

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: P188902

Luminaire Tested: **ALT-120-N-BLK-VL-PDH-5W-N06-N**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P188902
Test Lab: Intertek
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: ALT-120-N-BLK-VL-PDH-5W-N06-N
Description: Altus 120, 11,000, Wide Distribution, 90-277VAC
Light Source: -
Ballast/Driver: -

Summary

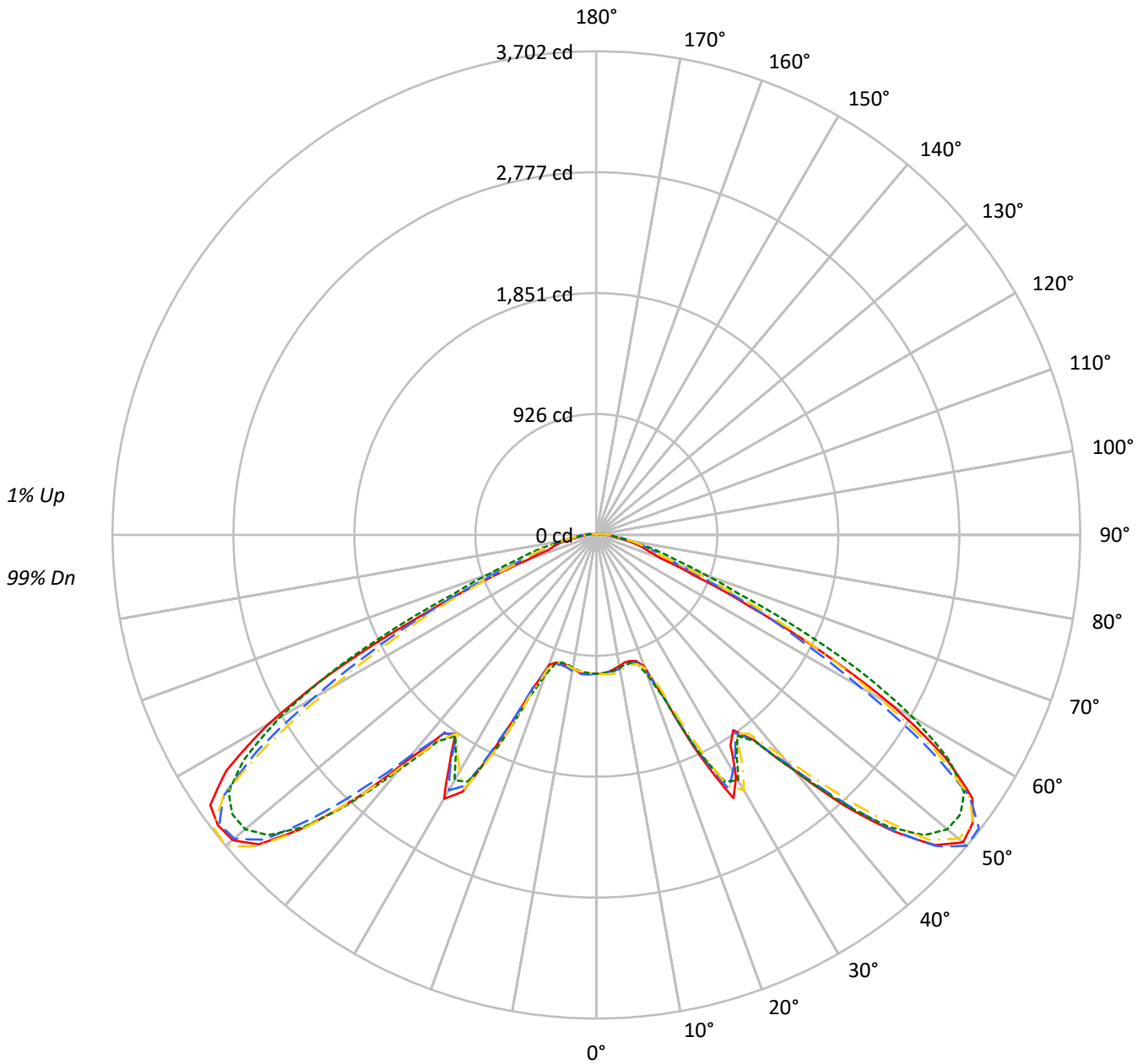
Lumens per Lamp: N/A
Luminaire Lumens: 10231.6 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Spacing Criteria (0/90/45): 3.09 / 3.06 / 2.52
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 0.42' x H: 0.08')
CIE Type: Direct

