

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: P776466

Luminaire Tested: HCDJBL3040CSD-HCD82TRH-4000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776466
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-3000K
Description: 8 INCH ROUND NARROW HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4361.7 lumens
Efficiency: N/A
Efficacy: 113.3 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

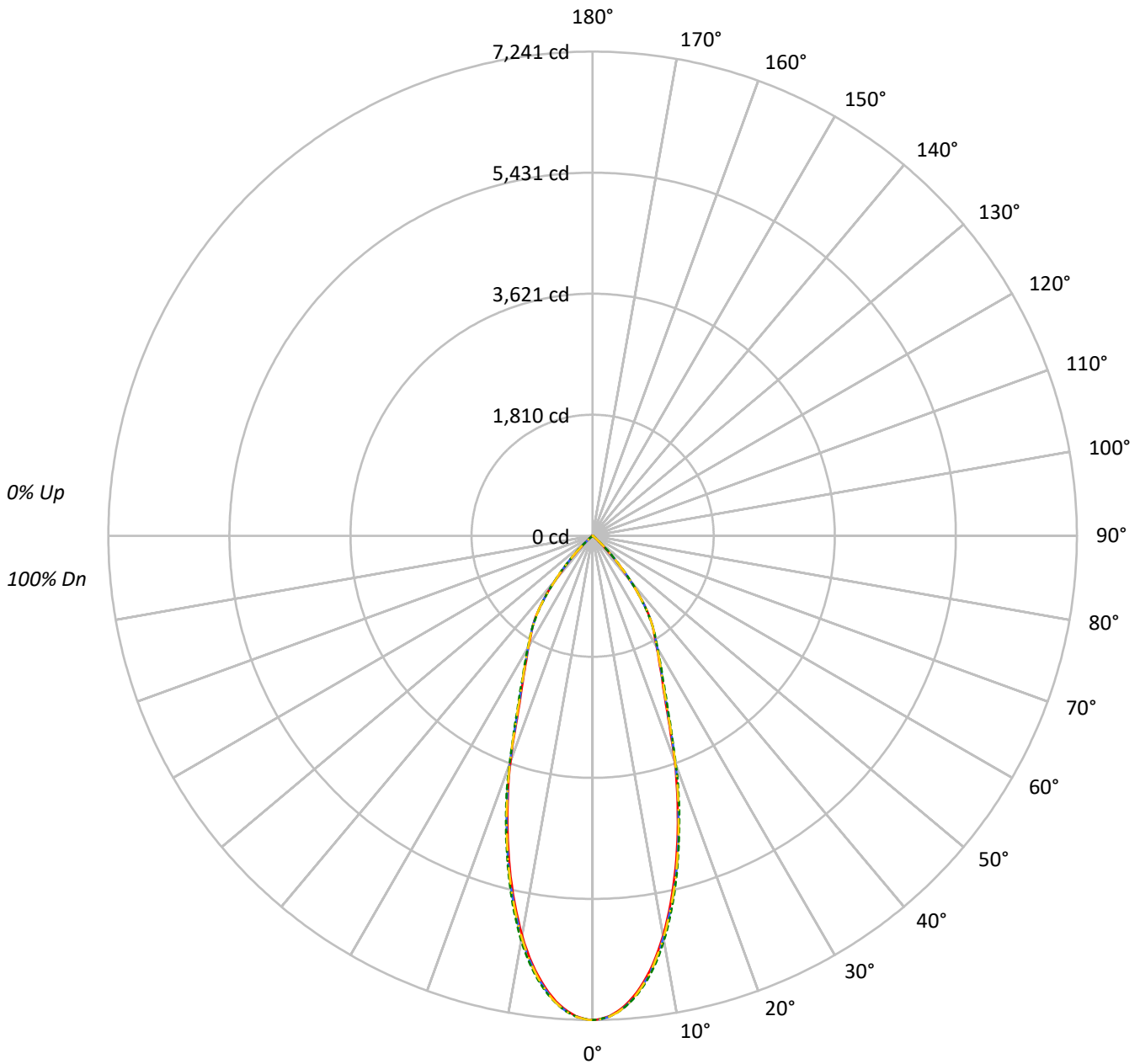
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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°	221082	221082	221082	221082
5°	212221	213192	212221	213192
10°	188181	190534	188181	190534
15°	153798	156282	153798	156282
20°	116677	118139	116677	118139
25°	84125	86409	84125	86409
30°	67489	68525	67489	68525
35°	55242	54777	55242	54777
40°	34653	35387	34653	35387
45°	13203	15315	13203	15315
50°	1971	2769	1971	2769
55°	415	436	415	436
60°	263	263	263	263
65°	166	166	166	166
70°	107	143	107	143
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: 15315 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	636.0	14.6
10°-20°	1349.4	30.9
20°-30°	1185.1	27.2
30°-40°	894.9	20.5
40°-50°	282.0	6.5
50°-60°	10.8	0.2
60°-70°	2.6	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°	3170.4	72.7
0°-40°	4065.3	93.2
0°-60°	4358.1	99.9
0°-90°	4361.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4361.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	7241	7241	7241	7241	7241	
5°	6925	6956	6925	6956	6925	634
15°	4866	4944	4866	4944	4866	1338
25°	2497	2565	2497	2565	2497	1174
35°	1482	1470	1482	1470	1482	893
45°	306	355	306	355	306	267
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



