

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: 18663

Luminaire Tested: **642-A/4-18-CF2/13**

Issue Date: 3/3/2020

Test Information

Test Method: LM-66-11
Report Number: 18663
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: SHAPER
Catalog Number: 642-A/4-18-CF2/13
Description: FLUORESCENT WALL MOUNT LUMINAIRE WITH WHITE INTERIOR AND CURVED
WHITE PLASTIC LENS
Light Source: TWO SYLVANIA 13 WATT CPFL LAMPS

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

Ballast/Driver: -

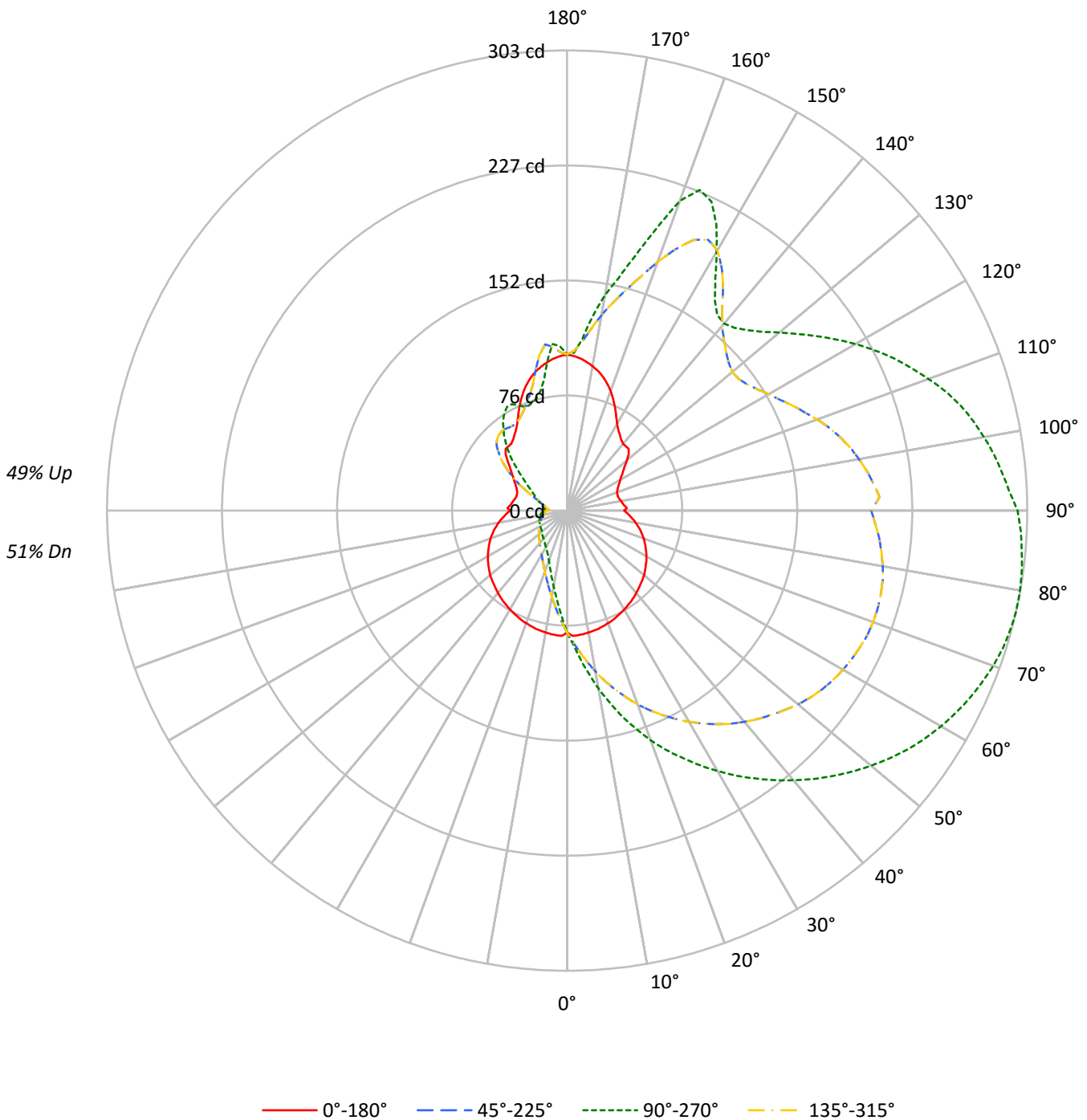
Summary

Lumens per Lamp: 1600 (1 lamp)
Luminaire Lumens: 1288.1 lumens
Efficiency: 80.5%
Efficacy: 44.4 lumens/watt
Spacing Criteria (0/90/45): 1.4 / 2.28 / 2.09
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: General Diffuse

