

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P776465

Luminaire Tested: HCDJBL3040CSD-HCD82TRH-4000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776465
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B063-HCD82TRH)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD82TRH-4000lm-2700K
Description: 8 INCH ROUND NARROW HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4277.5 lumens
Efficiency: N/A
Efficacy: 111.1 lumens/watt
Spacing Criteria (0/90/45): 0.64 / 0.65 / 0.67
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

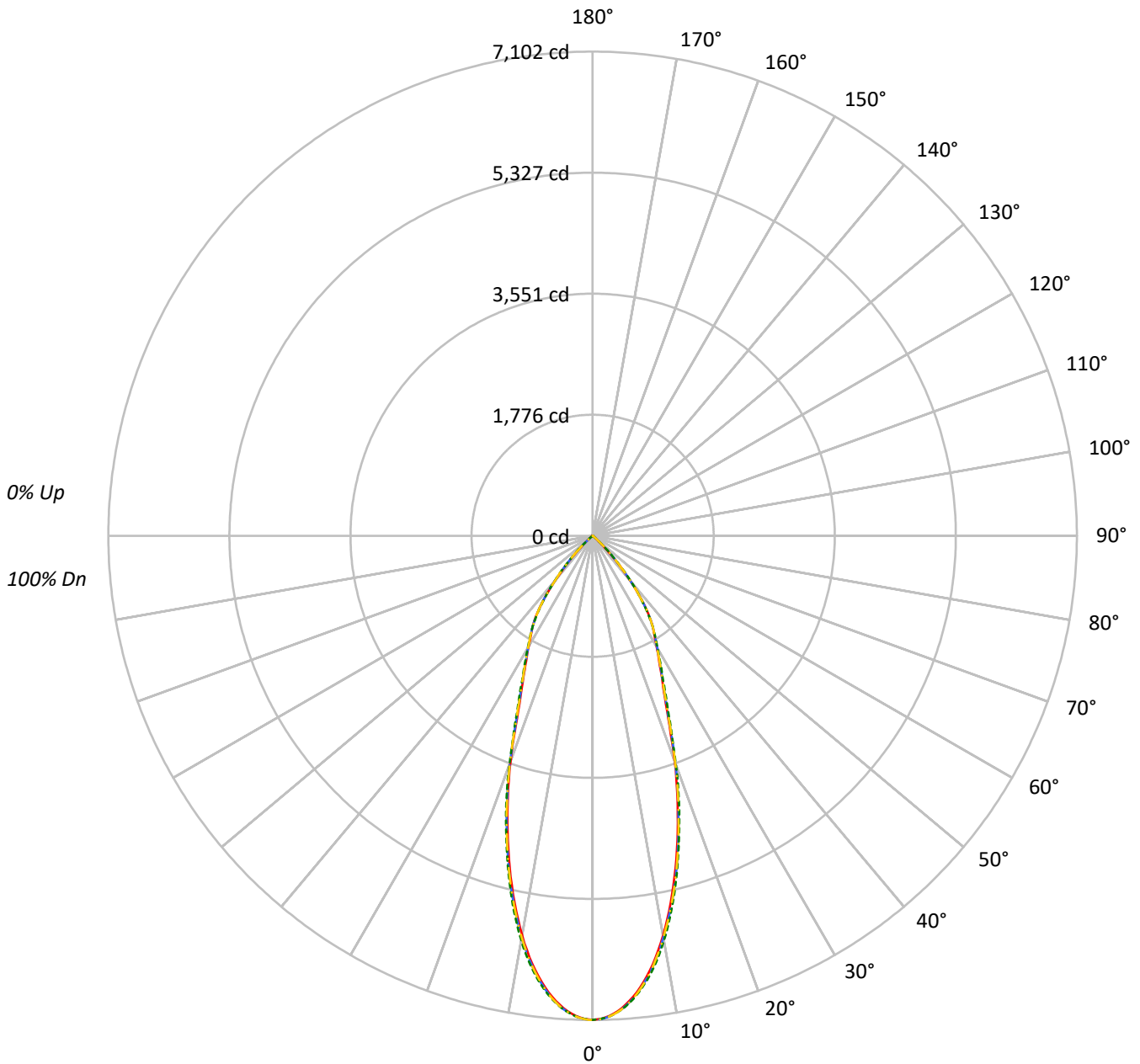
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776465

