

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P176125

Luminaire Tested: **2BCLED-LD4-16SL-F-UNV-L840-CD1-U**

Test Date: 04/05/15



Test Information

Test Method: LM-79-08
Report Number: P176125
Test Lab: INNOVATION CENTER-P3
Test Date: 04/05/15
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 2BCLED-LD4-16SL-F-UNV-L840-CD1-U
Description:
Light Source: (56) COOPER LIGHTING 4000K LEDS
Ballast/Driver: (1) ELECTRONIC DRIVER

Summary

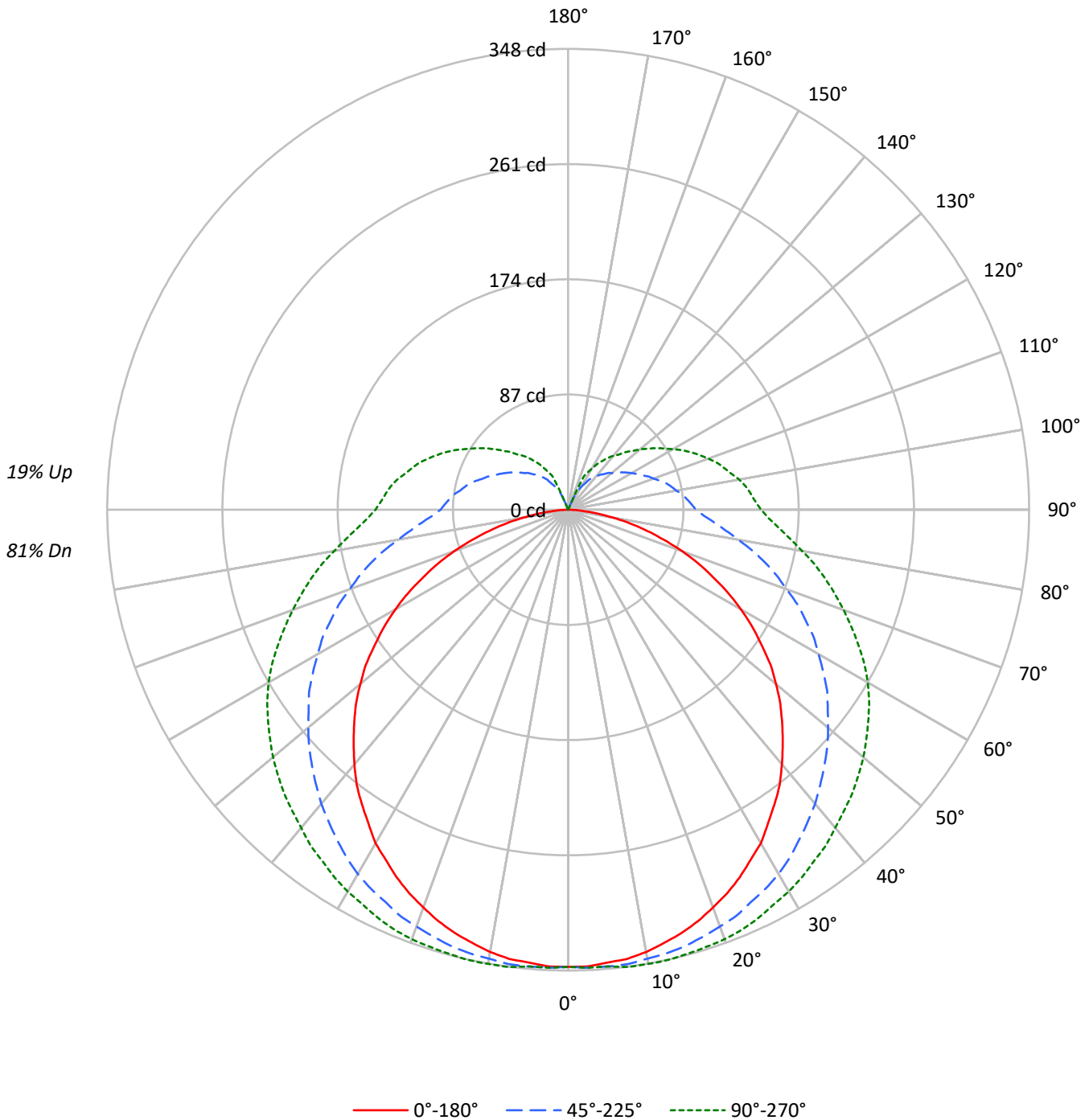
Lumens per Lamp: N/A
Luminaire Lumens: 1645.6 lumens
Efficiency: N/A
Efficacy: 87.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.44 / 1.51
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 2' x H: 0.21')
CIE Type: Semi-Direct