Input Watts (W): 29
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

TEST NUMBER: 18663
CATALOG NUMBER: 642-A/4-18-CF2/13

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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	86	86	86	86	80	80	80	80	68	68	68	56	56	56	46	46	46	41
1	75	70	66	62	69	65	61	57	54	51	48	44	42	40	35	33	32	27
2	67	59	53	48	61	54	49	44	45	41	37	37	33	30	29	26	24	20
3	60	51	44	38	55	47	40	35	39	34	30	31	27	24	24	21	19	15
4	55	44	37	31	50	41	34	29	34	28	24	27	23	20	21	18	15	12
5	50	39	32	26	45	36	29	24	30	24	20	24	20	16	19	15	13	10
6	46	35	27	22	42	32	25	20	26	21	17	21	17	14	17	13	11	8
7	42	31	24	19	38	29	22	18	24	19	15	19	15	12	15	12	9	7
8	39	28	21	16	36	26	20	15	22	16	13	18	13	10	14	11	8	6
9	36	25	19	14	33	23	17	13	20	15	11	16	12	9	13	9	7	5
10	34	23	17	13	31	21	16	12	18	13	10	15	11	8	12	9	6	5

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	Luminaire represents a point source (luminous area is zero).			
5°	No luminance values can be calculated.			
10°				
15°				
20°				
25°				
30°				
35°				
40°				
45°				
50°				
55°				
60°				
65°				
70°				
75°				
80°				
85°				



TEST NUMBER: 18663

CATALOG NUMBER: 642-A/4-18-CF2/13

ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	7.8	0.6	0.5
10°-20°	24.4	1.9	1.5
20°-30°	42.8	3.3	2.7
30°-40°	62.4	4.8	3.9
40°-50°	81.5	6.3	5.1
50°-60°	98.5	7.6	6.2
60°-70°	110.7	8.6	6.9
70°-80°	116.7	9.1	7.3
80°-90°	114.9	8.9	7.2
90°-100°	110.6	8.6	6.9
100°-110°	101.7	7.9	6.4
110°-120°	90.7	7.0	5.7
120°-130°	82.0	6.4	5.1
130°-140°	75.4	5.9	4.7
140°-150°	68.2	5.3	4.3
150°-160°	56.5	4.4	3.5
160°-170°	32.9	2.6	2.1
170°-180°	10.4	0.8	0.7
0°-30°	75.0	5.8	4.7
0°-40°	137.3	10.7	8.6
0°-60°	317.3	24.6	19.8
0°-90°	659.6	51.2	41.2
90°-120°	303.0	23.5	18.9
90°-150°	528.7	41.0	33.0
90°-180°	628.0	48.8	39.3
0°-180°	1288.1	100.0	80.5

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	80	80	80	80	80	
5°	82	98	82	63	82	8
15°	80	140	80	42	80	23
25°	77	180	77	31	77	36
35°	73	215	73	26	73	46
45°	68	247	68	23	68	53
55°	63	274	63	21	63	57
65°	57	292	57	20	57	57
75°	50	302	50	19	50	53
85°	42	300	42	17	42	35
90°	38	297	38	16	38	21
95°	38	288	38	15	38	31
105°	35	268	35	18	35	37
115°	37	237	37	24	37	37
125°	45	200	45	34	45	40
135°	57	168	57	54	57	43
145°	61	169	61	73	61	38
155°	75	225	75	76	75	34
165°	91	174	91	77	91	26
175°	101	113	101	110	101	9
180°	103	103	103	103	103	