TEST NUMBER: P776466

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	7241.4	7241.4	7241.4	7241.4	7241.4	7241.4	7241.4	7241.4	7241.4	7241.4	7241.4
0.5°	7234.8	7236.3	7240.2	7241.8	7234.8	7241.8	7240.2	7236.3	7234.8	7236.3	7240.2
1°	7225.0	7226.9	7230.9	7233.6	7226.5	7233.6	7230.9	7226.9	7225.0	7226.9	7230.9
1.5°	7208.5	7210.9	7216.0	7219.1	7212.1	7219.1	7216.0	7210.9	7208.5	7210.9	7216.0
2°	7186.6	7188.6	7195.2	7199.1	7192.5	7199.1	7195.2	7188.6	7186.6	7188.6	7195.2
2.5°	7156.5	7160.4	7168.2	7172.9	7166.6	7172.9	7168.2	7160.4	7156.5	7160.4	7168.2
3°	7122.4	7126.3	7135.7	7141.6	7135.7	7141.6	7135.7	7126.3	7122.4	7126.3	7135.7
3.5°	7081.7	7086.4	7097.0	7104.4	7100.1	7104.4	7097.0	7086.4	7081.7	7086.4	7097.0
4°	7034.3	7040.2	7052.7	7061.7	7057.8	7061.7	7052.7	7040.2	7034.3	7040.2	7052.7
4.5°	6982.3	6987.7	7002.6	7013.6	7009.7	7013.6	7002.6	6987.7	6982.3	6987.7	7002.6
5°	6924.7	6930.6	6947.0	6959.9	6956.4	6959.9	6947.0	6930.6	6924.7	6930.6	6947.0
5.5°	6861.3	6867.5	6884.8	6899.7	6898.1	6899.7	6884.8	6867.5	6861.3	6867.5	6884.8
6°	6792.0	6798.6	6817.4	6834.7	6835.1	6834.7	6817.4	6798.6	6792.0	6798.6	6817.4
6.5°	6719.6	6725.0	6745.8	6765.0	6766.2	6765.0	6745.8	6725.0	6719.6	6725.0	6745.8
7°	6640.5	6646.7	6668.3	6689.8	6694.1	6689.8	6668.3	6646.7	6640.5	6646.7	6668.3
7.5°	6557.5	6562.6	6584.9	6607.6	6613.9	6607.6	6584.9	6562.6	6557.5	6562.6	6584.9
8°	6468.2	6474.1	6497.6	6522.3	6530.1	6522.3	6497.6	6474.1	6468.2	6474.1	6497.6
8.5°	6375.8	6380.9	6404.4	6432.2	6441.2	6432.2	6404.4	6380.9	6375.8	6380.9	6404.4
9°	6276.8	6283.4	6308.1	6337.9	6348.0	6337.9	6308.1	6283.4	6276.8	6283.4	6308.1
9.5°	6175.8	6182.8	6206.3	6237.6	6249.4	6237.6	6206.3	6182.8	6175.8	6182.8	6206.3
10°	6070.1	6077.9	6102.2	6136.2	6146.0	6136.2	6102.2	6077.9	6070.1	6077.9	6102.2