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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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94			
2	108	104	100	97	106	102	99	96	99	96	94	96	94	92	93	91	90	88			
3	103	97	93	89	101	96	92	88	93	90	87	91	88	85	89	86	84	82			
4	98	91	86	82	97	90	85	82	88	84	81	86	82	80	84	81	79	77			
5	94	86	80	76	92	85	80	76	83	79	75	82	78	75	80	77	74	72			
6	89	81	75	71	88	80	75	71	79	74	70	77	73	70	76	72	69	68			
7	85	76	71	67	84	76	70	67	75	70	66	73	69	66	72	68	65	64			
8	81	72	67	63	80	72	66	63	71	66	62	70	65	62	69	65	62	61			
9	78	69	63	59	77	68	63	59	67	62	59	66	62	59	66	62	59	57			
10	74	65	60	56	73	65	60	56	64	59	56	63	59	56	63	58	56	54			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	216814	216814	216814	216814
5°	208123	209076	208123	209076
10°	184547	186857	184547	186857
15°	150827	153267	150827	153267
20°	114422	115858	114422	115858
25°	82501	84738	82501	84738
30°	66185	67200	66185	67200
35°	54177	53718	54177	53718
40°	33984	34705	33984	34705
45°	12949	15017	12949	15017
50°	1933	2717	1933	2717
55°	410	431	410	431
60°	256	256	256	256
65°	166	166	166	166
70°	107	134	107	134
75°	94	94	94	94
80°	70	70	70	70
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 15017 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	623.7	14.6
10°-20°	1323.3	30.9
20°-30°	1162.2	27.2
30°-40°	877.6	20.5
40°-50°	276.6	6.5
50°-60°	10.6	0.2
60°-70°	2.5	0.1
70°-80°	0.8	0.0
80°-90°	0.1	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	3109.2	72.7
0°-40°	3986.8	93.2
0°-60°	4274.0	99.9
0°-90°	4277.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4277.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	7102	7102	7102	7102	7102	
5°	6791	6822	6791	6822	6791	621
15°	4772	4849	4772	4849	4772	1312
25°	2449	2516	2449	2516	2449	1151
35°	1454	1441	1454	1441	1454	876
45°	300	348	300	348	300	261
55°	8	8	8	8	8	9
65°	2	2	2	2	2	2
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	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°	7101.6	7101.6	7101.6	7101.6	7101.6	7101.6	7101.6	7101.6	7101.6	7101.6	7101.6
0.5°	7095.1	7096.6	7100.4	7102.0	7095.1	7102.0	7100.4	7096.6	7095.1	7096.6	7100.4
1°	7085.5	7087.4	7091.2	7093.9	7087.0	7093.9	7091.2	7087.4	7085.5	7087.4	7091.2
1.5°	7069.3	7071.7	7076.6	7079.7	7072.8	7079.7	7076.6	7071.7	7069.3	7071.7	7076.6
2°	7047.8	7049.8	7056.3	7060.1	7053.6	7060.1	7056.3	7049.8	7047.8	7049.8	7056.3
2.5°	7018.3	7022.1	7029.8	7034.4	7028.3	7034.4	7029.8	7022.1	7018.3	7022.1	7029.8
3°	6984.9	6988.7	6997.9	7003.7	6997.9	7003.7	6997.9	6988.7	6984.9	6988.7	6997.9
3.5°	6945.0	6949.6	6959.9	6967.2	6963.0	6967.2	6959.9	6949.6	6945.0	6949.6	6959.9
4°	6898.5	6904.3	6916.5	6925.4	6921.5	6925.4	6916.5	6904.3	6898.5	6904.3	6916.5
4.5°	6847.4	6852.8	6867.4	6878.2	6874.3	6878.2	6867.4	6852.8	6847.4	6852.8	6867.4
5°	6791.0	6796.8	6812.9	6825.6	6822.1	6825.6	6812.9	6796.8	6791.0	6796.8	6812.9
