (96.25)	30.49 (19.39)	1233.68 (99.73)	23.1	18.3
rc104_21	100	21	1757.15 (227.42)	1377.5 (1)	2040.18 (1)	1719.4 (240.86)	37.75 (30.9)	1138.0 (148.1)	23.4	21.4
rc105_21	100	21	2016.05 (101.71)	1835.42 (1)	2168.9 (1)	1944.97 (87.63)	71.08 (35.6)	1358.72 (146.32)	25.7	21.1
rc106_21	100	21	1970.34 (154.14)	1694.61 (1)	2190.61 (1)	1931.8 (147.11)	38.55 (31.42)	1252.95 (65.68)	25.3	17.5
rc107_21	100	21	1854.48 (166.21)	1662.7 (1)	2129.93 (1)	1783.92 (144.47)	70.56 (83.97)	1169.62 (114.52)	22.6	17.6
rc108_21	100	21	1698.66 (109.76)	1552.89 (1)	1901.91 (1)	1675.9 (105.6)	22.76 (15.22)	1015.21 (114.32)	20.9	15.1
rc201_21	100	21	1853.49 (88.25)	1694.34 (1)	2001.47 (1)	1852.2 (88.48)	1.3 (2.14)	943.03 (125.16)	22	9.4
rc202_21	100	21	1749.6 (115.44)	1605.46 (1)	1913.69 (1)	1745.09 (116.97)	4.51 (4.81)	888.08 (150.66)	19.3	13.6
rc203_21	100	21	1628.12 (113.55)	1432.24 (1)	1856.02 (1)	1614.06 (90.64)	14.06 (38.94)	784.68 (161.86)	18.6	12.7
rc204_21	100	21	1458.93 (119.67)	1218.75 (1)	1678.39 (1)	1457.12 (116.08)	1.8 (5.7)	684.09 (252.81)	18.4	8.8
rc205_21	100	21	1770.73 (88.91)	1669.75 (1)	1918.74 (1)	1769.48 (89.47)	1.25 (1.78)	978.63 (99.27)	21.1	12.9
rc206_21	100	21	1753.35 (74.38)	1625.79 (1)	1876.78 (1)	1748.77 (78.34)	4.58 (5.15)	947.55 (75.03)	20.8	13.2
rc207_21	100	21	1676.87 (85.87)	1527.12 (1)	1798.35 (1)	1674.79 (85.95)	2.08 (3.01)	861.42 (149.68)	20.7	11.1
rc208_21	100	21	1589.65 (124.99)	1313.03 (1)	1762.4 (1)	1588.22 (124.75)	1.43 (1.64)	849.65 (262.08)	20	12.4

TABLE B.48: Results for MOHF-VRP-STW obtained by MMA on the instance set $\mathcal{I}_2$.

Instance	C	A	Value						Trucks	Pareto-front size
			Avg (std)	**Min**	**Max**	**Dist. EV (std)**	**Dist. ICV (std)**	**Penalty (std)**		
c101_21	100	21	1212.72 (72.9)	1132.64 (1)	1342.7 (1)	1212.43 (73.26)	0.29 (0.91)	558.73 (108.94)	14.6	19.8
c102_21	100	21	1232.49 (124.5)	1090.36 (1)	1522.44 (1)	1196.59 (96.2)	35.9 (53.72)	528.7 (162.08)	16	18.5
c103_21	100	21	1209.96 (93.72)	1103.28 (1)	1443.53 (1)	1209.23 (93.69)	0.73 (1.99)	538.34 (147.15)	16.2	17.9
c104_21	100	21	1068.26 (59.4)	984.28 (1)	1146.58 (1)	1067.11 (57.92)	1.15 (3.53)	390.52 (128.58)	13.6	22.7
c105_21	100	21	1206.85 (49.38)	1131.19 (1)	1298.47 (1)	1193.32 (46.07)	13.53 (11.56)	387.49 (106.34)	15.1	20.9
c106_21	100	21	1157.62 (67.52)	1079.01 (1)	1284.26 (1)	1155.71 (67.7)	1.91 (3.55)	463.5 (117.72)	14.6	17.6
c107_21	100	21	1157.23 (52.48)	1067.36 (1)	1259.21 (1)	1147.62 (52.61)	9.61 (6.26)	443.95 (155.71)	14.6	18.1
c108_21	100	21	1141.68 (41.12)	1088.0 (1)	1197.9 (1)	1140.8 (39.94)	0.88 (1.85)	405.4 (135.38)	13.9	23.2