10.5°	5960.9	5968.7	5993.7	6029.8	6039.2	6029.8	5993.7	5968.7	5960.9	5968.7	5993.7
11°	5844.2	5856.7	5882.2	5919.7	5928.0	5919.7	5882.2	5856.7	5844.2	5856.7	5882.2
11.5°	5731.8	5742.0	5767.5	5803.9	5813.7	5803.9	5767.5	5742.0	5731.8	5742.0	5767.5
12°	5612.4	5624.6	5650.8	5687.6	5696.6	5687.6	5650.8	5624.6	5612.4	5624.6	5650.8
12.5°	5492.6	5505.2	5531.8	5566.6	5574.5	5566.6	5531.8	5505.2	5492.6	5505.2	5531.8
13°	5369.7	5383.8	5412.4	5447.2	5453.5	5447.2	5412.4	5383.8	5369.7	5383.8	5412.4
13.5°	5246.8	5260.9	5290.6	5321.2	5330.2	5321.2	5290.6	5260.9	5246.8	5260.9	5290.6
14°	5120.7	5136.0	5166.1	5193.9	5203.7	5193.9	5166.1	5136.0	5120.7	5136.0	5166.1
14.5°	4993.5	5009.1	5039.7	5065.9	5074.1	5065.9	5039.7	5009.1	4993.5	5009.1	5039.7
15°	4865.9	4881.9	4912.0	4938.7	4944.5	4938.7	4912.0	4881.9	4865.9	4881.9	4912.0
15.5°	4737.8	4753.5	4783.6	4809.1	4818.1	4809.1	4783.6	4753.5	4737.8	4753.5	4783.6
16°	4610.6	4624.3	4654.4	4679.9	4690.5	4679.9	4654.4	4624.3	4610.6	4624.3	4654.4
16.5°	4484.9	4496.7	4526.8	4551.5	4562.8	4551.5	4526.8	4496.7	4484.9	4496.7	4526.8
17°	4355.7	4368.7	4396.1	4425.0	4433.6	4425.0	4396.1	4368.7	4355.7	4368.7	4396.1
17.5°	4226.9	4239.9	4267.3	4296.6	4306.8	4296.6	4267.3	4239.9	4226.9	4239.9	4267.3
18°	4100.5	4110.3	4139.6	4168.2	4178.4	4168.2	4139.6	4110.3	4100.5	4110.3	4139.6
18.5°	3974.0	3983.8	4010.1	4037.8	4048.8	4037.8	4010.1	3983.8	3974.0	3983.8	4010.1
19°	3847.2	3856.6	3882.4	3905.9	3918.4	3905.9	3882.4	3856.6	3847.2	3856.6	3882.4
19.5°	3720.3	3730.5	3751.7	3771.6	3781.4	3771.6	3751.7	3730.5	3720.3	3730.5	3751.7
20°	3591.2	3599.8	3616.6	3635.8	3636.2	3635.8	3616.6	3599.8	3591.2	3599.8	3616.6
20.5°	3460.4	3465.9	3483.9	3501.9	3499.5	3501.9	3483.9	3465.9	3460.4	3465.9	3483.9
21°	3326.9	3335.9	3353.1	3370.7	3370.4	3370.7	3353.1	3335.9	3326.9	3335.9	3353.1