5.5°	6728.8	6734.9	6751.8	6766.4	6764.9	6766.4	6751.8	6734.9	6728.8	6734.9	6751.8
6°	6660.8	6667.4	6685.8	6702.7	6703.1	6702.7	6685.8	6667.4	6660.8	6667.4	6685.8
6.5°	6589.8	6595.2	6615.5	6634.4	6635.5	6634.4	6615.5	6595.2	6589.8	6595.2	6615.5
7°	6512.3	6518.4	6539.5	6560.6	6564.9	6560.6	6539.5	6518.4	6512.3	6518.4	6539.5
7.5°	6430.9	6435.9	6457.7	6480.0	6486.2	6480.0	6457.7	6435.9	6430.9	6435.9	6457.7
8°	6343.3	6349.1	6372.1	6396.3	6404.0	6396.3	6372.1	6349.1	6343.3	6349.1	6372.1
8.5°	6252.7	6257.7	6280.8	6308.0	6316.8	6308.0	6280.8	6257.7	6252.7	6257.7	6280.8
9°	6155.6	6162.1	6186.3	6215.5	6225.5	6215.5	6186.3	6162.1	6155.6	6162.1	6186.3
9.5°	6056.5	6063.4	6086.5	6117.2	6128.7	6117.2	6086.5	6063.4	6056.5	6063.4	6086.5
10°	5952.9	5960.6	5984.4	6017.8	6027.4	6017.8	5984.4	5960.6	5952.9	5960.6	5984.4
10.5°	5845.8	5853.4	5878.0	5913.3	5922.5	5913.3	5878.0	5853.4	5845.8	5853.4	5878.0
11°	5731.3	5743.6	5768.6	5805.4	5813.5	5805.4	5768.6	5743.6	5731.3	5743.6	5768.6
11.5°	5621.2	5631.1	5656.1	5691.8	5701.4	5691.8	5656.1	5631.1	5621.2	5631.1	5656.1
12°	5504.1	5516.0	5541.7	5577.8	5586.6	5577.8	5541.7	5516.0	5504.1	5516.0	5541.7
12.5°	5386.6	5398.9	5425.0	5459.1	5466.8	5459.1	5425.0	5398.9	5386.6	5398.9	5425.0
13°	5266.0	5279.8	5307.9	5342.0	5348.2	5342.0	5307.9	5279.8	5266.0	5279.8	5307.9
13.5°	5145.5	5159.3	5188.5	5218.4	5227.2	5218.4	5188.5	5159.3	5145.5	5159.3	5188.5
14°	5021.8	5036.8	5066.4	5093.6	5103.2	5093.6	5066.4	5036.8	5021.8	5036.8	5066.4
14.5°	4897.1	4912.4	4942.4	4968.1	4976.1	4968.1	4942.4	4912.4	4897.1	4912.4	4942.4
15°	4771.9	4787.6	4817.2	4843.3	4849.1	4843.3	4817.2	4787.6	4771.9	4787.6	4817.2
15.5°	4646.4	4661.7	4691.3	4716.2	4725.1	4716.2	4691.3	4661.7	4646.4	4661.7	4691.3
16°	4521.6	4535.0	4564.6	4589.5	4599.9	4589.5	4564.6	4535.0	4521.6	4535.0	4564.6
16.5°	4398.3	4409.8	4439.4	4463.6	4474.7	4463.6	4439.4	4409.8	4398.3	4409.8	4439.4
17°	4271.6	4284.3	4311.2	4339.6	4348.0	4339.6	4311.2	4284.3	4271.6	4284.3	4311.2
17.5°	4145.3	4158.0	4184.9	4213.7	4223.6	4213.7	4184.9	4158.0	4145.3	4158.0	4184.9
18°	4021.3	4030.9	4059.7	4087.7	4097.7	4087.7	4059.7	4030.9	4021.3	4030.9	4059.7
18.5°	3897.3	3906.9	3932.6	3959.9	3970.6	3959.9	3932.6	3906.9	3897.3	3906.9	3932.6
19°	3772.9	3782.1	3807.5	3830.5	3842.8	3830.5	3807.5	3782.1	3772.9	3782.1	3807.5
19.5°	3648.5	3658.5	3679.2	3698.8	3708.4	3698.8	3679.2	3658.5	3648.5	3658.5	3679.2
20°	3521.8	3530.3	3546.8	3565.6	3566.0	3565.6	3546.8	3530.3	3521.8	3530.3	3546.8
20.5°	3393.6	3399.0	3416.6	3434.3	3432.0	3434.3	3416.6	3399.0	3393.6	3399.0	3416.6
21°	3262.7	3271.5	3288.4	3305.7	3305.3	3305.7	3288.4	3271.5	3262.7	3271.5	3288.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2898.7	2909.4	2924.8	2952.8	2965.1	2952.8	2924.8	2909.4	2898.7	2909.4	2924.8
23°	2793.9	2801.9	2820.4	2844.2	2858.0	2844.2	2820.4	2801.9	2793.9	2801.9	2820.4
23.5°	2690.2	2710.2	2724.8	2744.3	2757.8	2744.3	2724.8	2710.2	2690.2	2710.2	2724.8
