

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: P176113

Luminaire Tested: **4BCLED-LD4-20SL-F-UNV-L830-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P176113
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4BCLED-LD4-20SL-F-UNV-L830-CD1-U
Description: METALUX 4FT BC LED WALL BRACKET CORRIDOR LUMINAIRE WITH A
Light Source: (112) COOPER LIGHTING 3000K LEDS
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER

Summary

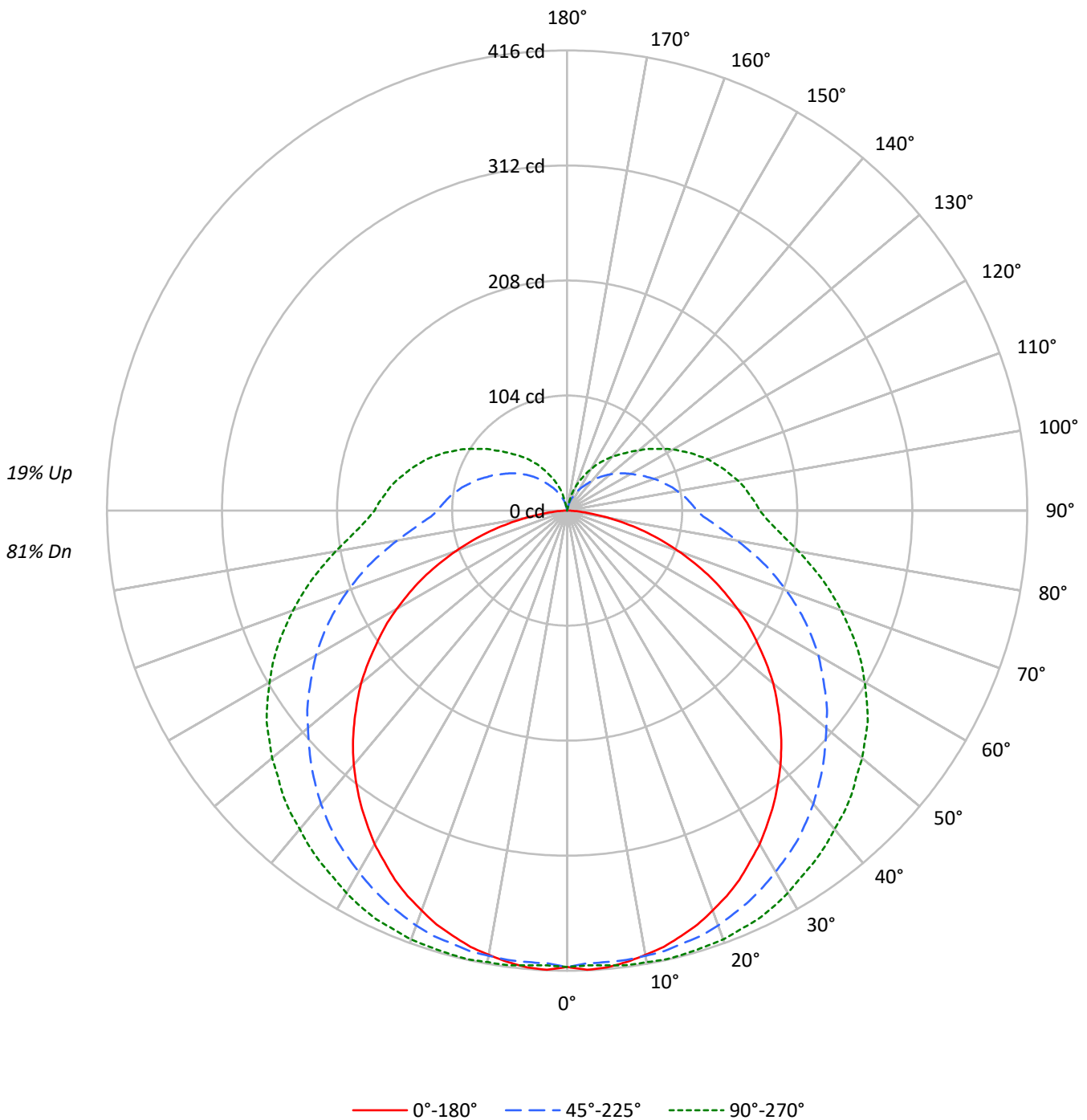
Lumens per Lamp: N/A
Luminaire Lumens: 1970.0 lumens
Efficiency: N/A
Efficacy: 90.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.44 / 1.51
Luminous Opening: Rectangular w/ Sides (W: 4' x L: 0.38' x H: 0.21')
CIE Type: Semi-Direct

Input Watts (W): 21.8
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	40
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	38	34	41	36	31	29
6	63	50	40	34	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°	2961	2961	2961
5°	2847	2844	2959
10°	2706	2768	2993
15°	2574	2697	3037
20°	2444	2636	3092
25°	2316	2569	3152
30°	2184	2503	3210
35°	2050	2448	3284
40°	1917	2384	3375
45°	1776	2321	3506
50°	1634	2258	3659
55°	1469	2207	3864
60°	1301	2160	4089
65°	1110	2099	4406
70°	886	2026	4836
75°	650	1956	5536
80°	383	1873	6779
85°	129	1848	9780



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.3	2.0
10°-20°	115.0	5.8
20°-30°	179.7	9.1
30°-40°	226.1	11.5
40°-50°	249.7	12.7
50°-60°	249.6	12.7
60°-70°	225.4	11.4
70°-80°	180.8	9.2
80°-90°	132.1	6.7
90°-100°	106.8	5.4
100°-110°	88.8	4.5
110°-120°	68.7	3.5
120°-130°	49.0	2.5
130°-140°	31.7	1.6
140°-150°	17.8	0.9
150°-160°	7.7	0.4
160°-170°	1.6	0.1
170°-180°	0.0	0.0
0°-30°	334.1	17.0
0°-40°	560.2	28.4
0°-60°	1059.5	53.8
0°-90°	1597.8	81.1
90°-120°	264.3	13.4
90°-150°	362.8	18.4
90°-180°	372.0	18.9
0°-180°	1970.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	413	413	413	413	413	
5°	414	413	410	413	413	39
15°	398	402	405	414	414	112
25°	368	377	390	404	408	170
35°	325	341	364	382	388	203
45°	272	295	327	353	364	210
55°	211	241	285	319	332	189
