

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: P776469

Luminaire Tested: HCDJBL3040CSD-HCD82TRH-4000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776469
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-5000K
Description: 8 INCH ROUND NARROW HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4556.7 lumens
Efficiency: N/A
Efficacy: 118.4 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

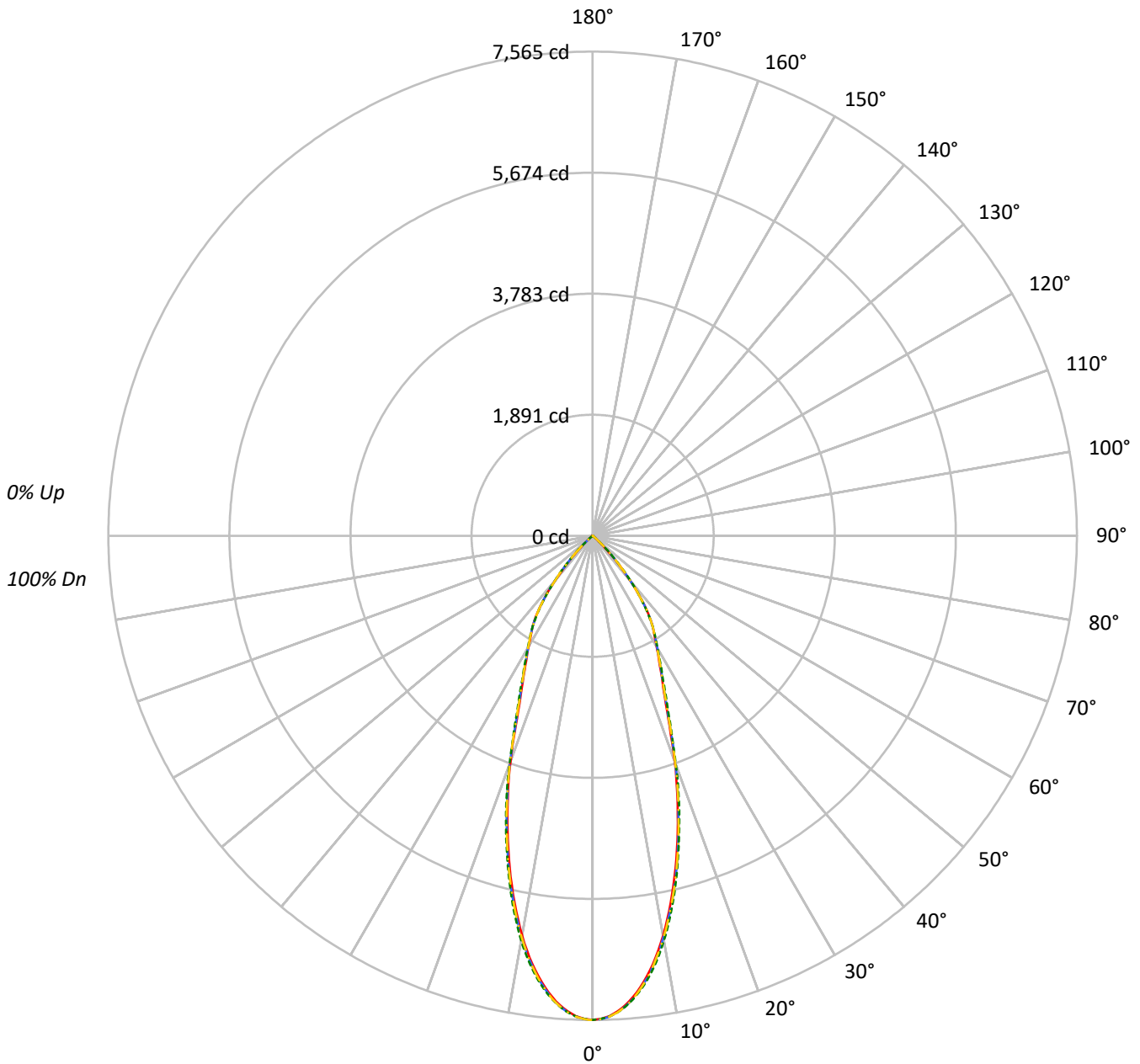
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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					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	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°	230968	230968	230968	230968
5°	221709	222726	221709	222726
10°	196594	199056	196594	199056
15°	160672	163271	160672	163271
20°	121891	123422	121891	123422
25°	87888	90273	87888	90273
30°	70507	71589	70507	71589
35°	57714	57225	57714	57225
40°	36204	36969	36204	36969
45°	13791	16001	13791	16001
50°	2061	2893	2061	2893
55°	436	458	436	458
60°	275	275	275	275
65°	181	181	181	181
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: 16001 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	664.4	14.6
10°-20°	1409.7	30.9
20°-30°	1238.1	27.2
30°-40°	934.9	20.5
40°-50°	294.6	6.5
50°-60°	11.3	0.2
60°-70°	2.7	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°	3312.2	72.7
0°-40°	4247.1	93.2
0°-60°	4553.0	99.9
0°-90°	4556.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4556.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	7565	7565	7565	7565	7565	
5°	7234	7268	7234	7268	7234	662
15°	5083	5166	5083	5166	5083	1398
25°	2609	2680	2609	2680	2609	1226
35°	1548	1535	1548	1535	1548	933
45°	319	371	319	371	319	279
55°	8	9	8	9	8	10
65°	2	2	2	2	2	3