24°	2608.8	2616.5	2636.8	2658.0	2675.6	2658.0	2636.8	2616.5	2608.8	2616.5	2636.8
24.5°	2524.7	2534.0	2553.9	2575.0	2596.2	2575.0	2553.9	2534.0	2524.7	2534.0	2553.9
25°	2449.1	2458.7	2477.5	2495.6	2515.5	2495.6	2477.5	2458.7	2449.1	2458.7	2477.5
25.5°	2384.2	2388.4	2403.8	2419.2	2436.4	2419.2	2403.8	2388.4	2384.2	2388.4	2403.8
26°	2320.1	2323.9	2333.9	2348.5	2358.9	2348.5	2333.9	2323.9	2320.1	2323.9	2333.9
26.5°	2253.7	2259.4	2271.3	2284.0	2290.5	2284.0	2271.3	2259.4	2253.7	2259.4	2271.3
27°	2189.6	2196.5	2211.8	2225.7	2232.2	2225.7	2211.8	2196.5	2189.6	2196.5	2211.8
27.5°	2130.8	2137.4	2152.3	2166.9	2176.1	2166.9	2152.3	2137.4	2130.8	2137.4	2152.3
28°	2076.7	2082.1	2094.4	2107.8	2115.5	2107.8	2094.4	2082.1	2076.7	2082.1	2094.4
28.5°	2025.2	2029.9	2040.2	2051.4	2059.8	2051.4	2040.2	2029.9	2025.2	2029.9	2040.2
29°	1975.3	1979.2	1989.2	1999.9	2005.3	1999.9	1989.2	1979.2	1975.3	1979.2	1989.2
29.5°	1925.4	1929.6	1939.6	1949.6	1954.6	1949.6	1939.6	1929.6	1925.4	1929.6	1939.6
30°	1877.4	1881.3	1890.9	1900.5	1906.2	1900.5	1890.9	1881.3	1877.4	1881.3	1890.9
30.5°	1831.0	1834.0	1844.0	1853.6	1859.4	1853.6	1844.0	1834.0	1831.0	1834.0	1844.0
31°	1785.3	1790.3	1799.1	1809.1	1814.1	1809.1	1799.1	1790.3	1785.3	1790.3	1799.1
31.5°	1743.4	1746.5	1756.1	1765.3	1771.5	1765.3	1756.1	1746.5	1743.4	1746.5	1756.1
32°	1702.0	1705.8	1714.6	1723.5	1728.8	1723.5	1714.6	1705.8	1702.0	1705.8	1714.6
32.5°	1663.6	1667.4	1675.5	1681.6	1684.7	1681.6	1675.5	1667.4	1663.6	1667.4	1675.5
33°	1627.9	1629.8	1634.8	1637.9	1637.5	1637.9	1634.8	1629.8	1627.9	1629.8	1634.8
33.5°	1591.0	1590.6	1591.0	1591.0	1590.2	1591.0	1591.0	1590.6	1591.0	1590.6	1591.0
34°	1549.9	1547.2	1544.2	1548.4	1540.0	1548.4	1544.2	1547.2	1549.9	1547.2	1544.2
34.5°	1502.7	1501.9	1501.2	1498.1	1490.4	1498.1	1501.2	1501.9	1502.7	1501.9	1501.2
35°	1453.6	1450.1	1450.1	1447.0	1441.3	1447.0	1450.1	1450.1	1453.6	1450.1	1450.1
35.5°	1402.9	1398.7	1398.7	1393.3	1389.8	1393.3	1398.7	1398.7	1402.9	1398.7	1398.7
36°	1347.2	1344.9	1346.1	1337.2	1336.5	1337.2	1346.1	1344.9	1347.2	1344.9	1346.1
36.5°	1289.6	1289.2	1289.2	1280.8	1279.3	1280.8	1289.2	1289.2	1289.6	1289.2	1289.2
37°	1230.1	1230.1	1230.5	1224.0	1221.3	1224.0	1230.5	1230.1	1230.1	1230.1	1230.5
37.5°	1170.6	1169.5	1174.4	1166.4	1164.5	1166.4	1174.4	1169.5	1170.6	1169.5	1174.4
38°	1109.9	1107.3	1108.8	1106.5	1106.9	1106.5	1108.8	1107.3	1109.9	1107.3	1108.8
38.5°	1046.6	1044.3	1043.5	1047.0	1048.1	1047.0	1043.5	1044.3	1046.6	1044.3	1043.5
39°	982.5	981.3	979.4	987.1	987.5	987.1	979.4	981.3	982.5	981.3	979.4
39.5°	917.2	917.2	917.2	926.8	929.1	926.8	917.2	917.2	917.2	917.2	917.2
40°	852.7	854.6	858.5	866.9	870.8	866.9	858.5	854.6	852.7	854.6	858.5
40.5°	789.4	791.7	800.1	806.6	813.6	806.6	800.1	791.7	789.4	791.7	800.1
41°	726.8	730.2	741.4	748.3	755.6	748.3	741.4	730.2	726.8	730.2	741.4
41.5°	664.2	670.0	683.0	690.7	699.1	690.7	683.0	670.0	664.2	670.0	683.0