c109_21	100	21	1120.88 (58.61)	1022.86 (1)	1218.76 (1)	1119.76 (59.85)	1.12 (3.55)	322.81 (119.17)	13.4	21.9
c201_21	100	21	1048.84 (69.54)	984.23 (1)	1203.59 (1)	1048.84 (69.54)	0.0 (0.0)	100.49 (70.27)	10.9	6.8
c202_21	100	21	1050.87 (24.21)	988.52 (1)	1071.82 (1)	1048.32 (25.49)	2.55 (8.08)	144.19 (131.73)	11.3	10
c203_21	100	21	1008.23 (32.12)	945.5 (1)	1052.22 (1)	1008.23 (32.12)	0.0 (0.0)	63.52 (59.08)	10.8	4.8
c204_21	100	21	1004.08 (35.41)	959.32 (1)	1064.51 (1)	1004.08 (35.41)	0.0 (0.0)	54.67 (57.96)	10.5	6.1
c205_21	100	21	1022.44 (50.08)	957.91 (1)	1101.18 (1)	1022.44 (50.08)	0.0 (0.0)	65.34 (56.6)	11	7.5
c206_21	100	21	1052.87 (37.13)	999.3 (1)	1132.01 (1)	1052.65 (36.99)	0.22 (0.69)	90.02 (60.54)	10.7	6.9
c207_21	100	21	1017.72 (33.35)	963.21 (1)	1063.15 (1)	1017.72 (33.35)	0.0 (0.0)	76.62 (69.92)	10.9	6.4
c208_21	100	21	999.28 (29.16)	950.7 (1)	1058.46 (1)	999.28 (29.16)	0.0 (0.0)	32.77 (24.29)	10.9	4.9
r101_21	100	21	1839.31 (75.45)	1763.57 (1)	1988.65 (1)	1665.3 (89.26)	174.01 (72.19)	916.35 (148.3)	23.2	40.7
r102_21	100	21	1647.62 (75.38)	1565.17 (1)	1767.11 (1)	1546.84 (74.62)	100.78 (50.04)	861.78 (188.36)	22.4	43.8
r103_21	100	21	1524.31 (83.61)	1404.41 (1)	1630.02 (1)	1448.38 (59.73)	75.93 (44.6)	738.93 (142.82)	20.6	26
r104_21	100	21	1299.48 (77.47)	1235.97 (1)	1453.84 (1)	1237.48 (67.53)	62.01 (20.29)	552.17 (125.59)	16.8	33.6
r105_21	100	21	1671.19 (70.9)	1559.78 (1)	1783.0 (1)	1553.56 (109.25)	117.63 (77.01)	736.65 (135.92)	22.3	30.3
r106_21	100	21	1479.04 (118.33)	1323.65 (1)	1653.42 (1)	1410.65 (120.57)	68.39 (41.23)	748.94 (163.54)	19.1	35.8
r107_21	100	21	1386.36 (100.84)	1181.74 (1)	1529.52 (1)	1331.95 (85.39)	54.41 (33.52)	624.61 (176.02)	17.8	25.7
r108_21	100	21	1218.19 (51.12)	1133.79 (1)	1295.94 (1)	1188.21 (44.74)	29.98 (31.98)	540.35 (203.37)	15.3	27
r109_21	100	21	1433.54 (94.29)	1275.33 (1)	1603.28 (1)	1383.58 (97.11)	49.96 (48.1)	696.45 (107.21)	19.7	26.9
r110_21	100	21	1334.34 (85.96)	1178.56 (1)	1458.92 (1)	1290.37 (83.21)	43.96 (67.32)	581.93 (189.89)	16.7	25.3
r111_21	100	21	1318.05 (75.14)	1213.42 (1)	1471.33 (1)	1285.15 (79.89)	32.91 (18.56)	576.93 (94.81)	16.9	23.8
r112_21	100	21	1336.05 (76.26)	1223.77 (1)	1506.87 (1)	1265.79 (88.64)	70.26 (33.27)	343.39 (81.29)	16.7	17.4
r201_21	100	21	1357.52 (51.1)	1272.21 (1)	1442.37 (1)	1353.05 (51.1)	4.47 (6.71)	93.1 (89.08)	13	7.7
r202_21	100	21	1210.75 (59.38)	1132.66 (1)	1310.17 (1)	1208.61 (57.27)	2.14 (4.29)	97.05 (60.97)	11.2	6.6
r203_21	100	21	1142.94 (68.18)	1064.32 (1)	1271.2 (1)	1139.67 (68.15)	3.28 (6.67)	89.55 (112.31)	11.3	8.5