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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°	2955.8	2966.7	2982.4	3011.0	3023.5	3011.0	2982.4	2966.7	2955.8	2966.7	2982.4
23°	2848.9	2857.1	2875.9	2900.2	2914.3	2900.2	2875.9	2857.1	2848.9	2857.1	2875.9
23.5°	2743.2	2763.5	2778.4	2798.4	2812.1	2798.4	2778.4	2763.5	2743.2	2763.5	2778.4
24°	2660.2	2668.0	2688.8	2710.3	2728.3	2710.3	2688.8	2668.0	2660.2	2668.0	2688.8
24.5°	2574.5	2583.8	2604.2	2625.7	2647.3	2625.7	2604.2	2583.8	2574.5	2583.8	2604.2
25°	2497.3	2507.1	2526.3	2544.7	2565.1	2544.7	2526.3	2507.1	2497.3	2507.1	2526.3
25.5°	2431.2	2435.5	2451.1	2466.8	2484.4	2466.8	2451.1	2435.5	2431.2	2435.5	2451.1
26°	2365.8	2369.7	2379.9	2394.8	2405.3	2394.8	2379.9	2369.7	2365.8	2369.7	2379.9
26.5°	2298.1	2303.9	2316.1	2329.0	2335.6	2329.0	2316.1	2303.9	2298.1	2303.9	2316.1
27°	2232.7	2239.7	2255.4	2269.5	2276.1	2269.5	2255.4	2239.7	2232.7	2239.7	2255.4
27.5°	2172.8	2179.4	2194.7	2209.6	2219.0	2209.6	2194.7	2179.4	2172.8	2179.4	2194.7
28°	2117.6	2123.1	2135.6	2149.3	2157.1	2149.3	2135.6	2123.1	2117.6	2123.1	2135.6
28.5°	2065.1	2069.8	2080.4	2091.7	2100.4	2091.7	2080.4	2069.8	2065.1	2069.8	2080.4
29°	2014.2	2018.1	2028.3	2039.3	2044.8	2039.3	2028.3	2018.1	2014.2	2018.1	2028.3
29.5°	1963.3	1967.6	1977.8	1988.0	1993.1	1988.0	1977.8	1967.6	1963.3	1967.6	1977.8
30°	1914.4	1918.3	1928.1	1937.9	1943.8	1937.9	1928.1	1918.3	1914.4	1918.3	1928.1
30.5°	1867.0	1870.2	1880.3	1890.1	1896.0	1890.1	1880.3	1870.2	1867.0	1870.2	1880.3
31°	1820.4	1825.5	1834.5	1844.7	1849.8	1844.7	1834.5	1825.5	1820.4	1825.5	1834.5
31.5°	1777.8	1780.9	1790.7	1800.1	1806.3	1800.1	1790.7	1780.9	1777.8	1780.9	1790.7
32°	1735.5	1739.4	1748.4	1757.4	1762.9	1757.4	1748.4	1739.4	1735.5	1739.4	1748.4
32.5°	1696.3	1700.2	1708.5	1714.7	1717.9	1714.7	1708.5	1700.2	1696.3	1700.2	1708.5
33°	1659.9	1661.9	1667.0	1670.1	1669.7	1670.1	1667.0	1661.9	1659.9	1661.9	1667.0
33.5°	1622.3	1622.0	1622.3	1622.3	1621.6	1622.3	1622.3	1622.0	1622.3	1622.0	1622.3
34°	1580.5	1577.7	1574.6	1578.9	1570.3	1578.9	1574.6	1577.7	1580.5	1577.7	1574.6
34.5°	1532.3	1531.5	1530.7	1527.6	1519.8	1527.6	1530.7	1531.5	1532.3	1531.5	1530.7
35°	1482.2	1478.7	1478.7	1475.5	1469.7	1475.5	1478.7	1478.7	1482.2	1478.7	1478.7
35.5°	1430.5	1426.2	1426.2	1420.7	1417.2	1420.7	1426.2	1426.2	1430.5	1426.2	1426.2
36°	1373.7	1371.4	1372.6	1363.6	1362.8	1363.6	1372.6	1371.4	1373.7	1371.4	1372.6
36.5°	1315.0	1314.6	1314.6	1306.0	1304.5	1306.0	1314.6	1314.6	1315.0	1314.6	1314.6
37°	1254.3	1254.3	1254.7	1248.1	1245.3	1248.1	1254.7	1254.3	1254.3	1254.3	1254.7
37.5°	1193.7	1192.5	1197.6	1189.4	1187.4	1189.4	1197.6	1192.5	1193.7	1192.5	1197.6
38°	1131.8	1129.1	1130.6	1128.3	1128.7	1128.3	1130.6	1129.1	1131.8	1129.1	1130.6
38.5°	1067.2	1064.9	1064.1	1067.6	1068.8	1067.6	1064.1	1064.9	1067.2	1064.9	1064.1
39°	1001.8	1000.7	998.7	1006.5	1006.9	1006.5	998.7	1000.7	1001.8	1000.7	998.7
