

Scaled data based on original data using
LM-66-11 Electrical and Photometric Measurements of Single-Ended Compact
Fluorescent Lamps

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: SHAPER

Report Number: 18661

Luminaire Tested: **624/4-CF1/13-BL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-66-11
Report Number: 18661
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: SHAPER
Catalog Number: 624/4-CF1/13-BL
Description: FLUORESCENT WALL MOUNT LUMINAIRE WITH WHITE INTERIOR AND WHITE FLAT
PLASTIC LENS
Light Source: ONE SYLVANIA 13 WATT CPFL LAMP

CF13DS/E830. LUMEN RATING = 800 LMS.

Ballast/Driver: -

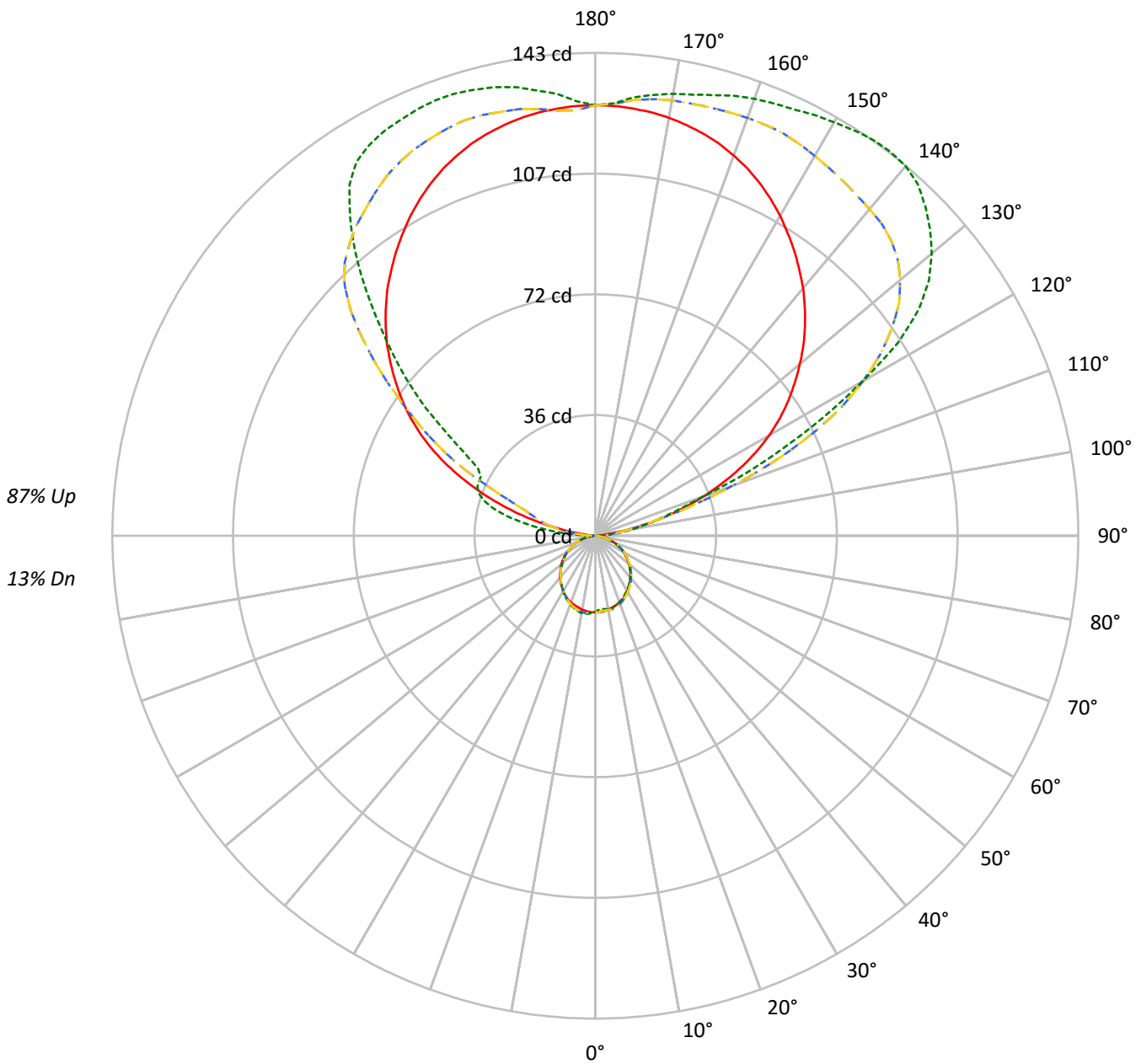
Summary

Lumens per Lamp: 800 (1 lamp)
Luminaire Lumens: 486.4 lumens
Efficiency: 60.8%
Efficacy: 37.4 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.24 / 1.36
Luminous Opening: Rectangular (W 0.21' x L: 0.67' x H: 0')
CIE Type: Semi-Indirect