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°	7565.2	7565.2	7565.2	7565.2	7565.2	7565.2	7565.2	7565.2	7565.2	7565.2	7565.2
0.5°	7558.3	7559.9	7564.0	7565.6	7558.3	7565.6	7564.0	7559.9	7558.3	7559.9	7564.0
1°	7548.0	7550.1	7554.2	7557.0	7549.7	7557.0	7554.2	7550.1	7548.0	7550.1	7554.2
1.5°	7530.9	7533.3	7538.6	7541.9	7534.6	7541.9	7538.6	7533.3	7530.9	7533.3	7538.6
2°	7508.0	7510.0	7517.0	7521.1	7514.1	7521.1	7517.0	7510.0	7508.0	7510.0	7517.0
2.5°	7476.5	7480.6	7488.7	7493.7	7487.1	7493.7	7488.7	7480.6	7476.5	7480.6	7488.7
3°	7440.9	7445.0	7454.8	7460.9	7454.8	7460.9	7454.8	7445.0	7440.9	7445.0	7454.8
3.5°	7398.4	7403.3	7414.3	7422.1	7417.6	7422.1	7414.3	7403.3	7398.4	7403.3	7414.3
4°	7348.9	7355.0	7368.1	7377.5	7373.4	7377.5	7368.1	7355.0	7348.9	7355.0	7368.1
4.5°	7294.5	7300.2	7315.7	7327.2	7323.1	7327.2	7315.7	7300.2	7294.5	7300.2	7315.7
5°	7234.3	7240.5	7257.7	7271.2	7267.5	7271.2	7257.7	7240.5	7234.3	7240.5	7257.7
5.5°	7168.1	7174.6	7192.6	7208.2	7206.5	7208.2	7192.6	7174.6	7168.1	7174.6	7192.6
6°	7095.7	7102.7	7122.3	7140.3	7140.7	7140.3	7122.3	7102.7	7095.7	7102.7	7122.3
6.5°	7020.0	7025.8	7047.4	7067.5	7068.7	7067.5	7047.4	7025.8	7020.0	7025.8	7047.4
7°	6937.4	6944.0	6966.5	6989.0	6993.4	6989.0	6966.5	6944.0	6937.4	6944.0	6966.5
7.5°	6850.7	6856.0	6879.3	6903.1	6909.6	6903.1	6879.3	6856.0	6850.7	6856.0	6879.3
8°	6757.5	6763.6	6788.1	6813.9	6822.1	6813.9	6788.1	6763.6	6757.5	6763.6	6788.1
8.5°	6660.9	6666.3	6690.8	6719.8	6729.2	6719.8	6690.8	6666.3	6660.9	6666.3	6690.8
9°	6557.5	6564.4	6590.2	6621.3	6631.9	6621.3	6590.2	6564.4	6557.5	6564.4	6590.2
9.5°	6451.9	6459.3	6483.8	6516.6	6528.8	6516.6	6483.8	6459.3	6451.9	6459.3	6483.8
10°	6341.5	6349.7	6375.0	6410.6	6420.9	6410.6	6375.0	6349.7	6341.5	6349.7	6375.0