65°	143	182	238	275	288	141
75°	72	122	184	224	238	76
85°	12	68	133	175	190	15
90°	0	54	117	159	174	1
95°	0	48	110	151	165	0
105°	0	37	92	132	146	0
115°	0	30	75	110	123	0
125°	0	24	59	86	97	0
135°	0	17	43	66	73	0
145°	0	11	28	47	54	0
155°	0	6	16	26	33	0
165°	0	2	7	10	14	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°	412.6	412.6	412.6	412.6	412.6	412.6	412.6	412.6	412.6	412.6	412.6
2.5°	415.5	414.5	414.5	413.5	413.5	413.5	413.5	412.6	411.6	409.7	410.6
5°	414.5	413.5	412.6	412.6	412.6	412.6	412.6	412.6	410.6	409.7	410.6
7.5°	411.6	411.6	410.6	410.6	410.6	411.6	411.6	411.6	410.6	409.7	410.6
10°	407.8	407.8	406.8	406.8	408.7	408.7	409.7	409.7	408.7	408.7	409.7
12.5°	403.9	403.9	403.9	403.9	405.8	406.8	407.8	407.8	407.8	407.8	408.7
15°	398.1	398.1	398.1	399.1	401.0	402.0	403.9	404.9	404.9	404.9	407.8
17.5°	392.4	391.4	392.4	393.3	395.3	397.2	399.1	400.1	401.0	403.0	404.9
20°	384.7	384.7	385.6	387.6	389.5	391.4	394.3	396.2	397.2	399.1	402.0
22.5°	377.0	377.0	377.9	379.9	382.8	385.6	388.5	390.5	391.4	394.3	397.2
25°	368.3	368.3	369.3	371.2	375.1	378.9	381.8	383.7	386.6	389.5	393.3
27.5°	357.8	358.7	360.6	363.5	367.4	371.2	375.1	377.9	379.9	383.7	387.6
30°	348.1	349.1	351.0	353.9	358.7	362.6	367.4	370.3	374.1	377.0	381.8
32.5°	336.6	337.6	340.4	344.3	349.1	353.9	358.7	362.6	366.4	370.3	375.1
35°	325.1	327.0	328.9	333.7	338.5	344.3	349.1	353.9	358.7	363.5	368.3
37.5°	312.6	313.5	317.4	322.2	327.9	334.7	339.5	344.3	349.1	354.9	360.6
40°	300.1	301.0	304.9	309.7	316.4	323.1	328.9	333.7	340.4	346.2	352.0
42.5°	286.6	287.5	291.4	298.1	304.9	311.6	317.4	324.1	330.8	336.6	343.3
45°	272.2	274.1	277.9	284.7	291.4	299.1	305.8	312.6	319.3	327.0	333.7
47.5°	257.7	259.7	263.5	271.2	278.9	286.6	294.3	301.0	308.7	316.4	324.1
50°	243.3	244.3	250.0	256.8	265.4	273.1	281.8	289.5	298.1	305.8	314.5
52.5°	227.0	228.9	234.7	242.3	251.0	259.7	268.3	277.9	286.6	296.2	303.9
55°	210.6	213.5	219.3	227.0	236.6	246.2	255.8	265.4	275.0	284.7	294.3
57.5°	195.2	197.1	202.9	212.5	222.2	231.8	242.3	252.9	263.5	273.1	282.7
60°	177.9	180.8	187.5	196.2	206.8	217.3	228.9	240.4	252.0	262.5	272.2