Input Watts (W): 18.9
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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	115	115	115	115	110	110	110	110	101	101	101	92	92	92	85	85	85	81
1	102	96	91	86	97	92	87	83	84	80	77	77	74	71	70	68	66	62
2	91	82	74	68	87	78	71	65	72	66	61	66	61	57	60	56	53	50
3	83	71	62	55	78	68	60	53	62	56	50	57	51	47	52	48	44	41
4	75	62	53	46	71	60	51	44	55	48	42	50	44	39	46	41	37	34
5	69	55	46	39	65	53	44	38	49	41	36	45	39	34	41	36	32	29
6	63	49	40	33	60	48	39	33	44	36	31	40	34	29	37	32	27	25
7	59	45	36	29	56	43	34	28	40	32	27	37	30	26	34	28	24	22
8	54	41	32	26	52	39	31	25	36	29	24	33	27	23	31	25	21	19
9	51	37	29	23	48	36	28	22	33	26	21	31	25	20	28	23	19	17
10	47	34	26	21	45	33	25	20	31	24	19	28	22	18	26	21	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4954	4954	4954
5°	4900	4792	4756
10°	4853	4635	4623
15°	4783	4505	4492
20°	4703	4374	4385
25°	4626	4250	4278
30°	4547	4147	4177
35°	4433	4017	4083
40°	4325	3903	4006
45°	4198	3785	3956
50°	4070	3675	3908
55°	3881	3585	3859
60°	3662	3464	3821
65°	3356	3356	3747
70°	2975	3222	3676
75°	2456	3109	3623
80°	1756	2949	3570
85°	849	2876	3580