10.5°	6227.4	6235.6	6261.8	6299.4	6309.2	6299.4	6261.8	6235.6	6227.4	6235.6	6261.8
11°	6105.5	6118.6	6145.2	6184.5	6193.0	6184.5	6145.2	6118.6	6105.5	6118.6	6145.2
11.5°	5988.1	5998.8	6025.4	6063.4	6073.6	6063.4	6025.4	5998.8	5988.1	5998.8	6025.4
12°	5863.4	5876.1	5903.5	5941.9	5951.3	5941.9	5903.5	5876.1	5863.4	5876.1	5903.5
12.5°	5738.2	5751.3	5779.1	5815.5	5823.7	5815.5	5779.1	5751.3	5738.2	5751.3	5779.1
13°	5609.8	5624.5	5654.4	5690.8	5697.3	5690.8	5654.4	5624.5	5609.8	5624.5	5654.4
13.5°	5481.4	5496.1	5527.2	5559.1	5568.5	5559.1	5527.2	5496.1	5481.4	5496.1	5527.2
14°	5349.7	5365.6	5397.1	5426.2	5436.4	5426.2	5397.1	5365.6	5349.7	5365.6	5397.1
14.5°	5216.8	5233.1	5265.0	5292.4	5301.0	5292.4	5265.0	5233.1	5216.8	5233.1	5265.0
15°	5083.4	5100.2	5131.7	5159.5	5165.6	5159.5	5131.7	5100.2	5083.4	5100.2	5131.7
15.5°	4949.7	4966.0	4997.5	5024.1	5033.5	5024.1	4997.5	4966.0	4949.7	4966.0	4997.5
16°	4816.8	4831.1	4862.6	4889.2	4900.2	4889.2	4862.6	4831.1	4816.8	4831.1	4862.6
16.5°	4685.5	4697.7	4729.2	4755.0	4766.9	4755.0	4729.2	4697.7	4685.5	4697.7	4729.2
17°	4550.5	4564.0	4592.6	4622.9	4631.9	4622.9	4592.6	4564.0	4550.5	4564.0	4592.6
17.5°	4415.9	4429.4	4458.1	4488.7	4499.4	4488.7	4458.1	4429.4	4415.9	4429.4	4458.1
18°	4283.8	4294.1	4324.7	4354.6	4365.2	4354.6	4324.7	4294.1	4283.8	4294.1	4324.7
18.5°	4151.7	4162.0	4189.4	4218.4	4229.9	4218.4	4189.4	4162.0	4151.7	4162.0	4189.4
19°	4019.2	4029.0	4056.0	4080.6	4093.7	4080.6	4056.0	4029.0	4019.2	4029.0	4056.0
19.5°	3886.7	3897.3	3919.4	3940.3	3950.5	3940.3	3919.4	3897.3	3886.7	3897.3	3919.4
20°	3751.7	3760.7	3778.3	3798.4	3798.8	3798.4	3778.3	3760.7	3751.7	3760.7	3778.3
20.5°	3615.1	3620.9	3639.7	3658.5	3656.0	3658.5	3639.7	3620.9	3615.1	3620.9	3639.7
21°	3475.7	3485.1	3503.1	3521.5	3521.1	3521.5	3503.1	3485.1	3475.7	3485.1	3503.1