Input Watts (W): 13
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270° - - - 135°-315°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20
RC	80									50									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																			
0	60	60	60	60	52	52	52	52	38	38	38	25	25	25	13	13	13	8	
1	54	52	50	48	47	45	44	42	33	32	31	22	21	21	12	12	11	7	
2	49	45	42	39	43	40	37	34	29	27	26	19	18	17	10	10	9	6	
3	45	40	36	32	39	35	31	29	26	23	21	17	16	15	9	9	8	5	
4	41	35	31	27	36	31	27	24	23	20	18	15	14	12	8	7	7	4	
5	38	31	26	23	33	27	23	20	20	18	16	13	12	11	7	7	6	3	
6	35	28	23	20	30	24	20	18	18	15	13	12	10	9	7	6	5	3	
7	32	25	20	17	28	22	18	15	16	14	12	11	9	8	6	5	5	3	
8	29	22	18	15	26	20	16	13	15	12	10	10	8	7	5	5	4	2	
9	27	20	16	13	24	18	14	12	13	11	9	9	7	6	5	4	4	2	
10	25	18	14	12	22	16	13	10	12	10	8	8	7	6	5	4	3	2	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	1729	1729	1729	1729
5°	1736	1674	1736	1782
10°	1725	1717	1725	1810
15°	1711	1719	1711	1790
20°	1710	1702	1710	1767
25°	1705	1671	1705	1722
30°	1678	1652	1678	1678
35°	1644	1625	1644	1634
40°	1618	1608	1618	1608
45°	1580	1580	1580	1558
50°	1559	1547	1559	1523
55°	1507	1521	1507	1494
60°	1469	1469	1469	1438
65°	1412	1412	1412	1376
70°	1342	1275	1342	1320
75°	1212	1035	1212	1241
80°	1013	749	1013	1101
85°	702	439	702	1053



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	2.1	0.4	0.3
10°-20°	6.2	1.3	0.8
20°-30°	9.3	1.9	1.2
30°-40°	11.0	2.3	1.4
40°-50°	11.3	2.3	1.4
50°-60°	10.1	2.1	1.3
60°-70°	7.7	1.6	1.0
70°-80°	4.3	0.9	0.5
80°-90°	1.2	0.2	0.1
90°-100°	5.3	1.1	0.7
100°-110°	23.6	4.9	3.0
110°-120°	51.6	10.6	6.5
120°-130°	75.0	15.4	9.4
130°-140°	83.1	17.1	10.4
140°-150°	76.2	15.7	9.5
150°-160°	59.1	12.2	7.4
160°-170°	36.9	7.6	4.6
170°-180°	12.3	2.5	1.5
0°-30°	17.7	3.6	2.2
0°-40°	28.7	5.9	3.6
0°-60°	50.0	10.3	6.3
0°-90°	63.2	13.0	7.9
90°-120°	80.6	16.6	10.1
90°-150°	314.8	64.7	39.4
90°-180°	423.0	87.0	52.9
0°-180°	486.4	100.0	60.8