39.5°	935.3	935.3	935.3	945.1	947.4	945.1	935.3	935.3	935.3	935.3	935.3
40°	869.5	871.5	875.4	884.0	887.9	884.0	875.4	871.5	869.5	871.5	875.4
40.5°	804.9	807.3	815.9	822.5	829.6	822.5	815.9	807.3	804.9	807.3	815.9
41°	741.1	744.6	756.0	763.0	770.5	763.0	756.0	744.6	741.1	744.6	756.0
41.5°	677.3	683.2	696.5	704.3	712.9	704.3	696.5	683.2	677.3	683.2	696.5
42°	616.2	622.9	638.5	647.5	655.7	647.5	638.5	622.9	616.2	622.9	638.5
42.5°	557.1	564.5	582.1	593.9	601.3	593.9	582.1	564.5	557.1	564.5	582.1
43°	499.5	510.1	528.1	541.4	547.7	541.4	528.1	510.1	499.5	510.1	528.1
43.5°	445.5	458.0	475.7	490.1	495.6	490.1	475.7	458.0	445.5	458.0	475.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	305.8	312.4	328.5	347.6	354.7	347.6	328.5	312.4	305.8	312.4	328.5
45.5°	263.5	270.1	286.2	305.4	313.2	305.4	286.2	270.1	263.5	270.1	286.2
46°	222.8	231.0	247.4	267.0	279.5	267.0	247.4	231.0	222.8	231.0	247.4
46.5°	188.3	194.6	213.4	231.8	245.9	231.8	213.4	194.6	188.3	194.6	213.4
47°	157.8	164.8	181.3	198.1	212.2	198.1	181.3	164.8	157.8	164.8	181.3
47.5°	130.8	136.6	150.7	165.2	178.5	165.2	150.7	136.6	130.8	136.6	150.7
48°	108.4	112.0	123.7	135.5	144.9	135.5	123.7	112.0	108.4	112.0	123.7
48.5°	87.7	92.0	99.8	110.4	118.6	110.4	99.8	92.0	87.7	92.0	99.8
49°	68.5	73.2	81.4	88.1	95.1	88.1	81.4	73.2	68.5	73.2	81.4
49.5°	53.6	57.2	64.2	70.5	75.6	70.5	64.2	57.2	53.6	57.2	64.2
50°	41.5	43.8	48.9	54.4	58.3	54.4	48.9	43.8	41.5	43.8	48.9
50.5°	30.9	31.3	37.2	42.7	45.4	42.7	37.2	31.3	30.9	31.3	37.2
51°	21.5	23.1	27.8	33.7	38.4	33.7	27.8	23.1	21.5	23.1	27.8
51.5°	14.1	17.2	21.5	25.4	31.7	25.4	21.5	17.2	14.1	17.2	21.5
52°	12.1	12.9	16.1	19.6	24.7	19.6	16.1	12.9	12.1	12.9	16.1
52.5°	11.0	11.4	11.7	14.9	18.0	14.9	11.7	11.4	11.0	11.4	11.7
53°	10.2	10.6	10.6	11.4	11.4	11.4	10.6	10.6	10.2	10.6	10.6
53.5°	9.4	9.8	10.2	10.2	9.8	10.2	10.2	9.8	9.4	9.8	10.2
54°	9.0	9.0	9.4	9.4	9.0	9.4	9.4	9.0	9.0	9.0	9.4
54.5°	8.2	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.2	8.6	8.6
55°	7.8	8.2	8.2	8.2	8.2	8.2	8.2	8.2	7.8	8.2	8.2
55.5°	7.4	7.4	7.8	7.8	7.8	7.8	7.8	7.4	7.4	7.4	7.8
56°	7.0	7.0	7.4	7.4	7.4	7.4	7.4	7.0	7.0	7.0	7.4
56.5°	6.7	6.7	7.0	7.0	6.7	7.0	7.0	6.7	6.7	6.7	7.0
57°	6.3	6.3	6.7	6.7	6.3	6.7	6.7	6.3	6.3	6.3	6.7
57.5°	5.9	5.9	6.3	6.3	6.3	6.3	6.3	5.9	5.9	5.9	6.3
58°	5.5	5.5	5.9	5.9	5.9	5.9	5.9	5.5	5.5	5.5	5.9
58.5°	5.1	5.1	5.5	5.5	5.5	5.5	5.5	5.1	5.1	5.1	5.5
59°	4.7	5.1	5.1	5.1	5.1	5.1	5.1	5.1	4.7	5.1	5.1
59.5°	4.3	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.3	4.7	4.7
60°	4.3	4.3	4.7	4.7	4.3	4.7	4.7	4.3	4.3	4.3	4.7
60.5°	3.9	3.9	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	4.3
61°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
61.5°	3.5	3.5	3.9	3.9	3.9	3.9	3.9	3.5	3.5	3.5	3.9
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°	2.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.0	2.3	2.3



