

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: 19150

Luminaire Tested: **698-CF2/13**

Issue Date: 3/3/2020

Test Information

Test Method: LM-66-11
Report Number: 19150
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: SHAPER
Catalog Number: 698-CF2/13
Description: INTERIOR WALL MOUNT LUMINAIRE WITH WHITE INTERIOR AND WHITE PLASTIC LENS
Light Source: TWO SYLVANIA 13 WATT CPFL LAMPS

CF13DS/E/830. LUMEN RATING = 1600 LMS.

Ballast/Driver: -

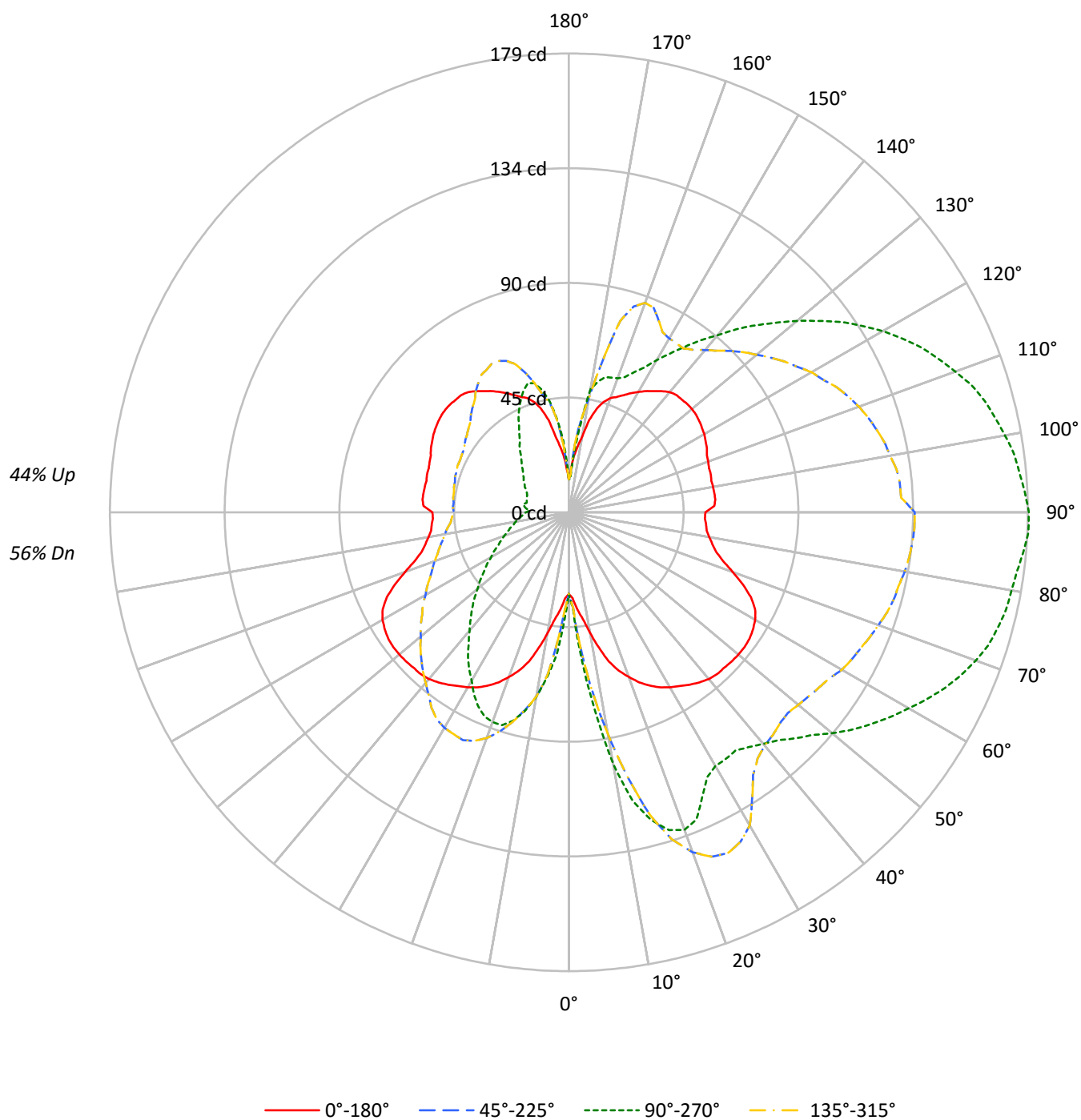
Summary

Lumens per Lamp: 1600 (1 lamp)
Luminaire Lumens: 1066.0 lumens
Efficiency: 66.6%
Efficacy: 38.1 lumens/watt
Spacing Criteria (0/90/45): 2.88 / 2.99 / 2.86
Luminous Opening: Rectangular w/ Sides (W: 0.21' x L: 0.83' x H: 0.83')
CIE Type: General Diffuse

Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): 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



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	72	72	72	72	67	67	67	67	58	58	58	49	49	49	41	41	41
1	63	59	55	52	58	55	51	48	46	44	41	39	37	35	32	30	29
2	56	50	45	40	52	46	41	37	39	35	32	32	29	27	26	24	22
3	51	43	37	32	47	40	34	30	33	29	26	28	24	22	22	20	18
4	46	38	31	27	42	35	29	25	29	25	21	24	21	18	19	17	15
5	42	33	27	22	39	31	25	21	26	21	18	21	18	15	17	14	12
6	39	29	23	19	35	27	22	18	23	19	15	19	16	13	15	13	10
7	36	26	20	16	33	24	19	15	21	16	13	17	14	11	14	11	9
8	33	24	18	14	30	22	17	13	19	15	11	16	12	10	13	10	8
9	31	22	16	13	28	20	15	12	17	13	10	14	11	9	12	9	7
10	28	20	15	11	26	18	14	10	16	12	9	13	10	8	11	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	1964	1964	1964	1964
5°	2172	2667	2172	2580
10°	2543	3688	2543	2698
15°	3035	3860	3035	2614
20°	3291	3552	3291	2347
25°	3467	2946	3467	2004
30°	3562	2483	3562	1647
35°	3640	2269	3640	1373
40°	3722	2202	3722	1126
45°	3742	2199	3742	942
50°	3783	2255	3783	782
55°	3813	2333	3813	655
60°	3793	2409	3793	551
65°	3639	2497	3639	469
70°	3272	2572	3272	408
75°	2995	2625	2995	359
80°	2964	2662	2964	320
85°	3061	2730	3061	288

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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	5.5	0.5	0.3
10°-20°	26.9	2.5	1.7
20°-30°	50.2	4.7	3.1
30°-40°	65.3	6.1	4.1
40°-50°	77.0	7.2	4.8
50°-60°	86.2	8.1	5.4
60°-70°	92.1	8.6	5.8
70°-80°	94.0	8.8	5.9
80°-90°	94.9	8.9	5.9
90°-100°	92.7	8.7	5.8
100°-110°	87.7	8.2	5.5
110°-120°	79.0	7.4	4.9
120°-130°	67.8	6.4	4.2
130°-140°	55.4	5.2	3.5
140°-150°	42.9	4.0	2.7
150°-160°	30.1	2.8	1.9
160°-170°	15.6	1.5	1.0
170°-180°	2.9	0.3	0.2
0°-30°	82.6	7.7	5.2
0°-40°	147.9	13.9	9.2
0°-60°	311.1	29.2	19.4
0°-90°	592.1	55.5	37.0
90°-120°	259.3	24.3	16.2
90°-150°	425.3	39.9	26.6
90°-180°	474.0	44.5	29.6
0°-180°	1066.0	100.0	66.6