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	23	23	23	23	23	
5°	23	22	23	23	23	2
15°	22	22	22	23	22	6
25°	20	20	20	20	20	9
35°	18	17	18	18	18	11
45°	15	15	15	14	15	11
55°	11	11	11	11	11	10
65°	8	8	8	8	8	8
75°	4	4	4	4	4	4
85°	1	0	1	1	1	1
90°	0	0	0	0	0	0
95°	2	4	2	10	2	3
105°	21	20	21	31	21	22
115°	47	62	47	38	47	47
125°	70	117	70	55	70	62
135°	88	138	88	92	88	68
145°	103	143	103	127	103	64
155°	115	139	115	136	115	53
165°	123	135	123	137	123	35
175°	127	130	127	131	127	12
180°	128	128	128	128	128	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6
2.5°	22.7	22.5	22.7	22.2	22.0	22.2	22.7	22.5	22.7	22.6	22.8
5°	22.6	22.3	22.4	22.0	21.8	22.0	22.4	22.3	22.6	22.6	22.9
7.5°	22.4	22.1	22.3	22.0	21.9	22.0	22.3	22.1	22.4	22.5	23.1
10°	22.2	22.0	22.3	22.1	22.1	22.1	22.3	22.0	22.2	22.3	22.9
12.5°	21.9	21.8	22.4	22.2	22.1	22.2	22.4	21.8	21.9	22.2	22.7
15°	21.6	21.7	22.3	21.9	21.7	21.9	22.3	21.7	21.6	21.9	22.4
17.5°	21.3	21.7	22.0	21.5	21.3	21.5	22.0	21.7	21.3	21.6	22.0
20°	21.0	21.3	21.5	21.0	20.9	21.0	21.5	21.3	21.0	21.1	21.4
22.5°	20.6	21.0	21.0	20.5	20.4	20.5	21.0	21.0	20.6	20.6	20.9
25°	20.2	20.4	20.4	20.0	19.8	20.0	20.4	20.4	20.2	20.1	20.2
27.5°	19.6	19.8	19.8	19.3	19.3	19.3	19.8	19.8	19.6	19.5	19.6
30°	19.0	19.2	19.2	18.8	18.7	18.8	19.2	19.2	19.0	18.8	18.9
32.5°	18.3	18.6	18.6	18.2	18.1	18.2	18.6	18.6	18.3	18.1	18.2
35°	17.6	17.9	17.9	17.5	17.4	17.5	17.9	17.9	17.6	17.4	17.5
37.5°	16.9	17.2	17.2	16.8	16.7	16.8	17.2	17.2	16.9	16.6	16.7
40°	16.2	16.4	16.4	16.1	16.1	16.1	16.4	16.4	16.2	15.9	15.9
42.5°	15.4	15.6	15.7	15.3	15.3	15.3	15.7	15.6	15.4	15.1	15.2
45°	14.6	14.9	14.9	14.6	14.6	14.6	14.9	14.9	14.6	14.3	14.4
47.5°	13.9	14.1	14.1	13.9	13.8	13.9	14.1	14.1	13.9	13.6	13.7
50°	13.1	13.4	13.4	13.1	13.0	13.1	13.4	13.4	13.1	12.8	12.8
52.5°	12.2	12.5	12.4	12.3	12.2	12.3	12.4	12.5	12.2	11.9	12.0
55°	11.3	11.7	11.6	11.4	11.4	11.4	11.6	11.7	11.3	11.1	11.2
57.5°	10.5	10.8	10.8	10.5	10.5	10.5	10.8	10.8	10.5	10.3	10.3
60°	9.6	9.8	9.8	9.7	9.6	9.7	9.8	9.8	9.6	9.4	9.5
62.5°	8.7	9.0	9.0	8.8	8.8	8.8	9.0	9.0	8.7	8.6	8.7
65°	7.8	8.1	8.1	7.9	7.8	7.9	8.1	8.1	7.8	7.6	7.7
67.5°	6.9	7.2	7.1	6.8	6.7	6.8	7.1	7.2	6.9	6.7	6.9
70°	6.0	6.2	6.1	5.8	5.7	5.8	6.1	6.2	6.0	5.8	6.0
72.5°	5.1	5.3	5.0	4.7	4.6	4.7	5.0	5.3	5.1	4.9	5.1
75°	4.1	4.2	3.9	3.7	3.5	3.7	3.9	4.2	4.1	4.1	4.2
77.5°	3.2	3.2	2.9	2.6	2.5	2.6	2.9	3.2	3.2	3.1	3.3
80°	2.3	2.3	2.0	1.7	1.7	1.7	2.0	2.3	2.3	2.3	2.5
82.5°	1.5	1.4	1.2	0.9	0.9	0.9	1.2	1.4	1.5	1.5	1.8
85°	0.8	0.8	0.6	0.6	0.5	0.6	0.6	0.8	0.8	0.9	1.2
87.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.8
90°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
92.5°	0.7	1.3	1.5	1.5	1.5	1.5	1.5	1.3	0.7	1.2	2.1
95°	1.5	2.9	3.9	4.3	4.5	4.3	3.9	2.9	1.5	3.2	4.4
97.5°	3.6	5.1	6.5	7.2	7.5	7.2	6.5	5.1	3.6	5.1	7.4
100°	8.9	9.1	9.8	10.7	11.2	10.7	9.8	9.1	8.9	7.1	10.9
102.5°	14.5	17.0	13.6	14.6	15.2	14.6	13.6	17.0	14.5	11.0	13.9
105°	21.0	27.3	20.7	19.3	20.2	19.3	20.7	27.3	21.0	18.5	16.8
107.5°	27.4	37.7	30.8	25.9	25.8	25.9	30.8	37.7	27.4	25.8	19.2
110°	34.1	48.0	43.1	37.1	33.7	37.1	43.1	48.0	34.1	34.1	22.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	40.7	57.3	56.8	49.3	47.8	49.3	56.8	57.3	40.7	42.7	27.6
115°	47.2	65.3	70.0	63.0	61.5	63.0	70.0	65.3	47.2	51.1	35.9
117.5°	53.6	72.4	81.9	78.8	76.3	78.8	81.9	72.4	53.6	59.6	45.6
120°	59.4	78.5	91.4	93.5	91.1	93.5	91.4	78.5	59.4	66.2	54.2
122.5°	64.8	83.8	100.0	105.4	106.2	105.4	100.0	83.8	64.8	71.7	62.5
125°	69.7	88.5	107.2	114.1	116.9	114.1	107.2	88.5	69.7	76.3	71.1
127.5°	74.4	93.2	113.4	121.4	124.5	121.4	113.4	93.2	74.4	81.0	80.4
130°	79.0	97.4	117.8	127.5	130.0	127.5	117.8	97.4	79.0	85.6	89.3
132.5°	83.6	100.9	121.4	132.9	134.4	132.9	121.4	100.9	83.6	90.1	98.0
135°	87.8	104.3	123.8	137.0	138.1	137.0	123.8	104.3	87.8	94.4	105.0
137.5°	91.8	107.6	125.4	139.0	141.3	139.0	125.4	107.6	91.8	98.4	109.8
140°	95.7	110.6	126.3	140.1	142.9	140.1	126.3	110.6	95.7	102.0	113.1
142.5°	99.2	113.1	127.1	140.3	143.4	140.3	127.1	113.1	99.2	105.3	116.0
145°	102.8	115.5	128.1	140.0	143.2	140.0	128.1	115.5	102.8	108.6	118.4
147.5°	106.1	117.5	129.0	139.4	142.4	139.4	129.0	117.5	106.1	111.8	120.9
150°	109.4	119.4	129.9	138.9	141.4	138.9	129.9	119.4	109.4	114.8	123.2
152.5°	112.4	121.0	130.8	138.5	140.5	138.5	130.8	121.0	112.4	117.1	125.0
155°	115.2	122.7	131.5	138.2	139.3	138.2	131.5	122.7	115.2	119.3	126.4
157.5°	117.7	124.5	131.7	137.9	138.5	137.9	131.7	124.5	117.7	120.7	127.4
160°	119.8	125.9	131.7	137.4	137.7	137.4	131.7	125.9	119.8	122.0	128.3
162.5°	121.8	127.2	131.5	136.6	136.6	136.6	131.5	127.2	121.8	123.0	129.0
165°	123.3	128.3	131.3	135.6	135.1	135.6	131.3	128.3	123.3	123.8	129.0
167.5°	124.6	129.0	131.1	134.5	133.8	134.5	131.1	129.0	124.6	124.3	128.6
170°	125.7	129.3	130.9	133.8	132.9	133.8	130.9	129.3	125.7	124.5	128.3
172.5°	126.5	129.2	130.4	132.9	131.7	132.9	130.4	129.2	126.5	125.0	127.5
175°	127.0	128.8	129.5	131.7	130.3	131.7	129.5	128.8	127.0	125.5	126.4
177.5°	127.4	128.1	128.0	129.7	128.2	129.7	128.0	128.1	127.4	126.1	126.1
180°	127.5	127.5	127.5	127.5	127.5	127.5	127.5	127.5	127.5	127.5	127.5