TEST NUMBER: P776466

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
68°	1.6	1.6	2.0	2.0	2.0	2.0	2.0	1.6	1.6	1.6	2.0
68.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
69°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
69.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.6
70.5°	1.2	1.2	1.2	1.6	1.2	1.6	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: P776466
CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3000K

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: P776466

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	7241.4	7241.4	7241.4	7241.4	7241.4	7241.4
0.5°	7241.8	7234.8	7241.8	7240.2	7236.3	7234.8
1°	7233.6	7226.5	7233.6	7230.9	7226.9	7225.0
1.5°	7219.1	7212.1	7219.1	7216.0	7210.9	7208.5
2°	7199.1	7192.5	7199.1	7195.2	7188.6	7186.6
2.5°	7172.9	7166.6	7172.9	7168.2	7160.4	7156.5
3°	7141.6	7135.7	7141.6	7135.7	7126.3	7122.4
3.5°	7104.4	7100.1	7104.4	7097.0	7086.4	7081.7
4°	7061.7	7057.8	7061.7	7052.7	7040.2	7034.3
4.5°	7013.6	7009.7	7013.6	7002.6	6987.7	6982.3
5°	6959.9	6956.4	6959.9	6947.0	6930.6	6924.7
5.5°	6899.7	6898.1	6899.7	6884.8	6867.5	6861.3
6°	6834.7	6835.1	6834.7	6817.4	6798.6	6792.0
6.5°	6765.0	6766.2	6765.0	6745.8	6725.0	6719.6
7°	6689.8	6694.1	6689.8	6668.3	6646.7	6640.5
7.5°	6607.6	6613.9	6607.6	6584.9	6562.6	6557.5
8°	6522.3	6530.1	6522.3	6497.6	6474.1	6468.2
8.5°	6432.2	6441.2	6432.2	6404.4	6380.9	6375.8
9°	6337.9	6348.0	6337.9	6308.1	6283.4	6276.8
9.5°	6237.6	6249.4	6237.6	6206.3	6182.8	6175.8
10°	6136.2	6146.0	6136.2	6102.2	6077.9	6070.1
10.5°	6029.8	6039.2	6029.8	5993.7	5968.7	5960.9
11°	5919.7	5928.0	5919.7	5882.2	5856.7	5844.2
11.5°	5803.9	5813.7	5803.9	5767.5	5742.0	5731.8
12°	5687.6	5696.6	5687.6	5650.8	5624.6	5612.4
12.5°	5566.6	5574.5	5566.6	5531.8	5505.2	5492.6
13°	5447.2	5453.5	5447.2	5412.4	5383.8	5369.7
13.5°	5321.2	5330.2	5321.2	5290.6	5260.9	5246.8
14°	5193.9	5203.7	5193.9	5166.1	5136.0	5120.7
14.5°	5065.9	5074.1	5065.9	5039.7	5009.1	4993.5
15°	4938.7	4944.5	4938.7	4912.0	4881.9	4865.9
15.5°	4809.1	4818.1	4809.1	4783.6	4753.5	4737.8
16°	4679.9	4690.5	4679.9	4654.4	4624.3	4610.6
16.5°	4551.5	4562.8	4551.5	4526.8	4496.7	4484.9
17°	4425.0	4433.6	4425.0	4396.1	4368.7	4355.7
17.5°	4296.6	4306.8	4296.6	4267.3	4239.9	4226.9
18°	4168.2	4178.4	4168.2	4139.6	4110.3	4100.5
18.5°	4037.8	4048.8	4037.8	4010.1	3983.8	3974.0
19°	3905.9	3918.4	3905.9	3882.4	3856.6	3847.2
19.5°	3771.6	3781.4	3771.6	3751.7	3730.5	3720.3
20°	3635.8	3636.2	3635.8	3616.6	3599.8	3591.2
20.5°	3501.9	3499.5	3501.9	3483.9	3465.9	3460.4
21°	3370.7	3370.4	3370.7	3353.1	3335.9	3326.9