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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°	3087.9	3099.4	3115.7	3145.6	3158.7	3145.6	3115.7	3099.4	3087.9	3099.4	3115.7
23°	2976.3	2984.9	3004.5	3029.9	3044.6	3029.9	3004.5	2984.9	2976.3	2984.9	3004.5
23.5°	2865.8	2887.1	2902.7	2923.5	2937.8	2923.5	2902.7	2887.1	2865.8	2887.1	2902.7
24°	2779.1	2787.3	2809.0	2831.5	2850.3	2831.5	2809.0	2787.3	2779.1	2787.3	2809.0
24.5°	2689.6	2699.4	2720.7	2743.1	2765.6	2743.1	2720.7	2699.4	2689.6	2699.4	2720.7
25°	2609.0	2619.2	2639.3	2658.5	2679.8	2658.5	2639.3	2619.2	2609.0	2619.2	2639.3
25.5°	2539.9	2544.4	2560.7	2577.1	2595.5	2577.1	2560.7	2544.4	2539.9	2544.4	2560.7
26°	2471.6	2475.7	2486.3	2501.8	2512.9	2501.8	2486.3	2475.7	2471.6	2475.7	2486.3
26.5°	2400.8	2407.0	2419.6	2433.1	2440.1	2433.1	2419.6	2407.0	2400.8	2407.0	2419.6
27°	2332.5	2339.9	2356.2	2371.0	2377.9	2371.0	2356.2	2339.9	2332.5	2339.9	2356.2
27.5°	2269.9	2276.9	2292.8	2308.4	2318.2	2308.4	2292.8	2276.9	2269.9	2276.9	2292.8
28°	2212.3	2218.0	2231.1	2245.4	2253.6	2245.4	2231.1	2218.0	2212.3	2218.0	2231.1
28.5°	2157.5	2162.4	2173.4	2185.3	2194.3	2185.3	2173.4	2162.4	2157.5	2162.4	2173.4
29°	2104.3	2108.4	2119.0	2130.5	2136.2	2130.5	2119.0	2108.4	2104.3	2108.4	2119.0
29.5°	2051.1	2055.6	2066.3	2076.9	2082.2	2076.9	2066.3	2055.6	2051.1	2055.6	2066.3
30°	2000.0	2004.1	2014.3	2024.5	2030.7	2024.5	2014.3	2004.1	2000.0	2004.1	2014.3
30.5°	1950.5	1953.8	1964.4	1974.6	1980.8	1974.6	1964.4	1953.8	1950.5	1953.8	1964.4
31°	1901.8	1907.2	1916.6	1927.2	1932.5	1927.2	1916.6	1907.2	1901.8	1907.2	1916.6
31.5°	1857.3	1860.5	1870.8	1880.6	1887.1	1880.6	1870.8	1860.5	1857.3	1860.5	1870.8
32°	1813.1	1817.2	1826.6	1836.0	1841.7	1836.0	1826.6	1817.2	1813.1	1817.2	1826.6
32.5°	1772.2	1776.3	1784.9	1791.4	1794.7	1791.4	1784.9	1776.3	1772.2	1776.3	1784.9
33°	1734.1	1736.2	1741.5	1744.8	1744.4	1744.8	1741.5	1736.2	1734.1	1736.2	1741.5
33.5°	1694.9	1694.5	1694.9	1694.9	1694.1	1694.9	1694.9	1694.5	1694.9	1694.5	1694.9
34°	1651.1	1648.3	1645.0	1649.5	1640.5	1649.5	1645.0	1648.3	1651.1	1648.3	1645.0
34.5°	1600.8	1600.0	1599.2	1595.9	1587.7	1595.9	1599.2	1600.0	1600.8	1600.0	1599.2
35°	1548.5	1544.8	1544.8	1541.5	1535.4	1541.5	1544.8	1544.8	1548.5	1544.8	1544.8
35.5°	1494.5	1490.0	1490.0	1484.3	1480.6	1484.3	1490.0	1490.0	1494.5	1490.0	1490.0
36°	1435.2	1432.7	1433.9	1424.5	1423.7	1424.5	1433.9	1432.7	1435.2	1432.7	1433.9
36.5°	1373.8	1373.4	1373.4	1364.4	1362.8	1364.4	1373.4	1373.4	1373.8	1373.4	1373.4
37°	1310.4	1310.4	1310.8	1303.9	1301.0	1303.9	1310.8	1310.4	1310.4	1310.4	1310.8
37.5°	1247.0	1245.8	1251.1	1242.5	1240.5	1242.5	1251.1	1245.8	1247.0	1245.8	1251.1
38°	1182.4	1179.5	1181.2	1178.7	1179.1	1178.7	1181.2	1179.5	1182.4	1179.5	1181.2
38.5°	1114.9	1112.5	1111.7	1115.3	1116.6	1115.3	1111.7	1112.5	1114.9	1112.5	1111.7
39°	1046.6	1045.4	1043.4	1051.5	1051.9	1051.5	1043.4	1045.4	1046.6	1045.4	1043.4
39.5°	977.1	977.1	977.1	987.3	989.8	987.3	977.1	977.1	977.1	977.1	977.1
40°	908.4	910.4	914.5	923.5	927.6	923.5	914.5	910.4	908.4	910.4	914.5