TEST NUMBER: 18661
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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	22.6	22.6	22.6	22.6	22.6	22.6
2.5°	22.7	22.8	22.7	22.8	22.6	22.7
5°	22.9	23.2	22.9	22.9	22.6	22.6
7.5°	23.1	23.3	23.1	23.1	22.5	22.4
10°	22.9	23.3	22.9	22.9	22.3	22.2
12.5°	22.7	23.0	22.7	22.7	22.2	21.9
15°	22.3	22.6	22.3	22.4	21.9	21.6
17.5°	21.9	22.1	21.9	22.0	21.6	21.3
20°	21.4	21.7	21.4	21.4	21.1	21.0
22.5°	20.8	21.0	20.8	20.9	20.6	20.6
25°	20.2	20.4	20.2	20.2	20.1	20.2
27.5°	19.5	19.7	19.5	19.6	19.5	19.6
30°	18.8	19.0	18.8	18.9	18.8	19.0
32.5°	18.1	18.2	18.1	18.2	18.1	18.3
35°	17.3	17.5	17.3	17.5	17.4	17.6
37.5°	16.6	16.8	16.6	16.7	16.6	16.9
40°	15.9	16.1	15.9	15.9	15.9	16.2
42.5°	15.2	15.2	15.2	15.2	15.1	15.4
45°	14.4	14.4	14.4	14.4	14.3	14.6
47.5°	13.6	13.7	13.6	13.7	13.6	13.9
50°	12.8	12.8	12.8	12.8	12.8	13.1
52.5°	12.0	12.0	12.0	12.0	11.9	12.2
55°	11.1	11.2	11.1	11.2	11.1	11.3
57.5°	10.3	10.3	10.3	10.3	10.3	10.5
60°	9.4	9.4	9.4	9.5	9.4	9.6
62.5°	8.6	8.6	8.6	8.7	8.6	8.7
65°	7.6	7.6	7.6	7.7	7.6	7.8
67.5°	6.8	6.8	6.8	6.9	6.7	6.9
70°	5.9	5.9	5.9	6.0	5.8	6.0
72.5°	5.0	5.0	5.0	5.1	4.9	5.1
75°	4.2	4.2	4.2	4.2	4.1	4.1
77.5°	3.3	3.3	3.3	3.3	3.1	3.2
80°	2.5	2.5	2.5	2.5	2.3	2.3
82.5°	1.8	1.8	1.8	1.8	1.5	1.5
85°	1.2	1.2	1.2	1.2	0.9	0.8
87.5°	0.7	0.7	0.7	0.8	0.6	0.5
90°	0.5	0.5	0.5	0.5	0.5	0.5
92.5°	3.8	4.7	3.8	2.1	1.2	0.7
95°	8.0	9.9	8.0	4.4	3.2	1.5
97.5°	12.5	15.7	12.5	7.4	5.1	3.6
100°	17.3	21.2	17.3	10.9	7.1	8.9
102.5°	22.3	26.6	22.3	13.9	11.0	14.5
105°	26.3	31.3	26.3	16.8	18.5	21.0
107.5°	29.2	34.5	29.2	19.2	25.8	27.4
110°	31.5	36.7	31.5	22.2	34.1	34.1



