	PSO-GA	SPSO-GA
1	64.0	42.34
2	66.08	40.56
3	64.52	42.48
4	66.52	38.36
5	64.84	40.42
6	64.39	42.01
7	66.19	38.77
8	65.53	40.78
9	67.67	40.99
10	67.28	40.07
11	67.21	38.28
12	66.61	38.73
13	66.61	39.93
14	67.9	42.49
15	65.59	41.59
16	67.66	42.85
17	64.41	42.06
18	64.06	41.34
19	65.16	38.44
20	64.39	40.46
21	67.73	38.79
22	67.24	40.25
23	67.18	41.67
24	67.53	40.5
25	64.08	39.89
26	65.01	39.58
27	65.35	41.63
28	66.7	39.08
29	67.93	40.65
30	65.9	39.28
31	67.74	39.88
32	67.37	42.55
33	65.13	38.84
34	64.12	39.88
35	65.98	39.66
36	67.49	39.64
37	64.73	42.38
38	65.23	42.13
39	64.41	38.88
40	64.6	38.73
41	66.62	39.89
42	66.19	40.25

41.77
40.71
40.91
42.83
39.25
38.53
39.17
42.71
41.08

	PSO-GA	SPSO-GA
1	134.32	59.76
2	135.09	59.0
3	135.84	61.85
4	134.65	61.16
5	135.78	61.83
6	135.49	60.29
7	134.53	59.41
8	133.23	58.75
9	133.89	60.68
10	135.1	58.52
11	133.85	58.7
12	133.9	58.81
13	133.3	60.82
14	134.77	60.33
15	133.2	60.67
16	135.5	60.35
17	135.5	59.89
18	134.54	58.7
19	134.39	61.54
20	133.75	60.44
21	136.26	59.19
22	134.37	59.26
23	134.09	60.84
24	135.0	59.47
25	133.59	58.34
26	134.32	59.32
27	134.58	59.48
28	134.58	61.49
29	135.78	61.43
30	134.37	60.21
31	133.24	60.62
32	135.12	61.15

35 133.93 61.16 36 133.95 58.21 37 135.98 58.44 38 134.95 59.06 39 136.0 59.78 40 133.77 61.63 41 135.44 60.08 42 133.49 59.47 43 134.37 61.87 44 134.82 62.06 45 133.69 58.3 46 134.4 61.47 47 133.22 59.11 48 133.3 58.89 49 134.76 61.83 50 135.31 58.47	
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36 133.95 58.21	
35 133.93 61.16	
25	
34 133.38 59.26	
33 133.55 60.31	

	PSO-GA	SPSO-GA
1	201.13	81.96
2	200.65	79.29
3	200.25	81.31
4	202.95	81.94
5	199.59	81.38
6	199.86	81.75
7	202.44	79.4
8	202.23	77.71
9	198.4	80.36
10	198.25	78.54
11	201.73	79.76
12	200.18	81.87
13	200.25	81.2
14	198.88	80.69
15	200.22	79.51
16	202.19	80.48
17	202.73	80.67
18	198.78	80.8
19	203.09	79.3
20	200.43	79.41
21	199.28	81.77
22	199.22	82.1

23	200.28	78.07
24	200.68	78.19
25	199.04	79.44
26	202.09	80.75
27	199.36	78.85
28	201.48	80.36
29	197.54	80.34
30	200.65	79.07
31	200.78	80.59
32	199.26	78.73
33	199.77	78.78
34	198.08	79.45
35	202.56	79.62
36	199.22	78.29
37	201.46	79.0
38	201.68	80.91
39	199.07	81.07
40	197.76	80.08
41	202.43	79.69
42	201.22	81.09
43	200.24	79.28
44	202.47	80.45
45	200.83	78.04
46	198.12	78.61
47	198.97	80.02
48	198.89	79.74
49	200.61	81.07
50	200.79	80.15
Average	200.36	80.02

	PSO-GA	SPSO-GA
1	265.75	97.54
2	265.19	96.97
3	264.5	95.18
4	262.59	94.29
5	264.52	95.42
6	265.18	96.78
7	263.96	95.43
8	264.34	97.14
9	262.72	97.64
10	261.89	95.79
11	263.72	97.69
12	262.4	96.8