40.5°	840.9	843.4	852.4	859.3	866.7	859.3	852.4	843.4	840.9	843.4	852.4
41°	774.2	777.9	789.8	797.1	804.9	797.1	789.8	777.9	774.2	777.9	789.8
41.5°	707.6	713.7	727.6	735.8	744.8	735.8	727.6	713.7	707.6	713.7	727.6
42°	643.8	650.7	667.1	676.5	685.1	676.5	667.1	650.7	643.8	650.7	667.1
42.5°	582.0	589.8	608.2	620.4	628.2	620.4	608.2	589.8	582.0	589.8	608.2
43°	521.9	532.9	551.7	565.6	572.2	565.6	551.7	532.9	521.9	532.9	551.7
43.5°	465.4	478.5	496.9	512.1	517.8	512.1	496.9	478.5	465.4	478.5	496.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	319.4	326.4	343.1	363.2	370.6	363.2	343.1	326.4	319.4	326.4	343.1
45.5°	275.3	282.2	299.0	319.0	327.2	319.0	299.0	282.2	275.3	282.2	299.0
46°	232.7	241.3	258.5	278.9	292.0	278.9	258.5	241.3	232.7	241.3	258.5
46.5°	196.7	203.3	222.9	242.1	256.9	242.1	222.9	203.3	196.7	203.3	222.9
47°	164.8	172.2	189.4	207.0	221.7	207.0	189.4	172.2	164.8	172.2	189.4
47.5°	136.6	142.7	157.5	172.6	186.5	172.6	157.5	142.7	136.6	142.7	157.5
48°	113.3	117.0	129.2	141.5	151.3	141.5	129.2	117.0	113.3	117.0	129.2
48.5°	91.6	96.1	104.3	115.3	123.9	115.3	104.3	96.1	91.6	96.1	104.3
49°	71.6	76.5	85.1	92.0	99.4	92.0	85.1	76.5	71.6	76.5	85.1
49.5°	56.0	59.7	67.1	73.6	78.9	73.6	67.1	59.7	56.0	59.7	67.1
50°	43.4	45.8	51.1	56.9	60.9	56.9	51.1	45.8	43.4	45.8	51.1
50.5°	32.3	32.7	38.9	44.6	47.4	44.6	38.9	32.7	32.3	32.7	38.9
51°	22.5	24.1	29.0	35.2	40.1	35.2	29.0	24.1	22.5	24.1	29.0
51.5°	14.7	18.0	22.5	26.6	33.1	26.6	22.5	18.0	14.7	18.0	22.5
52°	12.7	13.5	16.8	20.4	25.8	20.4	16.8	13.5	12.7	13.5	16.8
52.5°	11.5	11.9	12.3	15.5	18.8	15.5	12.3	11.9	11.5	11.9	12.3
53°	10.6	11.0	11.0	11.9	11.9	11.9	11.0	11.0	10.6	11.0	11.0
53.5°	9.8	10.2	10.6	10.6	10.2	10.6	10.6	10.2	9.8	10.2	10.6
54°	9.4	9.4	9.8	9.8	9.4	9.8	9.8	9.4	9.4	9.4	9.8
54.5°	8.6	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.6	9.0	9.0
55°	8.2	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.2	8.6	8.6
55.5°	7.8	7.8	8.2	8.2	8.2	8.2	8.2	7.8	7.8	7.8	8.2
56°	7.4	7.4	7.8	7.8	7.8	7.8	7.8	7.4	7.4	7.4	7.8
56.5°	7.0	7.0	7.4	7.4	7.0	7.4	7.4	7.0	7.0	7.0	7.4
57°	6.5	6.5	7.0	7.0	6.5	7.0	7.0	6.5	6.5	6.5	7.0
57.5°	6.1	6.1	6.5	6.5	6.5	6.5	6.5	6.1	6.1	6.1	6.5
58°	5.7	5.7	6.1	6.1	6.1	6.1	6.1	5.7	5.7	5.7	6.1
58.5°	5.3	5.3	5.7	5.7	5.7	5.7	5.7	5.3	5.3	5.3	5.7
59°	4.9	5.3	5.3	5.3	5.3	5.3	5.3	5.3	4.9	5.3	5.3
59.5°	4.5	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.5	4.9	4.9
60°	4.5	4.5	4.9	4.9	4.5	4.9	4.9	4.5	4.5	4.5	4.9
60.5°	4.1	4.1	4.5	4.5	4.5	4.5	4.5	4.1	4.1	4.1	4.5
61°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
61.5°	3.7	3.7	4.1	4.1	4.1	4.1	4.1	3.7	3.7	3.7	4.1
62°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
62.5°	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.7
63°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
63.5°	2.9	2.9	3.3	3.3	3.3	3.3	3.3	2.9	2.9	2.9	3.3
64°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
64.5°	2.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.5	2.9	2.9
65°	2.5	2.5	2.9	2.9	2.5	2.9	2.9	2.5	2.5	2.5	2.9
65.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
66°	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2.5	2.5