42°	604.3	610.8	626.2	635.0	643.1	635.0	626.2	610.8	604.3	610.8	626.2
42.5°	546.3	553.6	570.9	582.4	589.7	582.4	570.9	553.6	546.3	553.6	570.9
43°	489.9	500.3	517.9	531.0	537.1	531.0	517.9	500.3	489.9	500.3	517.9
43.5°	436.9	449.2	466.5	480.7	486.1	480.7	466.5	449.2	436.9	449.2	466.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	299.9	306.4	322.1	340.9	347.8	340.9	322.1	306.4	299.9	306.4	322.1
45.5°	258.4	264.9	280.7	299.5	307.1	299.5	280.7	264.9	258.4	264.9	280.7
46°	218.5	226.5	242.6	261.8	274.1	261.8	242.6	226.5	218.5	226.5	242.6
46.5°	184.7	190.8	209.2	227.3	241.1	227.3	209.2	190.8	184.7	190.8	209.2
47°	154.7	161.6	177.8	194.3	208.1	194.3	177.8	161.6	154.7	161.6	177.8
47.5°	128.2	134.0	147.8	162.0	175.1	162.0	147.8	134.0	128.2	134.0	147.8
48°	106.3	109.8	121.3	132.8	142.1	132.8	121.3	109.8	106.3	109.8	121.3
48.5°	86.0	90.2	97.9	108.3	116.3	108.3	97.9	90.2	86.0	90.2	97.9
49°	67.2	71.8	79.9	86.4	93.3	86.4	79.9	71.8	67.2	71.8	79.9
49.5°	52.6	56.1	63.0	69.1	74.1	69.1	63.0	56.1	52.6	56.1	63.0
50°	40.7	43.0	48.0	53.4	57.2	53.4	48.0	43.0	40.7	43.0	48.0
50.5°	30.3	30.7	36.5	41.8	44.5	41.8	36.5	30.7	30.3	30.7	36.5
51°	21.1	22.7	27.3	33.0	37.6	33.0	27.3	22.7	21.1	22.7	27.3
51.5°	13.8	16.9	21.1	25.0	31.1	25.0	21.1	16.9	13.8	16.9	21.1
52°	11.9	12.7	15.7	19.2	24.2	19.2	15.7	12.7	11.9	12.7	15.7
52.5°	10.8	11.1	11.5	14.6	17.7	14.6	11.5	11.1	10.8	11.1	11.5
53°	10.0	10.4	10.4	11.1	11.1	11.1	10.4	10.4	10.0	10.4	10.4
53.5°	9.2	9.6	10.0	10.0	9.6	10.0	10.0	9.6	9.2	9.6	10.0
54°	8.8	8.8	9.2	9.2	8.8	9.2	9.2	8.8	8.8	8.8	9.2
54.5°	8.1	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.1	8.4	8.4
55°	7.7	8.1	8.1	8.1	8.1	8.1	8.1	8.1	7.7	8.1	8.1
55.5°	7.3	7.3	7.7	7.7	7.7	7.7	7.7	7.3	7.3	7.3	7.7
56°	6.9	6.9	7.3	7.3	7.3	7.3	7.3	6.9	6.9	6.9	7.3
56.5°	6.5	6.5	6.9	6.9	6.5	6.9	6.9	6.5	6.5	6.5	6.9
57°	6.1	6.1	6.5	6.5	6.1	6.5	6.5	6.1	6.1	6.1	6.5
57.5°	5.8	5.8	6.1	6.1	6.1	6.1	6.1	5.8	5.8	5.8	6.1
58°	5.4	5.4	5.8	5.8	5.8	5.8	5.8	5.4	5.4	5.4	5.8
58.5°	5.0	5.0	5.4	5.4	5.4	5.4	5.4	5.0	5.0	5.0	5.4
59°	4.6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.6	5.0	5.0
59.5°	4.2	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.6	4.6
60°	4.2	4.2	4.6	4.6	4.2	4.6	4.6	4.2	4.2	4.2	4.6
60.5°	3.8	3.8	4.2	4.2	4.2	4.2	4.2	3.8	3.8	3.8	4.2
61°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
61.5°	3.5	3.5	3.8	3.8	3.8	3.8	3.8	3.5	3.5	3.5	3.8
62°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
62.5°	3.1	3.1	3.5	3.5	3.5	3.5	3.5	3.1	3.1	3.1	3.5
63°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
63.5°	2.7	2.7	3.1	3.1	3.1	3.1	3.1	2.7	2.7	2.7	3.1
64°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
64.5°	2.3	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.7	2.7
65°	2.3	2.3	2.7	2.7	2.3	2.7	2.7	2.3	2.3	2.3	2.7
65.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
66°	1.9	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.9	2.3	2.3