Input Watts (W): 128.1
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



— 0°-180° - - 45°-225° - - - 90°-270° - - - 135°-315°



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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	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101	99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	88	85	83	81
2	97	88	80	74	94	85	79	73	82	76	71	78	73	69	75	71	67	65
3	87	75	66	59	84	73	65	58	70	63	57	67	61	56	64	59	54	52
4	78	64	55	47	75	63	54	47	60	52	46	58	51	45	55	49	44	42
5	70	56	46	38	68	55	45	38	52	44	38	50	43	37	48	42	36	34
6	64	49	39	32	62	48	38	32	46	37	31	44	36	31	42	35	30	28
7	58	43	33	27	56	42	33	26	41	32	26	39	31	26	37	31	25	23
8	53	38	29	23	52	38	29	22	36	28	22	35	27	22	33	27	22	20
9	49	35	26	19	48	34	25	19	33	25	19	31	24	19	30	24	19	17
10	46	31	23	17	44	31	22	17	30	22	17	28	21	16	27	21	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	64846	64846	64846	64846
5°	63442	63605	64430	63605
10°	61021	61950	62142	61950
15°	60015	60808	61079	60808
20°	64965	68869	64187	68869
25°	114124	111484	105207	111484
30°	135565	137705	147976	137705
35°	119877	123459	124057	123459
40°	161313	160846	154981	160846
45°	232244	228758	230091	228758
50°	283258	271228	281139	271228
55°	293731	287225	301593	287225
60°	240792	256842	266027	256842
65°	132712	176125	157991	176125
70°	61815	102385	66266	102385
75°	50105	68915	46536	68915
80°	37197	43633	37332	43633
85°	28537	30564	27479	30564