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.0	2.0
10°-20°	96.1	5.8
20°-30°	150.1	9.1
30°-40°	188.9	11.5
40°-50°	208.8	12.7
50°-60°	209.1	12.7
60°-70°	188.9	11.5
70°-80°	152.1	9.2
80°-90°	110.6	6.7
90°-100°	88.5	5.4
100°-110°	73.5	4.5
110°-120°	57.0	3.5
120°-130°	40.9	2.5
130°-140°	27.1	1.6
140°-150°	15.7	1.0
150°-160°	5.1	0.3
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	279.2	17.0
0°-40°	468.1	28.4
0°-60°	886.1	53.8
0°-90°	1337.7	81.3
90°-120°	219.0	13.3
90°-150°	302.8	18.4
90°-180°	308.0	18.7
0°-180°	1645.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	345	345	345	345	345	
5°	343	345	346	347	346	33
15°	331	334	341	347	347	93
25°	306	314	327	337	340	141
35°	272	285	304	319	324	170
45°	228	247	274	295	303	176
55°	178	202	239	267	277	160
65°	121	152	198	230	242	120
75°	62	102	154	188	201	65
85°	11	57	111	146	160	14
90°	0	44	96	133	146	1
95°	0	39	90	125	138	0
105°	0	30	77	110	122	0
115°	0	25	62	92	102	0
125°	0	20	49	72	81	0
135°	0	15	38	55	62	0
145°	0	10	28	40	45	0
155°	0	4	14	25	28	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2
2.5°	345.2	345.2	345.2	345.2	345.2	346.2	346.2	346.2	346.2	346.2	346.2
5°	343.2	344.2	343.2	344.2	344.2	345.2	345.2	345.2	346.2	346.2	346.2
7.5°	342.1	342.1	342.1	342.1	343.2	344.2	344.2	345.2	345.2	346.2	346.2
10°	339.1	339.1	339.1	339.1	340.1	341.1	342.1	343.2	344.2	344.2	345.2
12.5°	335.0	335.0	335.0	336.0	337.0	338.1	339.1	341.1	342.1	343.2	344.2
15°	330.9	330.9	330.9	331.9	332.9	335.0	337.0	338.1	340.1	341.1	342.1
17.5°	325.8	325.8	326.8	327.8	328.8	330.9	332.9	335.0	337.0	338.1	340.1
20°	319.6	319.6	320.6	322.7	323.7	326.8	328.8	330.9	332.9	335.0	337.0
22.5°	313.5	313.5	314.5	316.5	318.6	320.6	323.7	326.8	328.8	331.9	334.0
25°	306.3	306.3	308.3	309.4	312.4	315.5	318.6	321.7	323.7	326.8	329.9
27.5°	298.1	299.1	300.1	303.2	306.3	309.4	312.4	315.5	318.6	322.7	325.8
30°	290.9	290.9	293.0	295.0	299.1	302.2	305.3	309.4	313.5	317.6	320.6
32.5°	280.7	281.7	283.8	287.9	290.9	295.0	299.1	303.2	307.3	311.4	314.5
35°	271.5	272.5	275.6	278.6	282.7	286.8	290.9	296.1	300.1	304.2	308.3
37.5°	262.2	263.3	265.3	269.4	273.5	278.6	283.8	287.9	293.0	297.1	302.2
40°	251.0	252.0	255.1	259.2	264.3	269.4	274.5	279.7	284.8	289.9	295.0
42.5°	239.7	241.8	243.8	248.9	254.1	260.2	265.3	271.5	276.6	281.7	286.8
45°	228.4	230.5	233.6	238.7	243.8	250.0	256.1	262.2	268.4	273.5	279.7
47.5°	217.2	218.2	222.3	227.4	232.5	238.7	245.9	252.0	259.2	265.3	271.5
50°	204.9	205.9	210.0	216.1	222.3	228.4	234.6	241.8	248.9	256.1	263.3
52.5°	192.6	193.6	197.7	203.9	210.0	217.2	224.3	232.5	239.7	246.9	255.1
55°	178.2	181.3	185.4	191.6	198.7	205.9	214.1	221.3	229.5	238.7	245.9
57.5°	164.9	167.0	172.1	179.3	186.4	194.6	202.8	212.1	220.2	228.4	236.6
60°	150.6	153.7	157.8	166.0	173.1	181.3	190.5	200.8	210.0	218.2	227.4