r204_21	100	21	1000.76 (25.71)	954.29 (1)	1028.89 (1)	1000.63 (25.55)	0.13 (0.41)	38.94 (50.66)	10.2	4.3
r205_21	100	21	1188.16 (49.17)	1117.43 (1)	1294.53 (1)	1186.32 (50.03)	1.84 (2.72)	91.72 (84.16)	11.3	8.4
r206_21	100	21	1130.2 (37.5)	1078.99 (1)	1195.02 (1)	1128.6 (37.37)	1.6 (3.69)	35.37 (63.27)	10.6	5.6
r207_21	100	21	1043.28 (58.15)	944.02 (1)	1159.79 (1)	1040.25 (58.79)	3.03 (7.7)	112.4 (161.71)	10.7	8
r208_21	100	21	1002.42 (38.22)	958.52 (1)	1085.66 (1)	1002.32 (38.26)	0.1 (0.3)	27.81 (42.89)	10.2	3.9
r209_21	100	21	1098.26 (44.0)	1036.94 (1)	1156.39 (1)	1095.96 (44.12)	2.3 (4.8)	38.5 (36.6)	10.6	3.8
r210_21	100	21	1086.26 (34.5)	1032.03 (1)	1149.78 (1)	1084.91 (33.5)	1.36 (2.12)	81.61 (171.06)	10.4	6
r211_21	100	21	1032.23 (27.47)	972.5 (1)	1062.6 (1)	1031.65 (27.05)	0.58 (1.32)	57.92 (45.51)	10.5	7.1
rc101_21	100	21	1887.85 (130.11)	1747.78 (1)	2116.57 (1)	1740.24 (124.21)	147.61 (54.02)	924.3 (126.18)	19.9	39.7
rc102_21	100	21	1711.65 (111.1)	1572.82 (1)	1908.41 (1)	1575.58 (42.68)	136.07 (92.31)	700.59 (162.2)	17.5	37.9
rc103_21	100	21	1581.57 (80.39)	1408.18 (1)	1681.55 (1)	1493.73 (72.23)	87.83 (35.65)	758.54 (175.68)	18	37.2
rc104_21	100	21	1369.59 (59.69)	1285.95 (1)	1470.12 (1)	1326.36 (60.42)	43.23 (25.44)	649.6 (153.46)	14.8	33.5
rc105_21	100	21	1598.8 (53.78)	1503.28 (1)	1682.87 (1)	1498.41 (62.14)	100.39 (53.63)	703.26 (100.32)	16.5	39.6
rc106_21	100	21	1616.86 (75.56)	1541.24 (1)	1780.67 (1)	1541.49 (65.79)	75.37 (32.34)	755.34 (236.03)	18	30.2
rc107_21	100	21	1488.78 (87.2)	1353.14 (1)	1603.6 (1)	1432.34 (55.88)	56.44 (55.99)	610.99 (169.5)	15.4	25.8
rc108_21	100	21	1427.67 (79.51)	1309.77 (1)	1557.64 (1)	1362.06 (75.16)	65.61 (41.77)	498.77 (166.11)	15	24.9
rc201_21	100	21	1524.87 (45.09)	1453.67 (1)	1597.06 (1)	1509.88 (47.22)	14.99 (15.61)	123.71 (129.51)	11.5	9.1
rc202_21	100	21	1434.63 (63.3)	1316.17 (1)	1522.11 (1)	1432.07 (62.23)	2.56 (4.93)	176.33 (122.23)	12.3	10
rc203_21	100	21	1244.22 (59.22)	1182.66 (1)	1390.04 (1)	1243.47 (59.24)	0.75 (1.73)	141.14 (84.42)	11.2	7.2
rc204_21	100	21	1116.35 (39.72)	1044.81 (1)	1168.99 (1)	1098.08 (42.59)	18.28 (22.15)	13.5 (10.32)	10.2	3.6
rc205_21	100	21	1326.67 (40.32)	1258.8 (1)	1386.83 (1)	1317.32 (42.18)	9.34 (12.64)	103.28 (92.49)	11	7
rc206_21	100	21	1342.84 (59.63)	1266.15 (1)	1434.06 (1)	1341.41 (59.65)	1.43 (2.08)	87.15 (72.18)	11.1	6.3
rc207_21	100	21	1217.58 (64.09)	1133.38 (1)	1349.46 (1)	1215.11 (64.15)	2.47 (5.45)	45.7 (88.73)	10.3	7
rc208_21	100	21	1135.38 (58.1)	1048.62 (1)	1254.29 (1)	1133.06 (59.18)	2.32 (4.15)	59.15 (92.09)	10.5	5.7

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