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.5	1.0
10°-20°	293.6	2.9
20°-30°	820.1	8.0
30°-40°	1281.5	12.5
40°-50°	2414.0	23.6
50°-60°	2994.1	29.3
60°-70°	1551.2	15.2
70°-80°	469.9	4.6
80°-90°	169.1	1.7
90°-100°	68.0	0.7
100°-110°	30.3	0.3
110°-120°	16.3	0.2
120°-130°	10.2	0.1
130°-140°	6.6	0.1
140°-150°	4.0	0.0
150°-160°	1.8	0.0
160°-170°	0.3	0.0
170°-180°	0.0	0.0
0°-30°	1214.2	11.9
0°-40°	2495.7	24.4
0°-60°	7903.8	77.2
0°-90°	10094.0	98.7
90°-120°	114.6	1.1
90°-150°	135.5	1.3
90°-180°	138.0	1.3
0°-180°	10231.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1063	1063	1063	1063	1063	
5°	1053	1056	1069	1056	1053	99
15°	998	1012	1016	1012	998	288
25°	1846	1803	1701	1803	1846	836
35°	1824	1878	1888	1878	1824	1251
45°	3204	3156	3174	3156	3204	2441
55°	3512	3434	3606	3434	3512	3007
65°	1295	1718	1541	1718	1295	1384
75°	364	500	338	500	364	383
85°	130	139	125	139	130	124
90°	84	92	82	92	84	47
95°	56	59	56	59	56	42
105°	27	25	26	25	27	29
115°	15	14	15	14	15	16
125°	11	9	10	9	11	10
135°	9	7	6	7	9	7
145°	7	5	4	5	7	4
155°	4	3	3	3	4	2
165°	1	1	0	1	1	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1062.7	1062.7	1062.7	1062.7	1062.7	1062.7	1062.7	1062.7	1062.7	1062.7	1062.7
2.5°	1061.7	1057.7	1058.8	1059.0	1059.2	1062.4	1066.2	1064.6	1068.1	1064.6	1066.2
5°	1053.0	1051.7	1054.4	1054.4	1055.7	1063.0	1070.7	1068.0	1069.4	1068.0	1070.7
7.5°	1035.2	1042.4	1049.8	1048.7	1047.5	1057.4	1071.2	1062.1	1057.3	1062.1	1071.2
10°	1017.9	1027.6	1039.2	1037.6	1033.4	1041.6	1056.9	1044.0	1036.6	1044.0	1056.9
12.5°	1000.3	1011.2	1023.4	1020.7	1015.1	1024.2	1039.5	1031.0	1021.8	1031.0	1039.5
15°	998.5	1007.3	1013.9	1013.2	1011.7	1020.9	1031.3	1027.5	1016.2	1027.5	1031.3
17.5°	1011.3	1024.4	1024.6	1028.9	1029.1	1034.5	1037.6	1033.3	1024.8	1033.3	1037.6
20°	1069.8	1092.0	1091.7	1115.2	1134.1	1125.9	1084.4	1071.3	1057.0	1071.3	1084.4
22.5°	1337.7	1347.2	1333.3	1333.7	1347.1	1331.0	1262.1	1263.7	1270.8	1263.7	1262.1
25°	1845.6	1826.8	1799.6	1785.3	1802.9	1763.0	1676.6	1697.4	1701.4	1697.4	1676.6
27.5°	2272.2	2226.6	2193.0	2181.3	2128.1	2146.6	2159.3	2233.6	2216.1	2233.6	2159.3
30°	2135.6	2151.2	2089.3	2177.2	2169.3	2303.1	2257.3	2342.2	2331.1	2342.2	2257.3
32.5°	1909.2	1972.1	1979.9	2022.9	1998.0	2102.3	2076.1	2135.3	2093.2	2135.3	2076.1
35°	1823.9	1860.3	1849.9	1910.6	1878.4	1928.2	1854.1	1891.0	1887.5	1891.0	1854.1
37.5°	1976.9	2016.6	1982.3	2042.3	1988.4	2006.7	1918.7	1936.1	1908.3	1936.1	1918.7
40°	2348.8	2389.4	2308.2	2395.4	2342.0	2326.7	2202.7	2258.6	2256.6	2258.6	2202.7
42.5°	2808.7	2835.2	2748.9	2823.7	2781.8	2761.5	2614.3	2705.8	2755.2	2705.8	2614.3
45°	3203.9	3233.5	3188.7	3214.8	3155.8	3172.0	3063.7	3134.9	3174.2	3134.9	3063.7
47.5°	3514.4	3559.4	3525.8	3519.6	3400.4	3466.1	3452.9	3461.4	3505.7	3461.4	3452.9
50°	3661.2	3764.6	3702.2	3689.5	3505.7	3583.6	3616.9	3642.8	3633.8	3642.8	3616.9
52.5°	3628.0	3729.0	3688.3	3663.6	3511.6	3563.8	3634.8	3668.9	3650.0	3668.9	3634.8
55°	3512.1	3480.6	3482.6	3467.2	3434.3	3421.7	3480.9	3525.5	3606.1	3525.5	3480.9
57.5°	3160.6	3095.6	2972.4	3123.8	3192.8	3118.0	3073.9	3211.9	3357.2	3211.9	3073.9
60°	2624.0	2592.5	2342.1	2649.3	2798.9	2668.5	2504.1	2732.9	2899.0	2732.9	2504.1
62.5°	1952.9	2036.6	1792.0	2065.3	2308.0	2135.5	1951.2	2223.3	2277.5	2223.3	1951.2
65°	1294.6	1504.8	1346.4	1484.1	1718.1	1580.3	1463.2	1654.7	1541.2	1654.7	1463.2
67.5°	808.3	1064.7	950.4	951.9	1186.0	1040.1	1042.7	1176.1	964.0	1176.1	1042.7
70°	527.8	739.9	662.8	613.1	874.2	633.8	700.5	820.9	565.8	820.9	700.5
72.5°	423.4	581.4	533.6	477.1	641.3	458.9	517.3	556.9	384.8	556.9	517.3
75°	363.6	500.8	434.2	399.9	500.1	382.8	419.2	478.5	337.7	478.5	419.2
77.5°	291.3	392.4	343.9	324.3	365.6	322.5	346.4	394.1	285.2	394.1	346.4
80°	220.2	289.2	269.3	240.4	258.3	242.4	276.3	304.8	221.0	304.8	276.3
82.5°	164.7	206.2	194.1	173.3	186.1	174.7	200.7	217.1	163.0	217.1	200.7
85°	129.5	154.3	146.2	132.4	138.7	130.5	145.5	149.8	124.7	149.8	145.5
87.5°	104.0	124.2	117.4	106.1	113.6	105.8	116.4	121.6	101.6	121.6	116.4
90°	84.5	100.0	93.9	85.0	92.4	86.6	94.6	98.9	82.2	98.9	94.6
92.5°	69.1	80.5	75.4	69.3	74.9	71.5	77.2	81.3	68.5	81.3	77.2
95°	55.9	64.6	60.2	56.0	58.9	57.9	62.2	65.7	55.8	65.7	62.2
97.5°	45.4	51.9	47.9	45.7	45.8	46.9	49.4	52.9	45.4	52.9	49.4
100°	37.4	42.4	39.3	38.1	36.4	38.4	40.0	42.9	37.5	42.9	40.0
102.5°	32.0	35.7	32.5	32.2	29.8	32.1	32.7	35.4	31.1	35.4	32.7
105°	26.8	30.2	27.6	27.4	25.2	27.4	27.7	30.1	26.2	30.1	27.7
107.5°	22.4	25.6	23.2	23.6	21.2	24.1	23.8	26.1	22.4	26.1	23.8
110°	19.2	22.1	20.0	20.8	18.2	21.1	20.6	22.5	19.2	22.5	20.6