TEST NUMBER: P776469

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-5000K

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: P776469
CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-5000K

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: P776469

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	7565.2	7565.2	7565.2	7565.2	7565.2	7565.2
0.5°	7565.6	7558.3	7565.6	7564.0	7559.9	7558.3
1°	7557.0	7549.7	7557.0	7554.2	7550.1	7548.0
1.5°	7541.9	7534.6	7541.9	7538.6	7533.3	7530.9
2°	7521.1	7514.1	7521.1	7517.0	7510.0	7508.0
2.5°	7493.7	7487.1	7493.7	7488.7	7480.6	7476.5
3°	7460.9	7454.8	7460.9	7454.8	7445.0	7440.9
3.5°	7422.1	7417.6	7422.1	7414.3	7403.3	7398.4
4°	7377.5	7373.4	7377.5	7368.1	7355.0	7348.9
4.5°	7327.2	7323.1	7327.2	7315.7	7300.2	7294.5
5°	7271.2	7267.5	7271.2	7257.7	7240.5	7234.3
5.5°	7208.2	7206.5	7208.2	7192.6	7174.6	7168.1
6°	7140.3	7140.7	7140.3	7122.3	7102.7	7095.7
6.5°	7067.5	7068.7	7067.5	7047.4	7025.8	7020.0
7°	6989.0	6993.4	6989.0	6966.5	6944.0	6937.4
7.5°	6903.1	6909.6	6903.1	6879.3	6856.0	6850.7
8°	6813.9	6822.1	6813.9	6788.1	6763.6	6757.5
8.5°	6719.8	6729.2	6719.8	6690.8	6666.3	6660.9
9°	6621.3	6631.9	6621.3	6590.2	6564.4	6557.5
9.5°	6516.6	6528.8	6516.6	6483.8	6459.3	6451.9
10°	6410.6	6420.9	6410.6	6375.0	6349.7	6341.5
10.5°	6299.4	6309.2	6299.4	6261.8	6235.6	6227.4
11°	6184.5	6193.0	6184.5	6145.2	6118.6	6105.5
11.5°	6063.4	6073.6	6063.4	6025.4	5998.8	5988.1
12°	5941.9	5951.3	5941.9	5903.5	5876.1	5863.4
12.5°	5815.5	5823.7	5815.5	5779.1	5751.3	5738.2
13°	5690.8	5697.3	5690.8	5654.4	5624.5	5609.8
13.5°	5559.1	5568.5	5559.1	5527.2	5496.1	5481.4
14°	5426.2	5436.4	5426.2	5397.1	5365.6	5349.7
14.5°	5292.4	5301.0	5292.4	5265.0	5233.1	5216.8
15°	5159.5	5165.6	5159.5	5131.7	5100.2	5083.4
15.5°	5024.1	5033.5	5024.1	4997.5	4966.0	4949.7
16°	4889.2	4900.2	4889.2	4862.6	4831.1	4816.8
16.5°	4755.0	4766.9	4755.0	4729.2	4697.7	4685.5
17°	4622.9	4631.9	4622.9	4592.6	4564.0	4550.5
17.5°	4488.7	4499.4	4488.7	4458.1	4429.4	4415.9
18°	4354.6	4365.2	4354.6	4324.7	4294.1	4283.8
18.5°	4218.4	4229.9	4218.4	4189.4	4162.0	4151.7
19°	4080.6	4093.7	4080.6	4056.0	4029.0	4019.2
19.5°	3940.3	3950.5	3940.3	3919.4	3897.3	3886.7
20°	3798.4	3798.8	3798.4	3778.3	3760.7	3751.7
20.5°	3658.5	3656.0	3658.5	3639.7	3620.9	3615.1
21°	3521.5	3521.1	3521.5	3503.1	3485.1	3475.7