TEST NUMBER: P776465

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
68°	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.5	1.9
68.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
69°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
69.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
70°	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.2	1.2	1.2	1.5
70.5°	1.2	1.2	1.2	1.5	1.2	1.5	1.2	1.2	1.2	1.2	1.2
71°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
71.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
72°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	1.2	1.2
73°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2
73.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
77°	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4
82.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
83°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776465
CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776465

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	7101.6	7101.6	7101.6	7101.6	7101.6	7101.6
0.5°	7102.0	7095.1	7102.0	7100.4	7096.6	7095.1
1°	7093.9	7087.0	7093.9	7091.2	7087.4	7085.5
1.5°	7079.7	7072.8	7079.7	7076.6	7071.7	7069.3
2°	7060.1	7053.6	7060.1	7056.3	7049.8	7047.8
2.5°	7034.4	7028.3	7034.4	7029.8	7022.1	7018.3
3°	7003.7	6997.9	7003.7	6997.9	6988.7	6984.9
3.5°	6967.2	6963.0	6967.2	6959.9	6949.6	6945.0
4°	6925.4	6921.5	6925.4	6916.5	6904.3	6898.5
4.5°	6878.2	6874.3	6878.2	6867.4	6852.8	6847.4
5°	6825.6	6822.1	6825.6	6812.9	6796.8	6791.0
5.5°	6766.4	6764.9	6766.4	6751.8	6734.9	6728.8
6°	6702.7	6703.1	6702.7	6685.8	6667.4	6660.8
6.5°	6634.4	6635.5	6634.4	6615.5	6595.2	6589.8
7°	6560.6	6564.9	6560.6	6539.5	6518.4	6512.3
7.5°	6480.0	6486.2	6480.0	6457.7	6435.9	6430.9
8°	6396.3	6404.0	6396.3	6372.1	6349.1	6343.3
8.5°	6308.0	6316.8	6308.0	6280.8	6257.7	6252.7
9°	6215.5	6225.5	6215.5	6186.3	6162.1	6155.6
9.5°	6117.2	6128.7	6117.2	6086.5	6063.4	6056.5
10°	6017.8	6027.4	6017.8	5984.4	5960.6	5952.9
10.5°	5913.3	5922.5	5913.3	5878.0	5853.4	5845.8
11°	5805.4	5813.5	5805.4	5768.6	5743.6	5731.3
11.5°	5691.8	5701.4	5691.8	5656.1	5631.1	5621.2
12°	5577.8	5586.6	5577.8	5541.7	5516.0	5504.1
12.5°	5459.1	5466.8	5459.1	5425.0	5398.9	5386.6
13°	5342.0	5348.2	5342.0	5307.9	5279.8	5266.0
13.5°	5218.4	5227.2	5218.4	5188.5	5159.3	5145.5
14°	5093.6	5103.2	5093.6	5066.4	5036.8	5021.8
14.5°	4968.1	4976.1	4968.1	4942.4	4912.4	4897.1
15°	4843.3	4849.1	4843.3	4817.2	4787.6	4771.9
15.5°	4716.2	4725.1	4716.2	4691.3	4661.7	4646.4
16°	4589.5	4599.9	4589.5	4564.6	4535.0	4521.6
16.5°	4463.6	4474.7	4463.6	4439.4	4409.8	4398.3
17°	4339.6	4348.0	4339.6	4311.2	4284.3	4271.6
17.5°	4213.7	4223.6	4213.7	4184.9	4158.0	4145.3
18°	4087.7	4097.7	4087.7	4059.7	4030.9	4021.3
18.5°	3959.9	3970.6	3959.9	3932.6	3906.9	3897.3
19°	3830.5	3842.8	3830.5	3807.5	3782.1	3772.9
19.5°	3698.8	3708.4	3698.8	3679.2	3658.5	3648.5
20°	3565.6	3566.0	3565.6	3546.8	3530.3	3521.8
20.5°	3434.3	3432.0	3434.3	3416.6	3399.0	3393.6
21°	3305.7	3305.3	3305.7	3288.4	3271.5	3262.7