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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°	17.2	19.3	17.8	18.6	15.8	18.6	18.0	19.7	16.4	19.7	18.0
115°	15.3	17.5	15.9	16.9	13.8	16.7	15.8	17.3	14.6	17.3	15.8
117.5°	14.0	15.9	14.6	15.3	11.9	14.7	14.3	15.6	13.2	15.6	14.3
120°	12.9	14.7	13.7	13.9	10.6	13.5	13.2	14.4	12.0	14.4	13.2
122.5°	12.0	13.7	12.7	13.1	9.5	12.3	11.7	13.0	10.7	13.0	11.7
125°	11.1	12.9	12.2	12.3	8.8	11.2	11.0	11.6	9.7	11.6	11.0
127.5°	10.7	11.9	11.4	11.6	8.1	10.4	10.2	10.9	8.6	10.9	10.2
130°	9.8	11.2	11.2	10.9	7.8	9.4	9.3	9.5	7.8	9.5	9.3
132.5°	9.3	10.5	10.5	10.5	7.2	8.6	8.8	8.6	6.9	8.6	8.8
135°	8.8	10.2	10.0	10.0	6.9	7.8	8.1	7.9	6.2	7.9	8.1
137.5°	8.2	9.5	9.6	9.5	6.5	7.4	7.4	7.3	5.7	7.3	7.4
140°	7.7	8.5	8.8	8.6	5.9	6.6	6.9	6.6	5.2	6.6	6.9
142.5°	7.1	8.4	8.6	8.1	5.4	6.0	6.6	6.3	4.8	6.3	6.6
145°	6.8	8.0	8.3	7.5	4.9	5.6	6.1	5.6	4.4	5.6	6.1
147.5°	6.0	7.1	7.5	6.8	4.5	5.1	5.3	5.2	3.8	5.2	5.3
150°	5.2	6.4	6.4	5.9	4.0	4.3	4.8	4.5	3.7	4.5	4.8
152.5°	4.7	5.8	5.8	5.3	3.5	3.9	4.2	4.1	2.9	4.1	4.2
155°	4.3	4.7	4.9	4.4	3.1	3.2	3.5	3.4	2.8	3.4	3.5
157.5°	3.3	3.8	4.1	3.6	2.4	2.2	3.0	2.9	2.1	2.9	3.0
160°	2.5	3.1	3.1	2.8	1.6	1.9	2.2	2.1	1.4	2.1	2.2
162.5°	1.9	2.4	2.2	2.0	1.2	1.2	1.6	1.2	1.0	1.2	1.6
165°	1.2	1.0	1.2	0.9	0.7	0.1	0.7	0.3	0.3	0.3	0.7
167.5°	0.3	0.1	0.3	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.1
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):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1062.7	1062.7	1062.7	1062.7	1062.7	1062.7
2.5°	1062.4	1059.2	1059.0	1058.8	1057.7	1061.7
5°	1063.0	1055.7	1054.4	1054.4	1051.7	1053.0
7.5°	1057.4	1047.5	1048.7	1049.8	1042.4	1035.2
10°	1041.6	1033.4	1037.6	1039.2	1027.6	1017.9
12.5°	1024.2	1015.1	1020.7	1023.4	1011.2	1000.3
15°	1020.9	1011.7	1013.2	1013.9	1007.3	998.5
17.5°	1034.5	1029.1	1028.9	1024.6	1024.4	1011.3
20°	1125.9	1134.1	1115.2	1091.7	1092.0	1069.8
22.5°	1331.0	1347.1	1333.7	1333.3	1347.2	1337.7
25°	1763.0	1802.9	1785.3	1799.6	1826.8	1845.6
27.5°	2146.6	2128.1	2181.3	2193.0	2226.6	2272.2
30°	2303.1	2169.3	2177.2	2089.3	2151.2	2135.6
32.5°	2102.3	1998.0	2022.9	1979.9	1972.1	1909.2
35°	1928.2	1878.4	1910.6	1849.9	1860.3	1823.9
37.5°	2006.7	1988.4	2042.3	1982.3	2016.6	1976.9