62.5°	160.6	163.5	170.2	180.8	191.4	202.9	215.4	227.0	238.5	250.0	260.6
65°	143.3	146.2	153.9	164.5	175.0	188.5	201.0	213.5	226.0	237.5	248.1
67.5°	125.0	128.9	136.6	147.1	159.6	173.1	186.6	200.0	212.5	224.1	234.7
70°	106.7	110.6	118.3	130.8	144.3	158.7	173.1	185.6	198.1	210.6	221.2
72.5°	89.4	93.3	101.9	114.4	128.9	143.3	158.7	172.1	184.6	197.1	207.7
75°	72.1	75.0	85.6	99.1	114.4	129.8	144.3	158.7	170.2	183.7	194.3
77.5°	53.9	58.7	69.2	83.7	99.1	114.4	129.8	144.3	156.8	169.3	180.8
80°	38.5	43.3	54.8	69.2	84.6	101.0	115.4	129.8	143.3	155.8	167.3
82.5°	23.1	28.9	41.4	55.8	72.1	87.5	103.9	117.3	130.8	143.3	154.8
85°	11.5	17.3	29.8	45.2	60.6	76.0	91.4	105.8	119.3	132.7	144.3
87.5°	3.8	8.7	21.2	35.6	51.9	67.3	82.7	97.1	110.6	123.1	134.6
90°	0.0	4.8	16.3	30.8	46.2	61.5	76.9	91.4	104.8	117.3	128.9
92.5°	0.0	3.8	14.4	27.9	43.3	58.7	73.1	87.5	101.0	113.5	125.0
95°	0.0	3.8	12.5	26.0	40.4	54.8	69.2	83.7	97.1	109.6	121.2
97.5°	0.0	3.8	11.5	24.0	37.5	51.9	66.4	79.8	93.3	105.8	116.4
100°	0.0	2.9	10.6	22.1	34.6	49.0	62.5	76.0	89.4	101.0	112.5
102.5°	0.0	2.9	10.6	20.2	32.7	46.2	59.6	72.1	85.6	97.1	107.7
105°	0.0	2.9	10.6	19.2	30.8	43.3	55.8	69.2	80.8	92.3	102.9
107.5°	0.0	2.9	9.6	19.2	28.9	40.4	52.9	65.4	76.9	88.5	99.1
110°	0.0	2.9	9.6	18.3	27.9	38.5	50.0	61.5	73.1	83.7	94.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.0	2.9	8.7	17.3	26.9	36.5	47.1	57.7	68.3	78.9	88.5
115°	0.0	2.9	8.7	16.3	26.0	34.6	44.2	54.8	64.4	75.0	84.6
117.5°	0.0	1.9	7.7	15.4	25.0	33.7	42.3	51.9	61.5	70.2	78.9
120°	0.0	1.9	7.7	14.4	23.1	31.7	40.4	49.0	57.7	66.4	75.0
122.5°	0.0	1.9	6.7	13.5	21.2	29.8	38.5	46.2	54.8	62.5	70.2
125°	0.0	1.9	6.7	12.5	19.2	27.9	35.6	43.3	51.0	58.7	65.4
127.5°	0.0	1.0	5.8	11.5	18.3	25.0	33.7	40.4	48.1	54.8	62.5
130°	0.0	1.0	4.8	10.6	16.3	23.1	30.8	37.5	44.2	51.0	57.7
132.5°	0.0	1.0	4.8	9.6	15.4	21.2	27.9	34.6	41.4	47.1	53.9
135°	0.0	1.0	3.8	8.7	14.4	19.2	25.0	31.7	37.5	43.3	49.0
137.5°	0.0	1.0	3.8	7.7	12.5	18.3	23.1	27.9	33.7	39.4	45.2
140°	0.0	1.0	2.9	6.7	11.5	16.3	21.2	25.0	30.8	35.6	40.4