TEST NUMBER: P776465

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2952.8	2965.1	2952.8	2924.8	2909.4	2898.7
23°	2844.2	2858.0	2844.2	2820.4	2801.9	2793.9
23.5°	2744.3	2757.8	2744.3	2724.8	2710.2	2690.2
24°	2658.0	2675.6	2658.0	2636.8	2616.5	2608.8
24.5°	2575.0	2596.2	2575.0	2553.9	2534.0	2524.7
25°	2495.6	2515.5	2495.6	2477.5	2458.7	2449.1
25.5°	2419.2	2436.4	2419.2	2403.8	2388.4	2384.2
26°	2348.5	2358.9	2348.5	2333.9	2323.9	2320.1
26.5°	2284.0	2290.5	2284.0	2271.3	2259.4	2253.7
27°	2225.7	2232.2	2225.7	2211.8	2196.5	2189.6
27.5°	2166.9	2176.1	2166.9	2152.3	2137.4	2130.8
28°	2107.8	2115.5	2107.8	2094.4	2082.1	2076.7
28.5°	2051.4	2059.8	2051.4	2040.2	2029.9	2025.2
29°	1999.9	2005.3	1999.9	1989.2	1979.2	1975.3
29.5°	1949.6	1954.6	1949.6	1939.6	1929.6	1925.4
30°	1900.5	1906.2	1900.5	1890.9	1881.3	1877.4
30.5°	1853.6	1859.4	1853.6	1844.0	1834.0	1831.0
31°	1809.1	1814.1	1809.1	1799.1	1790.3	1785.3
31.5°	1765.3	1771.5	1765.3	1756.1	1746.5	1743.4
32°	1723.5	1728.8	1723.5	1714.6	1705.8	1702.0
32.5°	1681.6	1684.7	1681.6	1675.5	1667.4	1663.6
33°	1637.9	1637.5	1637.9	1634.8	1629.8	1627.9
33.5°	1591.0	1590.2	1591.0	1591.0	1590.6	1591.0
34°	1548.4	1540.0	1548.4	1544.2	1547.2	1549.9
34.5°	1498.1	1490.4	1498.1	1501.2	1501.9	1502.7
35°	1447.0	1441.3	1447.0	1450.1	1450.1	1453.6
35.5°	1393.3	1389.8	1393.3	1398.7	1398.7	1402.9
36°	1337.2	1336.5	1337.2	1346.1	1344.9	1347.2
36.5°	1280.8	1279.3	1280.8	1289.2	1289.2	1289.6
37°	1224.0	1221.3	1224.0	1230.5	1230.1	1230.1
37.5°	1166.4	1164.5	1166.4	1174.4	1169.5	1170.6
38°	1106.5	1106.9	1106.5	1108.8	1107.3	1109.9
38.5°	1047.0	1048.1	1047.0	1043.5	1044.3	1046.6
39°	987.1	987.5	987.1	979.4	981.3	982.5
39.5°	926.8	929.1	926.8	917.2	917.2	917.2
40°	866.9	870.8	866.9	858.5	854.6	852.7
40.5°	806.6	813.6	806.6	800.1	791.7	789.4
41°	748.3	755.6	748.3	741.4	730.2	726.8
41.5°	690.7	699.1	690.7	683.0	670.0	664.2
42°	635.0	643.1	635.0	626.2	610.8	604.3
42.5°	582.4	589.7	582.4	570.9	553.6	546.3
43°	531.0	537.1	531.0	517.9	500.3	489.9
43.5°	480.7	486.1	480.7	466.5	449.2	436.9



