

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: P176124

Luminaire Tested: **2BCLED-LD4-16SL-F-UNV-L830-CD1-U**

Test Date: 04/05/15



Test Information

Test Method: LM-79-08
Report Number: P176124
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-L830-CD1-U
Description:
Light Source: (56) COOPER LIGHTING 3000K LEDS
Ballast/Driver: (1) ELECTRONIC DRIVER

Summary

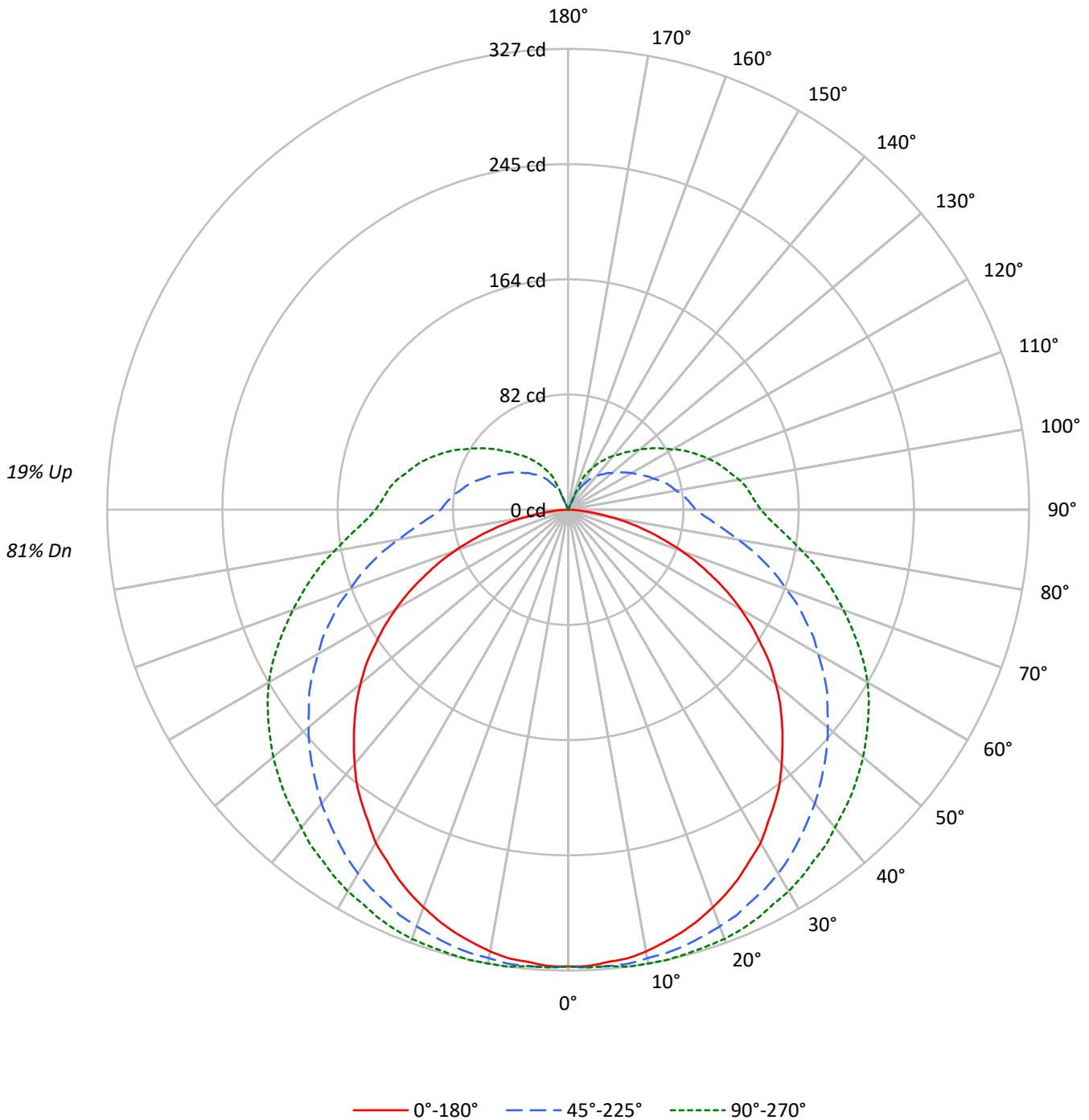
Lumens per Lamp: N/A
Luminaire Lumens: 1544.9 lumens
Efficiency: N/A
Efficacy: 81.7 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.44 / 1.51
Luminous Opening: Rectangular w/ Sides (W: 2' x L: 0.38' x H: 0.21')
CIE Type: Semi-Direct