TEST NUMBER: 18663

CATALOG NUMBER: 642-A/4-18-CF2/13

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	80.3	80.3	80.3	80.3	80.3	80.3	80.3	80.3	80.3	80.3	80.3
2.5°	82.6	84.6	86.5	87.5	87.8	87.5	86.5	84.6	82.6	77.7	74.0
5°	82.4	88.3	93.3	96.8	97.7	96.8	93.3	88.3	82.4	74.4	68.2
7.5°	82.0	91.7	100.3	106.4	108.1	106.4	100.3	91.7	82.0	71.1	62.6
10°	81.5	95.1	107.6	116.6	119.0	116.6	107.6	95.1	81.5	67.6	57.7
12.5°	81.0	98.5	114.9	126.1	129.4	126.1	114.9	98.5	81.0	64.5	53.5
15°	80.5	101.9	121.9	136.0	140.4	136.0	121.9	101.9	80.5	61.2	49.4
17.5°	79.6	104.9	128.8	145.6	150.5	145.6	128.8	104.9	79.6	58.4	46.0
20°	78.9	107.8	135.8	155.1	160.9	155.1	135.8	107.8	78.9	55.8	42.7
22.5°	78.2	110.8	142.3	163.9	170.7	163.9	142.3	110.8	78.2	53.5	40.0
25°	77.1	113.4	148.5	172.4	179.6	172.4	148.5	113.4	77.1	51.0	37.5
27.5°	76.2	116.1	154.7	180.9	189.1	180.9	154.7	116.1	76.2	48.9	35.4
30°	75.3	118.6	160.5	188.8	197.9	188.8	160.5	118.6	75.3	46.9	33.5
32.5°	74.1	121.1	166.3	197.3	207.0	197.3	166.3	121.1	74.1	44.8	31.9
35°	73.2	123.2	171.7	204.7	215.3	204.7	171.7	123.2	73.2	43.1	30.5
37.5°	72.0	125.1	176.9	212.0	223.8	212.0	176.9	125.1	72.0	41.3	29.2
40°	70.8	126.8	181.5	219.2	231.7	219.2	181.5	126.8	70.8	39.6	27.9
42.5°	69.6	127.9	186.1	226.2	239.7	226.2	186.1	127.9	69.6	38.1	26.9
45°	68.4	129.2	190.2	233.0	247.2	233.0	190.2	129.2	68.4	36.7	25.9
47.5°	67.3	130.2	194.3	239.2	254.4	239.2	194.3	130.2	67.3	35.0	25.1
50°	66.1	131.1	198.5	245.5	261.3	245.5	198.5	131.1	66.1	33.8	24.2
52.5°	64.7	131.7	202.0	251.1	267.8	251.1	202.0	131.7	64.7	32.4	23.4
55°	63.2	131.7	205.1	256.7	274.0	256.7	205.1	131.7	63.2	30.9	22.8
57.5°	61.8	131.7	207.6	261.3	279.3	261.3	207.6	131.7	61.8	29.6	22.0
60°	60.2	131.1	209.7	265.1	284.2	265.1	209.7	131.1	60.2	28.2	21.3
62.5°	58.7	130.7	211.4	268.5	288.5	268.5	211.4	130.7	58.7	27.2	20.7
65°	57.0	129.8	212.8	271.9	292.4	271.9	212.8	129.8	57.0	25.7	19.9
67.5°	55.3	129.0	214.0	274.6	295.7	274.6	214.0	129.0	55.3	24.6	19.3
70°	53.7	127.8	214.4	276.9	298.6	276.9	214.4	127.8	53.7	23.4	18.7
72.5°	51.7	126.3	214.4	278.3	300.9	278.3	214.4	126.3	51.7	22.2	18.0
75°	49.9	124.5	213.8	279.0	302.2	279.0	213.8	124.5	49.9	21.1	17.4
77.5°	47.8	122.2	212.8	279.2	303.0	279.2	212.8	122.2	47.8	19.9	16.6
80°	45.7	119.9	211.1	278.3	302.8	278.3	211.1	119.9	45.7	18.9	16.0
82.5°	43.7	117.0	208.7	276.9	302.0	276.9	208.7	117.0	43.7	17.6	15.3
85°	41.5	114.1	206.2	275.0	300.5	275.0	206.2	114.1	41.5	16.8	14.7
87.5°	39.6	110.9	203.2	273.0	298.9	273.0	203.2	110.9	39.6	15.7	14.1
90°	37.5	107.8	200.2	270.2	296.6	270.2	200.2	107.8	37.5	14.9	13.7
92.5°	39.4	116.3	205.9	270.4	291.4	270.4	205.9	116.3	39.4	14.1	11.8
95°	37.8	113.7	202.6	266.7	287.5	266.7	202.6	113.7	37.8	14.5	12.6
97.5°	36.8	110.9	199.1	262.8	283.5	262.8	199.1	110.9	36.8	15.1	13.5
100°	36.1	108.1	195.1	258.2	278.7	258.2	195.1	108.1	36.1	16.1	14.5
102.5°	35.2	105.3	191.0	253.7	273.7	253.7	191.0	105.3	35.2	17.8	15.7
105°	34.7	102.6	186.2	248.1	268.0	248.1	186.2	102.6	34.7	19.7	17.2
107.5°	34.7	99.6	181.0	241.6	261.2	241.6	181.0	99.6	34.7	22.0	18.9
110°	35.0	97.0	175.3	234.4	253.3	234.4	175.3	97.0	35.0	24.0	21.3