TEST NUMBER: P776465

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	340.9	347.8	340.9	322.1	306.4	299.9
45.5°	299.5	307.1	299.5	280.7	264.9	258.4
46°	261.8	274.1	261.8	242.6	226.5	218.5
46.5°	227.3	241.1	227.3	209.2	190.8	184.7
47°	194.3	208.1	194.3	177.8	161.6	154.7
47.5°	162.0	175.1	162.0	147.8	134.0	128.2
48°	132.8	142.1	132.8	121.3	109.8	106.3
48.5°	108.3	116.3	108.3	97.9	90.2	86.0
49°	86.4	93.3	86.4	79.9	71.8	67.2
49.5°	69.1	74.1	69.1	63.0	56.1	52.6
50°	53.4	57.2	53.4	48.0	43.0	40.7
50.5°	41.8	44.5	41.8	36.5	30.7	30.3
51°	33.0	37.6	33.0	27.3	22.7	21.1
51.5°	25.0	31.1	25.0	21.1	16.9	13.8
52°	19.2	24.2	19.2	15.7	12.7	11.9
52.5°	14.6	17.7	14.6	11.5	11.1	10.8
53°	11.1	11.1	11.1	10.4	10.4	10.0
53.5°	10.0	9.6	10.0	10.0	9.6	9.2
54°	9.2	8.8	9.2	9.2	8.8	8.8
54.5°	8.4	8.4	8.4	8.4	8.4	8.1
55°	8.1	8.1	8.1	8.1	8.1	7.7
55.5°	7.7	7.7	7.7	7.7	7.3	7.3
56°	7.3	7.3	7.3	7.3	6.9	6.9
56.5°	6.9	6.5	6.9	6.9	6.5	6.5
57°	6.5	6.1	6.5	6.5	6.1	6.1
57.5°	6.1	6.1	6.1	6.1	5.8	5.8
58°	5.8	5.8	5.8	5.8	5.4	5.4
58.5°	5.4	5.4	5.4	5.4	5.0	5.0
59°	5.0	5.0	5.0	5.0	5.0	4.6
59.5°	4.6	4.6	4.6	4.6	4.6	4.2
60°	4.6	4.2	4.6	4.6	4.2	4.2
60.5°	4.2	4.2	4.2	4.2	3.8	3.8
61°	3.8	3.8	3.8	3.8	3.8	3.8
61.5°	3.8	3.8	3.8	3.8	3.5	3.5
62°	3.5	3.5	3.5	3.5	3.5	3.5
62.5°	3.5	3.5	3.5	3.5	3.1	3.1
63°	3.1	3.1	3.1	3.1	3.1	3.1
63.5°	3.1	3.1	3.1	3.1	2.7	2.7
64°	2.7	2.7	2.7	2.7	2.7	2.7
64.5°	2.7	2.7	2.7	2.7	2.7	2.3
65°	2.7	2.3	2.7	2.7	2.3	2.3
65.5°	2.3	2.3	2.3	2.3	2.3	2.3
66°	2.3	2.3	2.3	2.3	2.3	1.9



TEST NUMBER: P776465

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.9	1.9	1.9	1.9	1.9	1.9
68°	1.9	1.9	1.9	1.9	1.5	1.5
68.5°	1.5	1.5	1.5	1.5	1.5	1.5
69°	1.5	1.5	1.5	1.5	1.5	1.5
69.5°	1.5	1.5	1.5	1.5	1.5	1.5
70°	1.5	1.5	1.5	1.5	1.2	1.2
70.5°	1.5	1.2	1.5	1.2	1.2	1.2
71°	1.2	1.2	1.2	1.2	1.2	1.2
71.5°	1.2	1.2	1.2	1.2	1.2	1.2
72°	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	0.8
73°	1.2	1.2	1.2	1.2	0.8	0.8
73.5°	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.4	0.4
77°	0.8	0.8	0.8	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.0
82.5°	0.4	0.4	0.4	0.4	0.0	0.0
83°	0.4	0.4	0.4	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776465

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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Cooper Lighting Solutions Photometric Lab
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Scaled Data Report





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

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Scaled Data Report



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Peachtree City, GA 30269

Scaled Data Report





21.5°	3127.1	3145.9	3164.8	3182.4	3187.0	3182.4	3164.8	3145.9	3127.1	3145.9	3164.8
22°	3009.3	3021.5	3043.4	3061.5	3070.7	3061.5	3043.4	3021.5	3009.3	3021.5	3043.4



44°	388.9	399.7	417.0	431.5	437.3	431.5	417.0	399.7	388.9	399.7	417.0
44.5°	343.6	352.1	368.2	383.9	390.8	383.9	368.2	352.1	343.6	352.1	368.2



66.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	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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21.5°	3182.4	3187.0	3182.4	3164.8	3145.9	3127.1
22°	3061.5	3070.7	3061.5	3043.4	3021.5	3009.3

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44°	431.5	437.3	431.5	417.0	399.7	388.9
44.5°	383.9	390.8	383.9	368.2	352.1	343.6

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66.5°	1.9	1.9	1.9	1.9	1.9	1.9
67°	1.9	1.9	1.9	1.9	1.9	1.9

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Scaled Data Report



89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)