142.5°	0.0	0.0	2.9	5.8	10.6	14.4	19.2	23.1	26.9	31.7	36.5
145°	0.0	0.0	2.9	5.8	8.7	12.5	17.3	20.2	24.0	27.9	32.7
147.5°	0.0	0.0	1.9	4.8	7.7	11.5	15.4	18.3	21.2	25.0	27.9
150°	0.0	0.0	1.9	3.8	6.7	10.6	13.5	16.3	19.2	22.1	25.0
152.5°	0.0	0.0	1.0	3.8	5.8	8.7	11.5	14.4	16.3	19.2	21.2
155°	0.0	0.0	1.0	2.9	4.8	7.7	9.6	12.5	14.4	16.3	18.3
157.5°	0.0	0.0	1.0	1.9	3.8	5.8	8.7	10.6	12.5	13.5	15.4
160°	0.0	0.0	0.0	1.9	2.9	4.8	6.7	8.7	9.6	11.5	12.5
162.5°	0.0	0.0	0.0	1.0	1.9	3.8	4.8	6.7	7.7	9.6	10.6
165°	0.0	0.0	0.0	1.0	1.9	2.9	3.8	4.8	5.8	6.7	7.7
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°	412.6	412.6	412.6	412.6	412.6	412.6	412.6	412.6
2.5°	411.6	412.6	412.6	412.6	412.6	412.6	411.6	411.6
5°	411.6	412.6	412.6	413.5	413.5	413.5	412.6	412.6
7.5°	412.6	413.5	414.5	414.5	414.5	414.5	414.5	414.5
10°	411.6	413.5	413.5	414.5	414.5	415.5	414.5	414.5
12.5°	411.6	412.6	413.5	414.5	415.5	415.5	415.5	415.5
15°	409.7	411.6	413.5	413.5	414.5	415.5	415.5	414.5
17.5°	407.8	409.7	411.6	412.6	413.5	414.5	414.5	413.5
20°	404.9	407.8	409.7	411.6	411.6	412.6	412.6	412.6
22.5°	401.0	403.9	406.8	407.8	409.7	409.7	410.6	409.7
25°	397.2	400.1	403.0	404.9	405.8	406.8	407.8	407.8
27.5°	392.4	395.3	398.1	400.1	402.0	403.0	403.9	403.9
30°	386.6	389.5	393.3	395.3	397.2	398.1	399.1	399.1
32.5°	379.9	383.7	387.6	389.5	391.4	392.4	394.3	393.3
35°	373.1	377.0	380.8	383.7	385.6	387.6	387.6	388.5
37.5°	365.4	370.3	374.1	377.0	379.9	380.8	381.8	382.8
40°	357.8	361.6	366.4	370.3	372.2	375.1	376.0	376.0
42.5°	349.1	353.9	358.7	362.6	365.4	367.4	369.3	370.3
45°	339.5	346.2	352.0	354.9	358.7	361.6	362.6	363.5
47.5°	331.8	337.6	343.3	348.1	351.0	353.9	355.8	354.9
50°	322.2	328.9	334.7	339.5	343.3	345.3	347.2	348.1
52.5°	312.6	319.3	326.0	330.8	334.7	337.6	339.5	339.5
55°	302.9	309.7	316.4	322.2	326.0	328.9	330.8	331.8
57.5°	291.4	299.1	305.8	311.6	315.4	318.3	320.2	321.2
60°	280.8	288.5	295.2	301.0	304.9	308.7	310.6	310.6
62.5°	269.3	277.0	284.7	290.4	294.3	298.1	300.1	300.1
65°	256.8	265.4	272.2	277.9	282.7	285.6	288.5	288.5
67.5°	244.3	252.0	259.7	266.4	270.2	274.1	276.0	276.0