TEST NUMBER: 18663

CATALOG NUMBER: 642-A/4-18-CF2/13

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	35.8	96.0	169.2	226.9	245.2	226.9	169.2	96.0	35.8	26.5	24.5
115°	37.0	96.8	163.6	219.6	237.3	219.6	163.6	96.8	37.0	29.2	28.2
117.5°	38.6	99.6	158.0	211.4	228.4	211.4	158.0	99.6	38.6	32.4	33.0
120°	40.4	103.5	153.3	203.2	219.4	203.2	153.3	103.5	40.4	34.8	38.6
122.5°	42.5	107.6	148.5	194.5	209.7	194.5	148.5	107.6	42.5	37.5	43.9
125°	44.9	111.4	144.8	186.5	200.3	186.5	144.8	111.4	44.9	40.2	49.1
127.5°	47.7	114.9	142.3	178.6	191.0	178.6	142.3	114.9	47.7	42.9	54.3
130°	51.3	119.9	142.0	171.5	182.3	171.5	142.0	119.9	51.3	45.6	58.7
132.5°	55.0	126.5	144.2	165.1	174.2	165.1	144.2	126.5	55.0	48.3	62.9
135°	57.3	131.7	147.9	160.7	168.0	160.7	147.9	131.7	57.3	51.0	65.5
137.5°	57.3	134.6	152.7	158.4	163.2	158.4	152.7	134.6	57.3	53.9	66.9
140°	57.3	134.4	158.6	158.9	160.7	158.9	158.6	134.4	57.3	56.8	67.6
142.5°	58.6	132.7	167.5	163.5	162.3	163.5	167.5	132.7	58.6	59.9	67.6
145°	60.6	131.5	179.0	172.1	169.4	172.1	179.0	131.5	60.6	63.0	66.8
147.5°	62.7	129.0	189.5	183.9	181.5	183.9	189.5	129.0	62.7	66.3	66.3
150°	65.8	125.9	197.9	199.9	196.8	199.9	197.9	125.9	65.8	69.9	66.8
152.5°	69.9	123.2	201.0	214.9	212.6	214.9	201.0	123.2	69.9	74.2	68.0
155°	74.6	121.1	196.6	225.9	224.6	225.9	196.6	121.1	74.6	79.2	70.3
157.5°	79.3	118.8	186.2	226.5	228.5	226.5	186.2	118.8	79.3	84.4	73.0
160°	83.7	116.7	174.0	210.3	217.0	210.3	174.0	116.7	83.7	89.6	76.5
162.5°	87.7	114.3	161.6	190.0	194.0	190.0	161.6	114.3	87.7	95.1	80.7
165°	91.2	112.2	150.5	173.4	173.8	173.4	150.5	112.2	91.2	100.0	86.5
167.5°	94.1	110.1	140.4	158.0	156.8	158.0	140.4	110.1	94.1	103.3	95.1
170°	96.5	107.4	130.7	144.2	144.2	144.2	130.7	107.4	96.5	103.9	104.3
172.5°	98.7	104.7	120.7	130.1	129.0	130.1	120.7	104.7	98.7	103.9	110.4
175°	100.6	103.0	110.8	115.5	113.0	115.5	110.8	103.0	100.6	103.0	108.2
177.5°	101.8	102.6	105.2	105.6	103.9	105.6	105.2	102.6	101.8	102.6	104.5
180°	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8	102.8