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°	4651	4651	4651
5°	4427	4500	4641
10°	4225	4351	4680
15°	4017	4229	4712
20°	3813	4106	4769
25°	3616	3990	4822
30°	3427	3892	4887
35°	3215	3772	4962
40°	3011	3665	5071
45°	2799	3554	5233
50°	2583	3450	5424
55°	2334	3365	5657
60°	2068	3251	5962
65°	1759	3151	6301
70°	1422	3025	6776
75°	1041	2919	7527
80°	631	2768	8744
85°	237	2702	11275



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.9	2.0
10°-20°	90.3	5.8
20°-30°	140.9	9.1
30°-40°	177.3	11.5
40°-50°	196.0	12.7
50°-60°	196.3	12.7
60°-70°	177.4	11.5
70°-80°	142.8	9.2
80°-90°	103.8	6.7
90°-100°	83.1	5.4
100°-110°	69.0	4.5
110°-120°	53.5	3.5
120°-130°	38.4	2.5
130°-140°	25.4	1.6
140°-150°	14.7	1.0
150°-160°	4.8	0.3
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	262.1	17.0
0°-40°	439.4	28.4
0°-60°	831.8	53.8
0°-90°	1255.8	81.3
90°-120°	205.6	13.3
90°-150°	284.2	18.4
90°-180°	289.0	18.7
0°-180°	1544.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	324	324	324	324	324	
5°	322	324	325	326	325	31
15°	311	314	320	326	326	88
25°	288	295	307	316	319	133
35°	255	267	286	300	304	160
45°	214	232	257	277	285	166
55°	167	190	224	250	260	150
65°	114	143	186	216	227	113
75°	58	96	144	177	188	61
85°	11	54	104	137	150	13
90°	0	41	90	124	137	1
95°	0	37	85	118	130	0
105°	0	28	72	103	114	0
115°	0	23	58	86	96	0
125°	0	19	46	68	76	0
135°	0	14	36	51	58	0
145°	0	9	26	38	42	0
155°	0	4	14	24	26	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°	324.1	324.1	324.1	324.1	324.1	324.1	324.1	324.1	324.1	324.1	324.1
2.5°	324.1	324.1	324.1	324.1	324.1	325.1	325.1	325.1	325.1	325.1	325.1
5°	322.2	323.1	322.2	323.1	323.1	324.1	324.1	324.1	325.1	325.1	325.1
7.5°	321.2	321.2	321.2	321.2	322.2	323.1	323.1	324.1	324.1	325.1	325.1
10°	318.3	318.3	318.3	318.3	319.3	320.2	321.2	322.2	323.1	323.1	324.1
12.5°	314.5	314.5	314.5	315.4	316.4	317.4	318.3	320.2	321.2	322.2	323.1
15°	310.6	310.6	310.6	311.6	312.6	314.5	316.4	317.4	319.3	320.2	321.2
17.5°	305.8	305.8	306.8	307.7	308.7	310.6	312.6	314.5	316.4	317.4	319.3
20°	300.1	300.1	301.0	302.9	303.9	306.8	308.7	310.6	312.6	314.5	316.4
22.5°	294.3	294.3	295.2	297.2	299.1	301.0	303.9	306.8	308.7	311.6	313.5
25°	287.5	287.5	289.5	290.4	293.3	296.2	299.1	302.0	303.9	306.8	309.7