70°	230.8	239.5	247.2	253.9	257.7	261.6	263.5	263.5
72.5°	217.3	226.0	233.7	240.4	245.2	248.1	251.0	251.0
75°	203.9	212.5	220.2	227.0	231.8	235.6	237.5	238.5
77.5°	191.4	200.0	207.7	213.5	218.3	223.1	225.0	225.0
80°	177.9	186.6	194.3	201.0	205.8	209.7	211.6	212.5
82.5°	165.4	174.1	182.7	189.5	194.3	198.1	200.0	200.0
85°	154.8	163.5	171.2	177.9	183.7	186.6	188.5	189.5
87.5°	145.2	154.8	162.5	169.3	174.1	177.9	179.8	180.8
90°	139.4	148.1	155.8	162.5	167.3	171.2	173.1	174.1
92.5°	134.6	144.3	151.9	158.7	163.5	167.3	169.3	170.2
95°	130.8	140.4	148.1	153.9	159.6	163.5	165.4	165.4
97.5°	126.9	135.6	143.3	150.0	154.8	158.7	160.6	161.6
100°	122.1	130.8	138.5	145.2	150.0	153.9	155.8	156.8
102.5°	118.3	126.9	133.7	140.4	145.2	149.1	151.0	151.0
105°	112.5	121.2	128.9	135.6	140.4	143.3	146.2	146.2
107.5°	107.7	116.4	124.1	129.8	134.6	138.5	140.4	140.4
110°	102.9	111.6	118.3	124.1	128.9	132.7	134.6	135.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	98.1	105.8	112.5	118.3	123.1	126.0	127.9	128.9
115°	92.3	100.0	106.7	112.5	117.3	120.2	122.1	123.1
117.5°	87.5	95.2	101.0	106.7	110.6	114.4	116.4	116.4
120°	82.7	89.4	95.2	101.0	104.8	107.7	109.6	110.6
122.5°	76.9	83.7	89.4	94.2	98.1	101.0	102.9	103.9
125°	73.1	78.9	83.7	88.5	92.3	95.2	97.1	97.1
127.5°	68.3	74.1	78.9	82.7	86.6	88.5	90.4	91.4
130°	63.5	69.2	74.1	77.9	80.8	82.7	84.6	84.6
132.5°	59.6	64.4	69.2	72.1	75.0	76.9	77.9	78.9
135°	54.8	60.6	64.4	67.3	70.2	71.2	73.1	73.1
137.5°	50.0	55.8	60.6	63.5	65.4	66.4	68.3	68.3
140°	45.2	51.0	55.8	58.7	60.6	62.5	62.5	63.5
142.5°	41.4	45.2	50.0	53.9	55.8	57.7	58.7	58.7
145°	36.5	40.4	44.2	49.0	51.0	52.9	52.9	53.9
147.5°	31.7	35.6	39.4	43.3	46.2	47.1	48.1	49.0
150°	27.9	30.8	33.7	37.5	41.4	42.3	43.3	43.3
152.5°	24.0	26.0	28.9	31.7	35.6	37.5	38.5	38.5
155°	20.2	22.1	25.0	26.9	29.8	32.7	32.7	32.7
157.5°	17.3	19.2	20.2	22.1	24.0	26.9	27.9	28.9
160°	13.5	15.4	16.3	18.3	19.2	22.1	24.0	24.0
162.5°	10.6	11.5	12.5	13.5	15.4	16.3	19.2	19.2
165°	8.7	8.7	9.6	10.6	10.6	11.5	13.5	14.4
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)