TEST NUMBER: P776466

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3011.0	3023.5	3011.0	2982.4	2966.7	2955.8
23°	2900.2	2914.3	2900.2	2875.9	2857.1	2848.9
23.5°	2798.4	2812.1	2798.4	2778.4	2763.5	2743.2
24°	2710.3	2728.3	2710.3	2688.8	2668.0	2660.2
24.5°	2625.7	2647.3	2625.7	2604.2	2583.8	2574.5
25°	2544.7	2565.1	2544.7	2526.3	2507.1	2497.3
25.5°	2466.8	2484.4	2466.8	2451.1	2435.5	2431.2
26°	2394.8	2405.3	2394.8	2379.9	2369.7	2365.8
26.5°	2329.0	2335.6	2329.0	2316.1	2303.9	2298.1
27°	2269.5	2276.1	2269.5	2255.4	2239.7	2232.7
27.5°	2209.6	2219.0	2209.6	2194.7	2179.4	2172.8
28°	2149.3	2157.1	2149.3	2135.6	2123.1	2117.6
28.5°	2091.7	2100.4	2091.7	2080.4	2069.8	2065.1
29°	2039.3	2044.8	2039.3	2028.3	2018.1	2014.2
29.5°	1988.0	1993.1	1988.0	1977.8	1967.6	1963.3
30°	1937.9	1943.8	1937.9	1928.1	1918.3	1914.4
30.5°	1890.1	1896.0	1890.1	1880.3	1870.2	1867.0
31°	1844.7	1849.8	1844.7	1834.5	1825.5	1820.4
31.5°	1800.1	1806.3	1800.1	1790.7	1780.9	1777.8
32°	1757.4	1762.9	1757.4	1748.4	1739.4	1735.5
32.5°	1714.7	1717.9	1714.7	1708.5	1700.2	1696.3
33°	1670.1	1669.7	1670.1	1667.0	1661.9	1659.9
33.5°	1622.3	1621.6	1622.3	1622.3	1622.0	1622.3
34°	1578.9	1570.3	1578.9	1574.6	1577.7	1580.5
34.5°	1527.6	1519.8	1527.6	1530.7	1531.5	1532.3
35°	1475.5	1469.7	1475.5	1478.7	1478.7	1482.2
35.5°	1420.7	1417.2	1420.7	1426.2	1426.2	1430.5
36°	1363.6	1362.8	1363.6	1372.6	1371.4	1373.7
36.5°	1306.0	1304.5	1306.0	1314.6	1314.6	1315.0
37°	1248.1	1245.3	1248.1	1254.7	1254.3	1254.3
37.5°	1189.4	1187.4	1189.4	1197.6	1192.5	1193.7
38°	1128.3	1128.7	1128.3	1130.6	1129.1	1131.8
38.5°	1067.6	1068.8	1067.6	1064.1	1064.9	1067.2
39°	1006.5	1006.9	1006.5	998.7	1000.7	1001.8
39.5°	945.1	947.4	945.1	935.3	935.3	935.3
40°	884.0	887.9	884.0	875.4	871.5	869.5
40.5°	822.5	829.6	822.5	815.9	807.3	804.9
41°	763.0	770.5	763.0	756.0	744.6	741.1
41.5°	704.3	712.9	704.3	696.5	683.2	677.3
42°	647.5	655.7	647.5	638.5	622.9	616.2
42.5°	593.9	601.3	593.9	582.1	564.5	557.1
43°	541.4	547.7	541.4	528.1	510.1	499.5
43.5°	490.1	495.6	490.1	475.7	458.0	445.5