27.5°	279.9	280.8	281.8	284.7	287.5	290.4	293.3	296.2	299.1	302.9	305.8
30°	273.1	273.1	275.0	277.0	280.8	283.7	286.6	290.4	294.3	298.1	301.0
32.5°	263.5	264.5	266.4	270.2	273.1	277.0	280.8	284.7	288.5	292.4	295.2
35°	254.9	255.8	258.7	261.6	265.4	269.3	273.1	277.9	281.8	285.6	289.5
37.5°	246.2	247.2	249.1	252.9	256.8	261.6	266.4	270.2	275.0	278.9	283.7
40°	235.6	236.6	239.5	243.3	248.1	252.9	257.7	262.5	267.4	272.2	277.0
42.5°	225.0	227.0	228.9	233.7	238.5	244.3	249.1	254.9	259.7	264.5	269.3
45°	214.5	216.4	219.3	224.1	228.9	234.7	240.4	246.2	252.0	256.8	262.5
47.5°	203.9	204.8	208.7	213.5	218.3	224.1	230.8	236.6	243.3	249.1	254.9
50°	192.3	193.3	197.1	202.9	208.7	214.5	220.2	227.0	233.7	240.4	247.2
52.5°	180.8	181.8	185.6	191.4	197.1	203.9	210.6	218.3	225.0	231.8	239.5
55°	167.3	170.2	174.1	179.8	186.6	193.3	201.0	207.7	215.4	224.1	230.8
57.5°	154.8	156.8	161.6	168.3	175.0	182.7	190.4	199.1	206.8	214.5	222.2
60°	141.4	144.3	148.1	155.8	162.5	170.2	178.9	188.5	197.1	204.8	213.5
62.5°	127.9	129.8	135.6	142.3	150.0	158.7	168.3	177.9	187.5	196.2	203.9
65°	113.5	116.4	122.1	129.8	138.5	147.1	157.7	167.3	177.0	185.6	194.3
67.5°	100.0	102.9	108.7	117.3	126.0	135.6	147.1	156.8	166.4	176.0	184.6
70°	85.6	88.5	95.2	103.9	113.5	125.0	135.6	146.2	155.8	164.5	174.1
72.5°	71.2	75.0	81.7	91.4	101.9	113.5	124.1	134.6	144.3	154.8	163.5
75°	57.7	61.5	69.2	78.9	90.4	101.0	112.5	124.1	133.7	144.3	152.9
77.5°	45.2	48.1	56.7	67.3	78.9	90.4	101.9	112.5	123.1	133.7	142.3
80°	31.7	35.6	44.2	55.8	67.3	78.9	90.4	101.9	112.5	122.1	131.8
82.5°	20.2	25.0	33.7	45.2	56.7	69.2	80.8	91.4	102.9	112.5	122.1
85°	10.6	15.4	25.0	35.6	48.1	59.6	71.2	82.7	93.3	103.9	112.5
87.5°	3.8	8.7	17.3	28.9	40.4	51.9	64.4	75.0	85.6	96.2	104.8
90°	0.0	4.8	13.5	24.0	35.6	47.1	58.7	70.2	80.8	90.4	100.0
92.5°	0.0	3.8	11.5	22.1	32.7	45.2	55.8	67.3	77.9	87.5	96.2
95°	0.0	2.9	9.6	20.2	30.8	42.3	53.9	64.4	75.0	84.6	93.3
97.5°	0.0	2.9	8.7	18.3	28.9	39.4	51.0	61.5	72.1	81.7	90.4
100°	0.0	2.9	8.7	16.3	26.9	37.5	48.1	58.7	69.2	77.9	87.5
102.5°	0.0	2.9	7.7	15.4	25.0	35.6	45.2	55.8	65.4	75.0	83.7
105°	0.0	1.9	7.7	15.4	24.0	32.7	43.3	52.9	62.5	72.1	79.8
107.5°	0.0	1.9	7.7	14.4	22.1	30.8	40.4	50.0	59.6	68.3	76.9