TEST NUMBER: 18663

CATALOG NUMBER: 642-A/4-18-CF2/13

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	80.3	80.3	80.3	80.3	80.3	80.3
2.5°	71.8	71.1	71.8	74.0	77.7	82.6
5°	64.3	63.2	64.3	68.2	74.4	82.4
7.5°	57.8	56.6	57.8	62.6	71.1	82.0
10°	52.5	50.8	52.5	57.7	67.6	81.5
12.5°	47.7	46.0	47.7	53.5	64.5	81.0
15°	43.6	41.7	43.6	49.4	61.2	80.5
17.5°	40.0	38.1	40.0	46.0	58.4	79.6
20°	36.7	35.0	36.7	42.7	55.8	78.9
22.5°	34.2	32.5	34.2	40.0	53.5	78.2
25°	32.1	30.7	32.1	37.5	51.0	77.1
27.5°	30.2	29.0	30.2	35.4	48.9	76.2
30°	29.0	27.8	29.0	33.5	46.9	75.3
32.5°	27.8	26.8	27.8	31.9	44.8	74.1
35°	26.8	25.7	26.8	30.5	43.1	73.2
37.5°	25.7	24.9	25.7	29.2	41.3	72.0
40°	25.1	24.2	25.1	27.9	39.6	70.8
42.5°	24.2	23.6	24.2	26.9	38.1	69.6
45°	23.6	23.0	23.6	25.9	36.7	68.4
47.5°	23.0	22.3	23.0	25.1	35.0	67.3
50°	22.3	21.7	22.3	24.2	33.8	66.1
52.5°	21.7	21.3	21.7	23.4	32.4	64.7
55°	21.1	20.9	21.1	22.8	30.9	63.2
57.5°	20.7	20.7	20.7	22.0	29.6	61.8
60°	20.3	20.3	20.3	21.3	28.2	60.2
62.5°	19.9	20.1	19.9	20.7	27.2	58.7
65°	19.7	19.9	19.7	19.9	25.7	57.0
67.5°	19.3	19.7	19.3	19.3	24.6	55.3
70°	18.9	19.3	18.9	18.7	23.4	53.7
72.5°	18.7	19.0	18.7	18.0	22.2	51.7
75°	18.3	18.9	18.3	17.4	21.1	49.9
77.5°	17.8	18.4	17.8	16.6	19.9	47.8
80°	17.2	18.0	17.2	16.0	18.9	45.7
82.5°	16.8	17.4	16.8	15.3	17.6	43.7
85°	16.4	16.8	16.4	14.7	16.8	41.5
87.5°	15.7	16.1	15.7	14.1	15.7	39.6
90°	15.3	15.7	15.3	13.7	14.9	37.5
92.5°	13.5	14.5	13.5	11.8	14.1	39.4
95°	14.1	15.1	14.1	12.6	14.5	37.8
97.5°	14.9	15.7	14.9	13.5	15.1	36.8
100°	15.7	16.4	15.7	14.5	16.1	36.1
102.5°	16.6	17.2	16.6	15.7	17.8	35.2
105°	17.8	18.3	17.8	17.2	19.7	34.7
107.5°	18.9	19.3	18.9	18.9	22.0	34.7
110°	20.3	20.7	20.3	21.3	24.0	35.0



TEST NUMBER: 18663

CATALOG NUMBER: 642-A/4-18-CF2/13

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	22.0	22.0	22.0	24.5	26.5	35.8
115°	24.0	23.6	24.0	28.2	29.2	37.0
117.5°	26.3	25.7	26.3	33.0	32.4	38.6
120°	29.0	27.9	29.0	38.6	34.8	40.4
122.5°	31.9	30.9	31.9	43.9	37.5	42.5
125°	35.4	34.2	35.4	49.1	40.2	44.9
127.5°	39.4	38.3	39.4	54.3	42.9	47.7
130°	43.9	43.3	43.9	58.7	45.6	51.3
132.5°	49.8	48.9	49.8	62.9	48.3	55.0
135°	55.6	54.5	55.6	65.5	51.0	57.3
137.5°	61.3	59.5	61.3	66.9	53.9	57.3
140°	67.2	64.5	67.2	67.6	56.8	57.3
142.5°	71.5	69.1	71.5	67.6	59.9	58.6
145°	74.7	73.4	74.7	66.8	63.0	60.6
147.5°	76.3	76.7	76.3	66.3	66.3	62.7
150°	75.9	79.0	75.9	66.8	69.9	65.8
152.5°	74.0	79.0	74.0	68.0	74.2	69.9
155°	72.0	76.5	72.0	70.3	79.2	74.6
157.5°	72.0	74.0	72.0	73.0	84.4	79.3
160°	73.2	73.7	73.2	76.5	89.6	83.7
162.5°	75.4	74.7	75.4	80.7	95.1	87.7
165°	79.0	77.0	79.0	86.5	100.0	91.2
167.5°	84.2	80.9	84.2	95.1	103.3	94.1
170°	93.1	87.5	93.1	104.3	103.9	96.5
172.5°	105.3	99.3	105.3	110.4	103.9	98.7
175°	111.4	110.1	111.4	108.2	103.0	100.6
177.5°	106.4	108.2	106.4	104.5	102.6	101.8
180°	102.8	102.8	102.8	102.8	102.8	102.8

(END OF REPORT)