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	32	32	32	32	32	
5°	38	58	38	56	38	4
15°	60	124	60	84	60	17
25°	75	123	75	84	75	35
35°	82	113	82	69	82	52
45°	86	125	86	53	86	66
55°	86	144	86	40	86	77
65°	78	162	78	30	78	77
75°	59	173	59	24	59	64
85°	54	178	54	19	54	44
90°	53	179	53	17	53	30
95°	57	176	57	17	57	47
105°	57	168	57	17	57	61
115°	59	152	59	18	59	59
125°	62	130	62	22	62	56
135°	62	103	62	26	62	48
145°	58	79	58	33	58	36
155°	50	60	50	46	50	24
165°	42	55	42	52	42	12
175°	22	23	22	30	22	2
180°	13	13	13	13	13	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8
2.5°	33.5	34.9	37.2	38.6	37.8	38.6	37.2	34.9	33.5	33.9	38.2
5°	38.1	45.0	53.5	57.2	57.9	57.2	53.5	45.0	38.1	42.6	50.2
7.5°	42.0	56.0	70.7	76.8	77.9	76.8	70.7	56.0	42.0	50.8	63.9
10°	47.7	68.4	87.9	98.9	99.8	98.9	87.9	68.4	47.7	60.0	72.9
12.5°	54.1	81.1	105.6	115.8	115.4	115.8	105.6	81.1	54.1	71.3	78.9
15°	60.2	93.3	122.2	126.3	124.3	126.3	122.2	93.3	60.2	81.0	84.5
17.5°	64.8	105.1	133.8	133.4	130.0	133.4	133.8	105.1	64.8	87.1	89.6
20°	68.3	116.3	141.1	137.7	131.8	137.7	141.1	116.3	68.3	91.9	93.7
22.5°	71.8	125.5	145.4	137.8	129.8	137.8	145.4	125.5	71.8	94.7	96.5
25°	74.6	132.6	146.7	133.3	122.9	133.3	146.7	132.6	74.6	96.1	98.0
27.5°	77.0	138.4	144.9	125.1	116.6	125.1	144.9	138.4	77.0	97.5	97.5
30°	78.8	141.1	141.1	121.0	114.3	121.0	141.1	141.1	78.8	98.5	97.1
32.5°	80.3	141.5	133.0	119.7	114.0	119.7	133.0	141.5	80.3	99.1	95.8
35°	82.1	141.2	125.2	118.9	113.4	118.9	125.2	141.2	82.1	99.1	93.3
37.5°	83.6	140.6	121.0	118.2	115.4	118.2	121.0	140.6	83.6	99.8	89.8
40°	84.9	138.9	118.7	119.7	117.9	119.7	118.7	138.9	84.9	99.8	86.9
42.5°	85.6	136.0	117.8	122.2	120.6	122.2	117.8	136.0	85.6	99.2	84.2
45°	85.7	132.9	116.4	124.9	124.7	124.9	116.4	132.9	85.7	98.7	81.4
47.5°	86.1	129.0	115.8	128.1	128.6	128.1	115.8	129.0	86.1	98.1	78.5
50°	86.3	122.6	116.8	131.6	134.0	131.6	116.8	122.6	86.3	96.8	75.4
52.5°	86.3	117.2	117.9	136.8	139.3	136.8	117.9	117.2	86.3	95.3	72.8
55°	86.0	112.3	119.1	141.2	144.0	141.2	119.1	112.3	86.0	93.1	69.9
57.5°	85.1	108.6	120.5	145.0	148.6	145.0	120.5	108.6	85.1	90.3	67.5
60°	83.9	105.2	122.9	149.0	153.0	149.0	122.9	105.2	83.9	87.5	64.6
62.5°	81.9	101.8	124.3	152.9	157.6	152.9	124.3	101.8	81.9	84.7	62.3
65°	78.3	98.7	125.5	157.0	161.9	157.0	125.5	98.7	78.3	81.2	59.6
67.5°	73.4	97.2	127.1	160.4	165.7	160.4	127.1	97.2	73.4	77.5	57.6
70°	67.9	95.7	128.5	163.4	168.9	163.4	128.5	95.7	67.9	73.9	55.7
72.5°	63.0	95.2	130.1	165.7	171.7	165.7	130.1	95.2	63.0	70.2	53.7
75°	59.4	94.4	131.2	168.0	173.3	168.0	131.2	94.4	59.4	67.3	52.1
77.5°	57.3	93.7	131.8	170.8	174.7	170.8	131.8	93.7	57.3	64.6	50.4
80°	55.6	93.5	133.0	172.8	175.3	172.8	133.0	93.5	55.6	63.0	49.2
82.5°	54.2	93.5	133.9	174.2	176.3	174.2	133.9	93.5	54.2	61.3	47.8
85°	53.7	93.5	134.5	175.0	177.9	175.0	134.5	93.5	53.7	60.1	46.3
87.5°	53.1	93.5	134.9	175.8	179.4	175.8	134.9	93.5	53.1	59.1	45.7
90°	53.2	93.4	134.9	176.1	179.4	176.1	134.9	93.4	53.2	58.3	44.9
92.5°	56.8	90.9	129.7	171.5	178.0	171.5	129.7	90.9	56.8	59.1	45.3
95°	57.3	90.2	129.6	170.6	176.4	170.6	129.6	90.2	57.3	59.4	45.1
97.5°	57.2	90.2	128.9	169.0	175.1	169.0	128.9	90.2	57.2	59.8	45.5
100°	57.1	89.9	127.2	167.7	172.7	167.7	127.2	89.9	57.1	59.9	45.5
102.5°	56.9	89.4	126.1	165.5	170.3	165.5	126.1	89.4	56.9	60.6	45.9
105°	57.3	89.0	124.3	162.3	167.9	162.3	124.3	89.0	57.3	60.9	46.0
107.5°	57.3	88.2	122.5	159.5	164.7	159.5	122.5	88.2	57.3	61.6	46.6
110°	57.8	87.0	120.4	155.8	160.4	155.8	120.4	87.0	57.8	62.0	46.5