TEST NUMBER: P776466

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	347.6	354.7	347.6	328.5	312.4	305.8
45.5°	305.4	313.2	305.4	286.2	270.1	263.5
46°	267.0	279.5	267.0	247.4	231.0	222.8
46.5°	231.8	245.9	231.8	213.4	194.6	188.3
47°	198.1	212.2	198.1	181.3	164.8	157.8
47.5°	165.2	178.5	165.2	150.7	136.6	130.8
48°	135.5	144.9	135.5	123.7	112.0	108.4
48.5°	110.4	118.6	110.4	99.8	92.0	87.7
49°	88.1	95.1	88.1	81.4	73.2	68.5
49.5°	70.5	75.6	70.5	64.2	57.2	53.6
50°	54.4	58.3	54.4	48.9	43.8	41.5
50.5°	42.7	45.4	42.7	37.2	31.3	30.9
51°	33.7	38.4	33.7	27.8	23.1	21.5
51.5°	25.4	31.7	25.4	21.5	17.2	14.1
52°	19.6	24.7	19.6	16.1	12.9	12.1
52.5°	14.9	18.0	14.9	11.7	11.4	11.0
53°	11.4	11.4	11.4	10.6	10.6	10.2
53.5°	10.2	9.8	10.2	10.2	9.8	9.4
54°	9.4	9.0	9.4	9.4	9.0	9.0
54.5°	8.6	8.6	8.6	8.6	8.6	8.2
55°	8.2	8.2	8.2	8.2	8.2	7.8
55.5°	7.8	7.8	7.8	7.8	7.4	7.4
56°	7.4	7.4	7.4	7.4	7.0	7.0
56.5°	7.0	6.7	7.0	7.0	6.7	6.7
57°	6.7	6.3	6.7	6.7	6.3	6.3
57.5°	6.3	6.3	6.3	6.3	5.9	5.9
58°	5.9	5.9	5.9	5.9	5.5	5.5
58.5°	5.5	5.5	5.5	5.5	5.1	5.1
59°	5.1	5.1	5.1	5.1	5.1	4.7
59.5°	4.7	4.7	4.7	4.7	4.7	4.3
60°	4.7	4.3	4.7	4.7	4.3	4.3
60.5°	4.3	4.3	4.3	4.3	3.9	3.9
61°	3.9	3.9	3.9	3.9	3.9	3.9
61.5°	3.9	3.9	3.9	3.9	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	2.0



TEST NUMBER: P776466
 CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	2.0	2.0	2.0	2.0	2.0	2.0
68°	2.0	2.0	2.0	2.0	1.6	1.6
68.5°	1.6	1.6	1.6	1.6	1.6	1.6
69°	1.6	1.6	1.6	1.6	1.6	1.6
69.5°	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.6	1.6	1.6	1.6	1.2	1.2
70.5°	1.6	1.2	1.6	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: P776466

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3000K

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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Scaled Data Report





21.5°	3188.7	3207.9	3227.1	3245.1	3249.8	3245.1	3227.1	3207.9	3188.7	3207.9	3227.1
22°	3068.5	3081.0	3103.4	3121.8	3131.2	3121.8	3103.4	3081.0	3068.5	3081.0	3103.4



44°	396.6	407.5	425.2	440.0	445.9	440.0	425.2	407.5	396.6	407.5	425.2
44.5°	350.4	359.0	375.4	391.5	398.5	391.5	375.4	359.0	350.4	359.0	375.4



66.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
67°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0



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°	3245.1	3249.8	3245.1	3227.1	3207.9	3188.7
22°	3121.8	3131.2	3121.8	3103.4	3081.0	3068.5



44°	440.0	445.9	440.0	425.2	407.5	396.6
44.5°	391.5	398.5	391.5	375.4	359.0	350.4

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66.5°	2.0	2.0	2.0	2.0	2.0	2.0
67°	2.0	2.0	2.0	2.0	2.0	2.0

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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)