110°	0.0	1.9	6.7	13.5	21.2	29.8	38.5	47.1	56.7	64.4	73.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.0	1.9	6.7	13.5	20.2	27.9	36.5	45.2	53.9	61.5	69.2
115°	0.0	1.9	6.7	12.5	19.2	26.9	34.6	42.3	50.0	57.7	65.4
117.5°	0.0	1.9	5.8	11.5	18.3	26.0	32.7	40.4	47.1	54.8	61.5
120°	0.0	1.0	5.8	11.5	17.3	24.0	30.8	37.5	45.2	51.9	58.7
122.5°	0.0	1.0	4.8	10.6	17.3	23.1	29.8	35.6	42.3	49.0	54.8
125°	0.0	1.0	4.8	9.6	16.3	22.1	27.9	34.6	40.4	46.2	51.9
127.5°	0.0	1.0	4.8	9.6	15.4	21.2	26.9	32.7	38.5	43.3	48.1
130°	0.0	1.0	3.8	8.7	14.4	19.2	25.0	30.8	35.6	40.4	45.2
132.5°	0.0	1.0	3.8	7.7	13.5	18.3	24.0	28.9	33.7	38.5	43.3
135°	0.0	1.0	2.9	7.7	11.5	17.3	22.1	26.9	31.7	35.6	40.4
137.5°	0.0	1.0	2.9	6.7	10.6	15.4	20.2	25.0	29.8	33.7	37.5
140°	0.0	1.0	1.9	5.8	9.6	13.5	18.3	23.1	26.9	30.8	34.6
142.5°	0.0	0.0	1.9	4.8	8.7	12.5	16.3	20.2	25.0	28.9	31.7
145°	0.0	0.0	1.9	3.8	7.7	10.6	14.4	18.3	22.1	26.0	28.9
147.5°	0.0	0.0	1.0	2.9	5.8	9.6	12.5	15.4	19.2	22.1	26.0
150°	0.0	0.0	1.0	2.9	4.8	7.7	10.6	13.5	16.3	19.2	22.1
152.5°	0.0	0.0	1.0	1.9	3.8	6.7	8.7	11.5	14.4	16.3	19.2
155°	0.0	0.0	1.0	1.9	2.9	4.8	7.7	9.6	11.5	13.5	16.3
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°	324.1	324.1	324.1	324.1	324.1	324.1	324.1	324.1
2.5°	325.1	325.1	325.1	325.1	325.1	325.1	325.1	325.1
5°	325.1	325.1	325.1	326.0	326.0	325.1	325.1	325.1
7.5°	325.1	326.0	326.0	327.0	326.0	327.0	326.0	327.0
10°	325.1	325.1	326.0	326.0	327.0	327.0	327.0	327.0
12.5°	324.1	325.1	326.0	326.0	326.0	327.0	327.0	327.0
15°	322.2	323.1	325.1	326.0	326.0	326.0	326.0	326.0
17.5°	320.2	322.2	323.1	324.1	325.1	325.1	325.1	325.1
20°	318.3	320.2	321.2	322.2	323.1	323.1	324.1	324.1
22.5°	315.4	317.4	318.3	320.2	321.2	321.2	322.2	322.2
25°	311.6	313.5	315.4	317.4	318.3	318.3	319.3	319.3
27.5°	307.7	309.7	312.6	313.5	314.5	315.4	315.4	315.4
30°	302.9	305.8	307.7	309.7	311.6	311.6	312.6	312.6
32.5°	298.1	301.0	303.9	304.9	306.8	307.7	308.7	308.7
35°	293.3	296.2	298.1	301.0	302.0	303.9	303.9	303.9
37.5°	286.6	290.4	293.3	295.2	297.2	298.1	299.1	300.1
40°	280.8	283.7	287.5	290.4	292.4	293.3	294.3	294.3
42.5°	274.1	277.9	280.8	284.7	286.6	287.5	289.5	289.5
45°	267.4	271.2	275.0	278.9	280.8	282.7	283.7	284.7
47.5°	259.7	264.5	269.3	272.2	275.0	277.0	277.9	278.9