TEST NUMBER: P776469

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3145.6	3158.7	3145.6	3115.7	3099.4	3087.9
23°	3029.9	3044.6	3029.9	3004.5	2984.9	2976.3
23.5°	2923.5	2937.8	2923.5	2902.7	2887.1	2865.8
24°	2831.5	2850.3	2831.5	2809.0	2787.3	2779.1
24.5°	2743.1	2765.6	2743.1	2720.7	2699.4	2689.6
25°	2658.5	2679.8	2658.5	2639.3	2619.2	2609.0
25.5°	2577.1	2595.5	2577.1	2560.7	2544.4	2539.9
26°	2501.8	2512.9	2501.8	2486.3	2475.7	2471.6
26.5°	2433.1	2440.1	2433.1	2419.6	2407.0	2400.8
27°	2371.0	2377.9	2371.0	2356.2	2339.9	2332.5
27.5°	2308.4	2318.2	2308.4	2292.8	2276.9	2269.9
28°	2245.4	2253.6	2245.4	2231.1	2218.0	2212.3
28.5°	2185.3	2194.3	2185.3	2173.4	2162.4	2157.5
29°	2130.5	2136.2	2130.5	2119.0	2108.4	2104.3
29.5°	2076.9	2082.2	2076.9	2066.3	2055.6	2051.1
30°	2024.5	2030.7	2024.5	2014.3	2004.1	2000.0
30.5°	1974.6	1980.8	1974.6	1964.4	1953.8	1950.5
31°	1927.2	1932.5	1927.2	1916.6	1907.2	1901.8
31.5°	1880.6	1887.1	1880.6	1870.8	1860.5	1857.3
32°	1836.0	1841.7	1836.0	1826.6	1817.2	1813.1
32.5°	1791.4	1794.7	1791.4	1784.9	1776.3	1772.2
33°	1744.8	1744.4	1744.8	1741.5	1736.2	1734.1
33.5°	1694.9	1694.1	1694.9	1694.9	1694.5	1694.9
34°	1649.5	1640.5	1649.5	1645.0	1648.3	1651.1
34.5°	1595.9	1587.7	1595.9	1599.2	1600.0	1600.8
35°	1541.5	1535.4	1541.5	1544.8	1544.8	1548.5
35.5°	1484.3	1480.6	1484.3	1490.0	1490.0	1494.5
36°	1424.5	1423.7	1424.5	1433.9	1432.7	1435.2
36.5°	1364.4	1362.8	1364.4	1373.4	1373.4	1373.8
37°	1303.9	1301.0	1303.9	1310.8	1310.4	1310.4
37.5°	1242.5	1240.5	1242.5	1251.1	1245.8	1247.0
38°	1178.7	1179.1	1178.7	1181.2	1179.5	1182.4
38.5°	1115.3	1116.6	1115.3	1111.7	1112.5	1114.9
39°	1051.5	1051.9	1051.5	1043.4	1045.4	1046.6
39.5°	987.3	989.8	987.3	977.1	977.1	977.1
40°	923.5	927.6	923.5	914.5	910.4	908.4
40.5°	859.3	866.7	859.3	852.4	843.4	840.9
41°	797.1	804.9	797.1	789.8	777.9	774.2
41.5°	735.8	744.8	735.8	727.6	713.7	707.6
42°	676.5	685.1	676.5	667.1	650.7	643.8
42.5°	620.4	628.2	620.4	608.2	589.8	582.0
43°	565.6	572.2	565.6	551.7	532.9	521.9
43.5°	512.1	517.8	512.1	496.9	478.5	465.4