40°	2326.7	2342.0	2395.4	2308.2	2389.4	2348.8
42.5°	2761.5	2781.8	2823.7	2748.9	2835.2	2808.7
45°	3172.0	3155.8	3214.8	3188.7	3233.5	3203.9
47.5°	3466.1	3400.4	3519.6	3525.8	3559.4	3514.4
50°	3583.6	3505.7	3689.5	3702.2	3764.6	3661.2
52.5°	3563.8	3511.6	3663.6	3688.3	3729.0	3628.0
55°	3421.7	3434.3	3467.2	3482.6	3480.6	3512.1
57.5°	3118.0	3192.8	3123.8	2972.4	3095.6	3160.6
60°	2668.5	2798.9	2649.3	2342.1	2592.5	2624.0
62.5°	2135.5	2308.0	2065.3	1792.0	2036.6	1952.9
65°	1580.3	1718.1	1484.1	1346.4	1504.8	1294.6
67.5°	1040.1	1186.0	951.9	950.4	1064.7	808.3
70°	633.8	874.2	613.1	662.8	739.9	527.8
72.5°	458.9	641.3	477.1	533.6	581.4	423.4
75°	382.8	500.1	399.9	434.2	500.8	363.6
77.5°	322.5	365.6	324.3	343.9	392.4	291.3
80°	242.4	258.3	240.4	269.3	289.2	220.2
82.5°	174.7	186.1	173.3	194.1	206.2	164.7
85°	130.5	138.7	132.4	146.2	154.3	129.5
87.5°	105.8	113.6	106.1	117.4	124.2	104.0
90°	86.6	92.4	85.0	93.9	100.0	84.5
92.5°	71.5	74.9	69.3	75.4	80.5	69.1
95°	57.9	58.9	56.0	60.2	64.6	55.9
97.5°	46.9	45.8	45.7	47.9	51.9	45.4
100°	38.4	36.4	38.1	39.3	42.4	37.4
102.5°	32.1	29.8	32.2	32.5	35.7	32.0
105°	27.4	25.2	27.4	27.6	30.2	26.8
107.5°	24.1	21.2	23.6	23.2	25.6	22.4
110°	21.1	18.2	20.8	20.0	22.1	19.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	18.6	15.8	18.6	17.8	19.3	17.2
115°	16.7	13.8	16.9	15.9	17.5	15.3
117.5°	14.7	11.9	15.3	14.6	15.9	14.0
120°	13.5	10.6	13.9	13.7	14.7	12.9
122.5°	12.3	9.5	13.1	12.7	13.7	12.0
125°	11.2	8.8	12.3	12.2	12.9	11.1
127.5°	10.4	8.1	11.6	11.4	11.9	10.7
130°	9.4	7.8	10.9	11.2	11.2	9.8
132.5°	8.6	7.2	10.5	10.5	10.5	9.3
135°	7.8	6.9	10.0	10.0	10.2	8.8
137.5°	7.4	6.5	9.5	9.6	9.5	8.2
140°	6.6	5.9	8.6	8.8	8.5	7.7
142.5°	6.0	5.4	8.1	8.6	8.4	7.1
145°	5.6	4.9	7.5	8.3	8.0	6.8
147.5°	5.1	4.5	6.8	7.5	7.1	6.0
150°	4.3	4.0	5.9	6.4	6.4	5.2
152.5°	3.9	3.5	5.3	5.8	5.8	4.7
155°	3.2	3.1	4.4	4.9	4.7	4.3
157.5°	2.2	2.4	3.6	4.1	3.8	3.3
160°	1.9	1.6	2.8	3.1	3.1	2.5
162.5°	1.2	1.2	2.0	2.2	2.4	1.9
165°	0.1	0.7	0.9	1.2	1.0	1.2
167.5°	0.0	0.3	0.0	0.3	0.1	0.3
170°	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
175°	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
180°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)