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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°	58.3	86.1	118.0	152.0	156.2	152.0	118.0	86.1	58.3	63.6	47.1
115°	59.4	85.8	115.3	147.4	151.9	147.4	115.3	85.8	59.4	64.8	47.0
117.5°	60.1	84.5	111.9	142.9	146.7	142.9	111.9	84.5	60.1	67.0	47.3
120°	61.0	83.7	109.3	137.8	141.4	137.8	109.3	83.7	61.0	68.4	47.6
122.5°	61.5	83.0	105.6	131.8	135.4	131.8	105.6	83.0	61.5	70.8	48.3
125°	62.1	82.2	102.6	126.7	129.5	126.7	102.6	82.2	62.1	72.7	49.3
127.5°	62.5	82.0	99.1	120.4	122.6	120.4	99.1	82.0	62.5	74.4	50.0
130°	62.7	82.1	95.6	114.4	116.2	114.4	95.6	82.1	62.7	75.8	51.1
132.5°	62.6	81.9	92.5	109.0	109.4	109.0	92.5	81.9	62.6	76.5	52.1
135°	62.2	83.2	89.0	103.4	103.2	103.4	89.0	83.2	62.2	77.4	54.0
137.5°	62.1	85.3	85.5	98.0	96.9	98.0	85.5	85.3	62.1	77.5	55.6
140°	61.2	86.9	82.6	92.3	90.1	92.3	82.6	86.9	61.2	76.3	57.1
142.5°	59.6	89.2	79.9	87.3	84.7	87.3	79.9	89.2	59.6	74.9	59.6
145°	57.7	90.5	78.0	82.2	78.8	82.2	78.0	90.5	57.7	73.0	61.6
147.5°	56.1	91.9	78.1	77.5	73.5	77.5	78.1	91.9	56.1	70.6	63.6
150°	54.2	91.4	78.3	73.0	68.5	73.0	78.3	91.4	54.2	68.6	64.2
152.5°	52.4	88.7	79.2	70.0	63.7	70.0	79.2	88.7	52.4	65.5	65.3
155°	50.4	83.0	82.7	68.1	60.3	68.1	82.7	83.0	50.4	63.6	65.2
157.5°	48.7	76.5	86.4	65.1	57.1	65.1	86.4	76.5	48.7	61.0	63.9
160°	47.4	70.7	86.9	61.9	55.6	61.9	86.9	70.7	47.4	58.0	61.6
162.5°	45.2	63.7	84.2	58.7	55.1	58.7	84.2	63.7	45.2	54.6	57.3
165°	41.8	56.8	77.3	57.5	54.6	57.5	77.3	56.8	41.8	50.4	52.3
167.5°	36.9	48.2	60.0	55.7	52.1	55.7	60.0	48.2	36.9	44.9	46.8
170°	30.1	36.3	45.2	52.8	48.8	52.8	45.2	36.3	30.1	37.7	43.5
172.5°	25.7	26.5	36.4	37.3	34.6	37.3	36.4	26.5	25.7	33.0	36.9
175°	21.8	21.4	26.8	26.3	23.4	26.3	26.8	21.4	21.8	24.0	27.3
177.5°	16.5	16.2	14.7	13.9	12.8	13.9	14.7	16.2	16.5	16.0	17.4
180°	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	31.8	31.8	31.8	31.8	31.8	31.8
2.5°	40.8	42.6	40.8	38.2	33.9	33.5
5°	55.1	56.0	55.1	50.2	42.6	38.1
7.5°	66.4	64.7	66.4	63.9	50.8	42.0
10°	74.1	73.0	74.1	72.9	60.0	47.7
12.5°	81.0	79.3	81.0	78.9	71.3	54.1
15°	86.6	84.2	86.6	84.5	81.0	60.2
17.5°	90.6	87.1	90.6	89.6	87.1	64.8
20°	92.6	87.1	92.6	93.7	91.9	68.3
22.5°	92.7	86.1	92.7	96.5	94.7	71.8
25°	91.5	83.6	91.5	98.0	96.1	74.6
27.5°	89.7	80.1	89.7	97.5	97.5	77.0
30°	86.7	75.8	86.7	97.1	98.5	78.8
32.5°	83.1	72.5	83.1	95.8	99.1	80.3
35°	80.1	68.6	80.1	93.3	99.1	82.1
37.5°	76.3	64.2	76.3	89.8	99.8	83.6
40°	72.9	60.3	72.9	86.9	99.8	84.9
42.5°	69.7	56.8	69.7	84.2	99.2	85.6
45°	66.2	53.4	66.2	81.4	98.7	85.7
47.5°	63.0	50.1	63.0	78.5	98.1	86.1
50°	60.4	46.5	60.4	75.4	96.8	86.3
52.5°	57.7	43.6	57.7	72.8	95.3	86.3
55°	55.0	40.4	55.0	69.9	93.1	86.0
57.5°	52.4	38.0	52.4	67.5	90.3	85.1
60°	50.3	35.0	50.3	64.6	87.5	83.9
62.5°	48.0	32.9	48.0	62.3	84.7	81.9
65°	46.0	30.4	46.0	59.6	81.2	78.3
67.5°	43.8	28.6	43.8	57.6	77.5	73.4
70°	41.9	26.8	41.9	55.7	73.9	67.9
72.5°	40.6	25.0	40.6	53.7	70.2	63.0
75°	38.9	23.7	38.9	52.1	67.3	59.4
77.5°	37.9	22.1	37.9	50.4	64.6	57.3
80°	36.2	21.1	36.2	49.2	63.0	55.6
82.5°	35.0	19.6	35.0	47.8	61.3	54.2
85°	34.0	18.8	34.0	46.3	60.1	53.7
87.5°	32.9	17.5	32.9	45.7	59.1	53.1
90°	32.1	16.8	32.1	44.9	58.3	53.2
92.5°	30.2	15.2	30.2	45.3	59.1	56.8
95°	29.9	16.7	29.9	45.1	59.4	57.3
97.5°	30.1	17.5	30.1	45.5	59.8	57.2
100°	30.2	18.2	30.2	45.5	59.9	57.1
102.5°	30.7	16.9	30.7	45.9	60.6	56.9
105°	30.8	17.0	30.8	46.0	60.9	57.3
107.5°	31.5	17.2	31.5	46.6	61.6	57.3
110°	31.5	17.5	31.5	46.5	62.0	57.8