TEST NUMBER: P776469

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	363.2	370.6	363.2	343.1	326.4	319.4
45.5°	319.0	327.2	319.0	299.0	282.2	275.3
46°	278.9	292.0	278.9	258.5	241.3	232.7
46.5°	242.1	256.9	242.1	222.9	203.3	196.7
47°	207.0	221.7	207.0	189.4	172.2	164.8
47.5°	172.6	186.5	172.6	157.5	142.7	136.6
48°	141.5	151.3	141.5	129.2	117.0	113.3
48.5°	115.3	123.9	115.3	104.3	96.1	91.6
49°	92.0	99.4	92.0	85.1	76.5	71.6
49.5°	73.6	78.9	73.6	67.1	59.7	56.0
50°	56.9	60.9	56.9	51.1	45.8	43.4
50.5°	44.6	47.4	44.6	38.9	32.7	32.3
51°	35.2	40.1	35.2	29.0	24.1	22.5
51.5°	26.6	33.1	26.6	22.5	18.0	14.7
52°	20.4	25.8	20.4	16.8	13.5	12.7
52.5°	15.5	18.8	15.5	12.3	11.9	11.5
53°	11.9	11.9	11.9	11.0	11.0	10.6
53.5°	10.6	10.2	10.6	10.6	10.2	9.8
54°	9.8	9.4	9.8	9.8	9.4	9.4
54.5°	9.0	9.0	9.0	9.0	9.0	8.6
55°	8.6	8.6	8.6	8.6	8.6	8.2
55.5°	8.2	8.2	8.2	8.2	7.8	7.8
56°	7.8	7.8	7.8	7.8	7.4	7.4
56.5°	7.4	7.0	7.4	7.4	7.0	7.0
57°	7.0	6.5	7.0	7.0	6.5	6.5
57.5°	6.5	6.5	6.5	6.5	6.1	6.1
58°	6.1	6.1	6.1	6.1	5.7	5.7
58.5°	5.7	5.7	5.7	5.7	5.3	5.3
59°	5.3	5.3	5.3	5.3	5.3	4.9
59.5°	4.9	4.9	4.9	4.9	4.9	4.5
60°	4.9	4.5	4.9	4.9	4.5	4.5
60.5°	4.5	4.5	4.5	4.5	4.1	4.1
61°	4.1	4.1	4.1	4.1	4.1	4.1
61.5°	4.1	4.1	4.1	4.1	3.7	3.7
62°	3.7	3.7	3.7	3.7	3.7	3.7
62.5°	3.7	3.7	3.7	3.7	3.3	3.3
63°	3.3	3.3	3.3	3.3	3.3	3.3
63.5°	3.3	3.3	3.3	3.3	2.9	2.9
64°	2.9	2.9	2.9	2.9	2.9	2.9
64.5°	2.9	2.9	2.9	2.9	2.9	2.5
65°	2.9	2.5	2.9	2.9	2.5	2.5
65.5°	2.5	2.5	2.5	2.5	2.5	2.5
66°	2.5	2.5	2.5	2.5	2.5	2.0



TEST NUMBER: P776469

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-5000K

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: P776469
CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-5000K

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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21.5°	3331.3	3351.3	3371.4	3390.2	3395.1	3390.2	3371.4	3351.3	3331.3	3351.3	3371.4
22°	3205.7	3218.8	3242.1	3261.3	3271.2	3261.3	3242.1	3218.8	3205.7	3218.8	3242.1



44°	414.3	425.8	444.2	459.7	465.8	459.7	444.2	425.8	414.3	425.8	444.2
44.5°	366.1	375.1	392.2	409.0	416.4	409.0	392.2	375.1	366.1	375.1	392.2



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°	3390.2	3395.1	3390.2	3371.4	3351.3	3331.3
22°	3261.3	3271.2	3261.3	3242.1	3218.8	3205.7



44°	459.7	465.8	459.7	444.2	425.8	414.3
44.5°	409.0	416.4	409.0	392.2	375.1	366.1

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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)