62.5°	136.2	138.3	144.4	151.6	159.8	169.0	179.3	189.5	199.8	209.0	217.2
65°	120.9	124.0	130.1	138.3	147.5	156.7	168.0	178.2	188.5	197.7	206.9
67.5°	106.5	109.6	115.8	125.0	134.2	144.4	156.7	167.0	177.2	187.5	196.7
70°	91.2	94.2	101.4	110.6	120.9	133.2	144.4	155.7	166.0	175.2	185.4
72.5°	75.8	79.9	87.1	97.3	108.6	120.9	132.1	143.4	153.7	164.9	174.1
75°	61.5	65.6	73.8	84.0	96.3	107.6	119.9	132.1	142.4	153.7	162.9
77.5°	48.1	51.2	60.4	71.7	84.0	96.3	108.6	119.9	131.1	142.4	151.6
80°	33.8	37.9	47.1	59.4	71.7	84.0	96.3	108.6	119.9	130.1	140.3
82.5°	21.5	26.6	35.9	48.1	60.4	73.8	86.0	97.3	109.6	119.9	130.1
85°	11.3	16.4	26.6	37.9	51.2	63.5	75.8	88.1	99.4	110.6	119.9
87.5°	4.1	9.2	18.4	30.7	43.0	55.3	68.6	79.9	91.2	102.4	111.7
90°	0.0	5.1	14.3	25.6	37.9	50.2	62.5	74.8	86.0	96.3	106.5
92.5°	0.0	4.1	12.3	23.6	34.8	48.1	59.4	71.7	83.0	93.2	102.4
95°	0.0	3.1	10.2	21.5	32.8	45.1	57.4	68.6	79.9	90.1	99.4
97.5°	0.0	3.1	9.2	19.5	30.7	42.0	54.3	65.6	76.8	87.1	96.3
100°	0.0	3.1	9.2	17.4	28.7	40.0	51.2	62.5	73.8	83.0	93.2
102.5°	0.0	3.1	8.2	16.4	26.6	37.9	48.1	59.4	69.7	79.9	89.1
105°	0.0	2.0	8.2	16.4	25.6	34.8	46.1	56.3	66.6	76.8	85.0
107.5°	0.0	2.0	8.2	15.4	23.6	32.8	43.0	53.3	63.5	72.7	82.0
110°	0.0	2.0	7.2	14.3	22.5	31.8	41.0	50.2	60.4	68.6	77.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.0	2.0	7.2	14.3	21.5	29.7	38.9	48.1	57.4	65.6	73.8
115°	0.0	2.0	7.2	13.3	20.5	28.7	36.9	45.1	53.3	61.5	69.7
117.5°	0.0	2.0	6.1	12.3	19.5	27.7	34.8	43.0	50.2	58.4	65.6
120°	0.0	1.0	6.1	12.3	18.4	25.6	32.8	40.0	48.1	55.3	62.5
122.5°	0.0	1.0	5.1	11.3	18.4	24.6	31.8	37.9	45.1	52.2	58.4
125°	0.0	1.0	5.1	10.2	17.4	23.6	29.7	36.9	43.0	49.2	55.3
127.5°	0.0	1.0	5.1	10.2	16.4	22.5	28.7	34.8	41.0	46.1	51.2
130°	0.0	1.0	4.1	9.2	15.4	20.5	26.6	32.8	37.9	43.0	48.1
132.5°	0.0	1.0	4.1	8.2	14.3	19.5	25.6	30.7	35.9	41.0	46.1
135°	0.0	1.0	3.1	8.2	12.3	18.4	23.6	28.7	33.8	37.9	43.0
137.5°	0.0	1.0	3.1	7.2	11.3	16.4	21.5	26.6	31.8	35.9	40.0
140°	0.0	1.0	2.0	6.1	10.2	14.3	19.5	24.6	28.7	32.8	36.9
142.5°	0.0	0.0	2.0	5.1	9.2	13.3	17.4	21.5	26.6	30.7	33.8
145°	0.0	0.0	2.0	4.1	8.2	11.3	15.4	19.5	23.6	27.7	30.7
147.5°	0.0	0.0	1.0	3.1	6.1	10.2	13.3	16.4	20.5	23.6	27.7
150°	0.0	0.0	1.0	3.1	5.1	8.2	11.3	14.3	17.4	20.5	23.6
152.5°	0.0	0.0	1.0	2.0	4.1	7.2	9.2	12.3	15.4	17.4	20.5
155°	0.0	0.0	1.0	2.0	3.1	5.1	8.2	10.2	12.3	14.3	17.4
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2
2.5°	346.2	346.2	346.2	346.2	346.2	346.2	346.2	346.2
5°	346.2	346.2	346.2	347.3	347.3	346.2	346.2	346.2
7.5°	346.2	347.3	347.3	348.3	347.3	348.3	347.3	348.3
10°	346.2	346.2	347.3	347.3	348.3	348.3	348.3	348.3
12.5°	345.2	346.2	347.3	347.3	347.3	348.3	348.3	348.3
15°	343.2	344.2	346.2	347.3	347.3	347.3	347.3	347.3
17.5°	341.1	343.2	344.2	345.2	346.2	346.2	346.2	346.2
20°	339.1	341.1	342.1	343.2	344.2	344.2	345.2	345.2
22.5°	336.0	338.1	339.1	341.1	342.1	342.1	343.2	343.2