50°	252.9	257.7	262.5	266.4	269.3	271.2	272.2	273.1
52.5°	245.2	251.0	255.8	259.7	262.5	264.5	266.4	266.4
55°	237.5	243.3	248.1	252.9	255.8	257.7	259.7	259.7
57.5°	228.9	235.6	240.4	245.2	248.1	251.0	252.0	252.9
60°	220.2	227.0	231.8	236.6	240.4	242.3	244.3	245.2
62.5°	211.6	217.3	224.1	227.9	231.8	233.7	235.6	236.6
65°	202.0	208.7	214.5	218.3	223.1	225.0	227.0	227.0
67.5°	192.3	199.1	204.8	209.7	213.5	215.4	217.3	217.3
70°	181.8	188.5	194.3	199.1	202.9	205.8	207.7	207.7
72.5°	171.2	178.9	184.6	189.5	193.3	196.2	198.1	198.1
75°	160.6	168.3	174.1	179.8	183.7	186.6	187.5	188.5
77.5°	150.0	157.7	163.5	169.3	173.1	176.0	177.9	178.9
80°	139.4	147.1	152.9	158.7	162.5	165.4	167.3	168.3
82.5°	129.8	137.5	143.3	149.1	152.9	155.8	157.7	158.7
85°	121.2	127.9	134.6	139.4	144.3	147.1	149.1	150.0
87.5°	113.5	121.2	126.9	132.7	136.6	139.4	141.4	142.3
90°	107.7	115.4	122.1	126.9	131.8	133.7	135.6	136.6
92.5°	104.8	112.5	118.3	124.1	127.9	130.8	132.7	132.7
95°	101.9	108.7	115.4	120.2	125.0	127.9	129.8	129.8
97.5°	99.1	105.8	112.5	117.3	121.2	124.1	126.0	126.9
100°	95.2	101.9	108.7	113.5	117.3	120.2	122.1	123.1
102.5°	91.4	99.1	104.8	109.6	113.5	116.4	118.3	118.3
105°	87.5	94.2	101.0	105.8	109.6	112.5	114.4	114.4
107.5°	83.7	90.4	97.1	101.9	104.8	107.7	109.6	110.6
110°	80.8	86.6	92.3	97.1	101.0	103.9	104.8	105.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	76.0	82.7	88.5	92.3	96.2	99.1	100.0	101.0
115°	72.1	77.9	83.7	88.5	91.4	94.2	95.2	96.2
117.5°	68.3	74.1	78.9	83.7	86.6	89.4	90.4	91.4
120°	64.4	70.2	75.0	78.9	81.7	83.7	85.6	85.6
122.5°	60.6	65.4	70.2	74.1	76.9	78.9	80.8	80.8
125°	56.7	61.5	66.4	69.2	72.1	74.1	76.0	76.0
127.5°	52.9	57.7	61.5	65.4	67.3	69.2	71.2	71.2
130°	50.0	53.9	57.7	60.6	63.5	65.4	66.4	66.4
132.5°	47.1	51.0	53.9	56.7	58.7	60.6	61.5	61.5
135°	44.2	47.1	50.0	52.9	54.8	55.8	56.7	57.7
137.5°	41.4	44.2	47.1	49.0	51.0	51.9	52.9	52.9
140°	38.5	41.4	43.3	46.2	47.1	48.1	49.0	50.0
142.5°	35.6	37.5	40.4	42.3	44.2	45.2	45.2	46.2
145°	31.7	34.6	36.5	38.5	40.4	41.4	41.4	42.3
147.5°	28.9	31.7	33.7	35.6	36.5	37.5	37.5	38.5
150°	25.0	27.9	29.8	31.7	32.7	33.7	33.7	33.7
152.5°	22.1	24.0	26.9	27.9	28.9	29.8	29.8	29.8
155°	18.3	20.2	23.1	24.0	25.0	26.0	26.0	26.0
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)