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	32.2	17.6	32.2	47.1	63.6	58.3
115°	32.1	18.1	32.1	47.0	64.8	59.4
117.5°	32.8	18.7	32.8	47.3	67.0	60.1
120°	32.8	19.9	32.8	47.6	68.4	61.0
122.5°	33.3	20.5	33.3	48.3	70.8	61.5
125°	34.0	21.6	34.0	49.3	72.7	62.1
127.5°	34.4	22.2	34.4	50.0	74.4	62.5
130°	35.4	23.4	35.4	51.1	75.8	62.7
132.5°	36.4	24.4	36.4	52.1	76.5	62.6
135°	37.4	25.9	37.4	54.0	77.4	62.2
137.5°	39.1	27.4	39.1	55.6	77.5	62.1
140°	40.6	29.2	40.6	57.1	76.3	61.2
142.5°	42.8	31.5	42.8	59.6	74.9	59.6
145°	45.0	33.4	45.0	61.6	73.0	57.7
147.5°	48.0	35.9	48.0	63.6	70.6	56.1
150°	50.6	38.9	50.6	64.2	68.6	54.2
152.5°	53.8	42.5	53.8	65.3	65.5	52.4
155°	55.8	45.5	55.8	65.2	63.6	50.4
157.5°	57.2	48.5	57.2	63.9	61.0	48.7
160°	57.7	51.1	57.7	61.6	58.0	47.4
162.5°	57.4	52.9	57.4	57.3	54.6	45.2
165°	55.3	52.1	55.3	52.3	50.4	41.8
167.5°	50.6	49.0	50.6	46.8	44.9	36.9
170°	44.8	44.3	44.8	43.5	37.7	30.1
172.5°	35.9	37.5	35.9	36.9	33.0	25.7
175°	29.2	29.8	29.2	27.3	24.0	21.8
177.5°	19.7	19.9	19.7	17.4	16.0	16.5
180°	12.9	12.9	12.9	12.9	12.9	12.9

(END OF REPORT)