25°	331.9	334.0	336.0	338.1	339.1	339.1	340.1	340.1
27.5°	327.8	329.9	332.9	334.0	335.0	336.0	336.0	336.0
30°	322.7	325.8	327.8	329.9	331.9	331.9	332.9	332.9
32.5°	317.6	320.6	323.7	324.7	326.8	327.8	328.8	328.8
35°	312.4	315.5	317.6	320.6	321.7	323.7	323.7	323.7
37.5°	305.3	309.4	312.4	314.5	316.5	317.6	318.6	319.6
40°	299.1	302.2	306.3	309.4	311.4	312.4	313.5	313.5
42.5°	292.0	296.1	299.1	303.2	305.3	306.3	308.3	308.3
45°	284.8	288.9	293.0	297.1	299.1	301.2	302.2	303.2
47.5°	276.6	281.7	286.8	289.9	293.0	295.0	296.1	297.1
50°	269.4	274.5	279.7	283.8	286.8	288.9	289.9	290.9
52.5°	261.2	267.4	272.5	276.6	279.7	281.7	283.8	283.8
55°	253.0	259.2	264.3	269.4	272.5	274.5	276.6	276.6
57.5°	243.8	251.0	256.1	261.2	264.3	267.4	268.4	269.4
60°	234.6	241.8	246.9	252.0	256.1	258.1	260.2	261.2
62.5°	225.4	231.5	238.7	242.8	246.9	248.9	251.0	252.0
65°	215.1	222.3	228.4	232.5	237.7	239.7	241.8	241.8
67.5°	204.9	212.1	218.2	223.3	227.4	229.5	231.5	231.5
70°	193.6	200.8	206.9	212.1	216.1	219.2	221.3	221.3
72.5°	182.3	190.5	196.7	201.8	205.9	209.0	211.0	211.0
75°	171.1	179.3	185.4	191.6	195.7	198.7	199.8	200.8
77.5°	159.8	168.0	174.1	180.3	184.4	187.5	189.5	190.5
80°	148.5	156.7	162.9	169.0	173.1	176.2	178.2	179.3
82.5°	138.3	146.5	152.6	158.8	162.9	166.0	168.0	169.0
85°	129.1	136.2	143.4	148.5	153.7	156.7	158.8	159.8
87.5°	120.9	129.1	135.2	141.4	145.5	148.5	150.6	151.6
90°	114.7	122.9	130.1	135.2	140.3	142.4	144.4	145.5
92.5°	111.7	119.9	126.0	132.1	136.2	139.3	141.4	141.4
95°	108.6	115.8	122.9	128.0	133.2	136.2	138.3	138.3
97.5°	105.5	112.7	119.9	125.0	129.1	132.1	134.2	135.2
100°	101.4	108.6	115.8	120.9	125.0	128.0	130.1	131.1
102.5°	97.3	105.5	111.7	116.8	120.9	124.0	126.0	126.0
105°	93.2	100.4	107.6	112.7	116.8	119.9	121.9	121.9
107.5°	89.1	96.3	103.5	108.6	111.7	114.7	116.8	117.8
110°	86.0	92.2	98.3	103.5	107.6	110.6	111.7	112.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	80.9	88.1	94.2	98.3	102.4	105.5	106.5	107.6
115°	76.8	83.0	89.1	94.2	97.3	100.4	101.4	102.4
117.5°	72.7	78.9	84.0	89.1	92.2	95.3	96.3	97.3
120°	68.6	74.8	79.9	84.0	87.1	89.1	91.2	91.2
122.5°	64.5	69.7	74.8	78.9	82.0	84.0	86.0	86.0
125°	60.4	65.6	70.7	73.8	76.8	78.9	80.9	80.9
127.5°	56.3	61.5	65.6	69.7	71.7	73.8	75.8	75.8
130°	53.3	57.4	61.5	64.5	67.6	69.7	70.7	70.7
132.5°	50.2	54.3	57.4	60.4	62.5	64.5	65.6	65.6
135°	47.1	50.2	53.3	56.3	58.4	59.4	60.4	61.5
137.5°	44.0	47.1	50.2	52.2	54.3	55.3	56.3	56.3
140°	41.0	44.0	46.1	49.2	50.2	51.2	52.2	53.3
142.5°	37.9	40.0	43.0	45.1	47.1	48.1	48.1	49.2
145°	33.8	36.9	38.9	41.0	43.0	44.0	44.0	45.1
147.5°	30.7	33.8	35.9	37.9	38.9	40.0	40.0	41.0
150°	26.6	29.7	31.8	33.8	34.8	35.9	35.9	35.9
152.5°	23.6	25.6	28.7	29.7	30.7	31.8	31.8	31.8
155°	19.5	21.5	24.6	25.6	26.6	27.7	27.7	27.7
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)