14 263.55 98.39 15 264.1 96.0 16 261.7 97.84 17 265.14 97.73 18 263.75 95.73 19 263.63 98.06 20 263.99 95.45 21 262.17 96.93 22 261.89 95.08 23 265.74 96.8 24 262.1 98.25 25 263.63 96.75 26 261.58 94.7 27 263.87 98.37 28 261.49 98.29 29 265.66 96.77 30 264.36 98.49 31 264.65 97.42 32 261.75 97.24 33 265.82 98.37 34 261.51 95.71 35 265.55 96.36 36 262.98 96.57 37 265.02 97.68 38 264.39 94.35 39 261.37 95.49 40 265.26 95.35 41 264.21 95.69 42 263.34 97.66 43 263.39 96.41 44 265.59 96.13 45 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53 Average 263.57 96.61	13	265.0	95.06
15 264.1 96.0 16 261.7 97.84 17 265.14 97.73 18 263.75 95.73 19 263.63 98.06 20 263.99 95.45 21 262.17 96.93 22 261.89 95.08 23 265.74 96.8 24 262.1 98.25 25 263.63 96.75 26 261.58 94.7 27 263.87 98.37 28 261.49 98.29 29 265.66 96.77 30 264.36 98.49 31 264.65 97.42 32 261.75 97.24 33 265.82 98.37 34 261.51 95.71 35 265.55 96.36 36 262.98 96.57 37 265.02 97.68 38 264.39 94.35 39 261.37 95.49 40 265			
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35 265.55 96.36 36 262.98 96.57 37 265.02 97.68 38 264.39 94.35 39 261.37 95.49 40 265.26 95.35 41 264.21 95.69 42 263.34 97.66 43 263.39 96.41 44 265.59 96.13 45 263.4 95.62 46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	33	265.82	98.37
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37 265.02 97.68 38 264.39 94.35 39 261.37 95.49 40 265.26 95.35 41 264.21 95.69 42 263.34 97.66 43 263.39 96.41 44 265.59 96.13 45 263.4 95.62 46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	35	265.55	96.36
38 264.39 94.35 39 261.37 95.49 40 265.26 95.35 41 264.21 95.69 42 263.34 97.66 43 263.39 96.41 44 265.59 96.13 45 263.4 95.62 46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	36	262.98	96.57
39 261.37 95.49 40 265.26 95.35 41 264.21 95.69 42 263.34 97.66 43 263.39 96.41 44 265.59 96.13 45 263.4 95.62 46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	37	265.02	97.68
40 265.26 95.35 41 264.21 95.69 42 263.34 97.66 43 263.39 96.41 44 265.59 96.13 45 263.4 95.62 46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	38	264.39	94.35
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43 263.39 96.41 44 265.59 96.13 45 263.4 95.62 46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	41	264.21	95.69
44 265.59 96.13 45 263.4 95.62 46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	42	263.34	97.66
45 263.4 95.62 46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	43	263.39	96.41
46 261.53 98.36 47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	44	265.59	96.13
47 263.28 95.61 48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	45	263.4	95.62
48 261.69 96.18 49 261.63 97.61 50 261.91 95.53	46	261.53	98.36
49 261.63 97.61 50 261.91 95.53	47	263.28	95.61
50 261.91 95.53	48	261.69	96.18
	49	261.63	97.61
Average 263.57 96.61	50	261.91	95.53
	Average	263.57	96.61

	PSO-GA	SPSO-GA
1	332.52	102.59
2	328.53	107.1

3	331.42	107.76
4	329.47	107.29
5	329.03	105.49
6	330.66	101.96
7	331.67	102.61
8	331.11	106.76
9	329.7	104.87
10	327.34	102.17
11	329.17	102.2
12	326.6	107.52
13	332.68	104.5
14	326.72	105.16
15	330.86	105.6
16	330.06	103.76
17	332.74	104.03
18	333.03	102.39
19	327.41	104.68
20	331.24	101.8
21	332.75	102.73
22	332.93	106.2
23	330.81	104.34
24	327.51	105.06
25	326.94	102.39
26	326.42	105.34
27	329.37	103.35
28	331.1	101.55
29	328.83	106.82
30	326.46	106.33
31	332.51	101.46
32	328.63	105.96
33	330.47	103.16
34	327.25	105.35
35	329.64	104.5
36	332.57	104.83
37	332.61	105.67
38	329.54	105.43
39	327.12	101.77
40	329.8	105.55
41	327.03	103.28
42	328.1	104.22
43	331.04	106.99
44	330.5	104.77
45	327.58	106.6
46	332.6	103.78

47	330.96	102.18
48	328.3	105.42
49	330.47	107.43
50	326.38	102.25
Average	329.76	104.49