TEST NUMBER: 18661
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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	33.0	37.8	33.0	27.6	42.7	40.7
115°	34.2	38.0	34.2	35.9	51.1	47.2
117.5°	37.0	38.2	37.0	45.6	59.6	53.6
120°	43.3	40.2	43.3	54.2	66.2	59.4
122.5°	52.0	46.1	52.0	62.5	71.7	64.8
125°	61.4	54.6	61.4	71.1	76.3	69.7
127.5°	70.4	64.7	70.4	80.4	81.0	74.4
130°	78.5	73.8	78.5	89.3	85.6	79.0
132.5°	88.0	82.6	88.0	98.0	90.1	83.6
135°	97.4	91.8	97.4	105.0	94.4	87.8
137.5°	106.5	101.5	106.5	109.8	98.4	91.8
140°	115.0	110.9	115.0	113.1	102.0	95.7
142.5°	121.9	119.3	121.9	116.0	105.3	99.2
145°	126.4	126.9	126.4	118.4	108.6	102.8
147.5°	128.8	131.5	128.8	120.9	111.8	106.1
150°	130.8	133.7	130.8	123.2	114.8	109.4
152.5°	132.0	135.2	132.0	125.0	117.1	112.4
155°	133.5	136.0	133.5	126.4	119.3	115.2
157.5°	134.5	136.9	134.5	127.4	120.7	117.7
160°	134.9	137.4	134.9	128.3	122.0	119.8
162.5°	134.9	137.4	134.9	129.0	123.0	121.8
165°	134.6	136.8	134.6	129.0	123.8	123.3
167.5°	134.3	136.1	134.3	128.6	124.3	124.6
170°	133.3	134.9	133.3	128.3	124.5	125.7
172.5°	132.0	133.0	132.0	127.5	125.0	126.5
175°	130.5	131.4	130.5	126.4	125.5	127.0
177.5°	128.8	128.8	128.8	126.1	126.1	127.4
180°	127.5	127.5	127.5	127.5	127.5	127.5

(END OF REPORT)