

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: P776313

Luminaire Tested: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776313
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K
Description: 4 INCH SQUARE MEDIUM SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

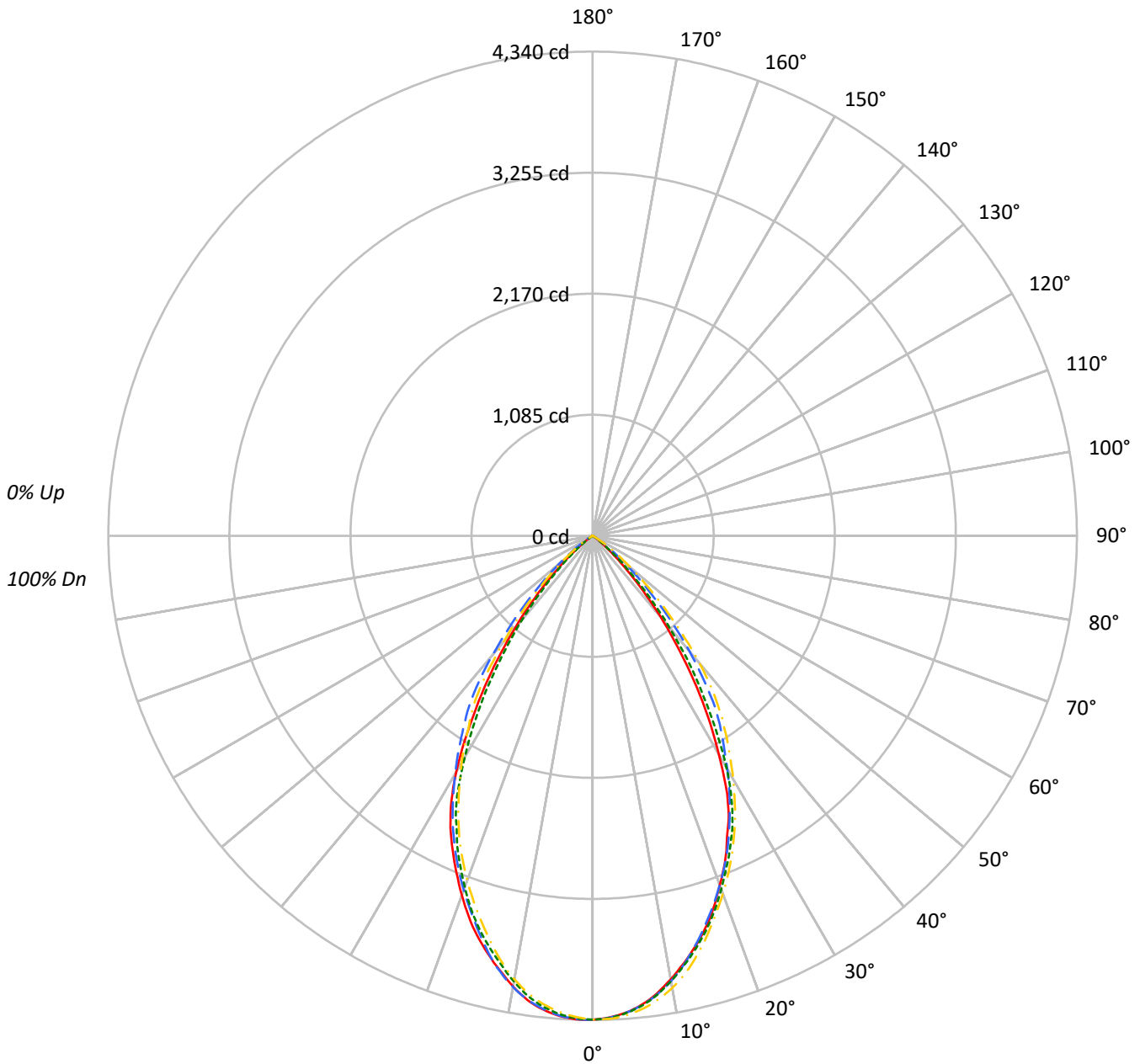
Lumens per Lamp: N/A
Luminaire Lumens: 4486.1 lumens
Efficiency: N/A
Efficacy: 116.5 lumens/watt
Spacing Criteria (0/90/45): 0.94 / 0.93 / 0.98
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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				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			100
1	113	110	108	105	111	108	106	104	104	102	101	100	99	98	97	96	95	93			93
2	107	102	98	94	105	100	96	93	97	94	91	94	91	89	91	89	87	86			86
3	101	95	89	85	99	93	88	84	90	86	83	88	85	82	86	83	80	79			79
4	96	88	82	77	94	87	81	77	84	80	76	82	78	75	80	77	74	73			73
5	90	82	75	71	89	81	75	70	79	74	70	77	73	69	75	72	69	67			67
6	85	76	70	65	84	75	69	65	74	68	64	72	68	64	71	67	64	62			62
7	81	71	65	60	79	70	64	60	69	64	60	68	63	59	67	62	59	57			57
8	77	66	60	56	75	66	60	56	65	59	55	64	59	55	63	58	55	53			53
9	73	62	56	52	71	62	56	52	61	55	52	60	55	51	59	55	51	50			50
10	69	59	53	48	68	58	52	48	57	52	48	57	52	48	56	51	48	47			47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	428679	428679	428679	428679
5°	422478	423202	426040	423916
10°	405121	406818	411876	407259
15°	381738	383754	389239	382762
20°	350552	354581	360555	352498
25°	313308	321706	326756	314541
30°	258557	273931	279078	261502
35°	190251	205756	209702	194716
40°	121739	137700	140410	126578
45°	61575	75330	77636	66146
50°	21636	28817	30677	24542
55°	4032	5204	5911	5842
60°	1522	1443	1265	1759
65°	1216	1123	1029	1310
70°	925	925	809	1040
75°	764	764	611	917
80°	455	455	455	683
85°	454	454	0	454

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 125121 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	401.5	8.9
10°-20°	1050.2	23.4
20°-30°	1333.6	29.7
30°-40°	1102.8	24.6
40°-50°	504.7	11.2
50°-60°	84.8	1.9
60°-70°	5.9	0.1
70°-80°	2.3	0.1
80°-90°	0.4	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°	2785.2	62.1
0°-40°	3888.1	86.7
0°-60°	4477.5	99.8
0°-90°	4486.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4486.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	4337	4337	4337	4337	4337	
5°	4258	4265	4294	4272	4258	399
15°	3730	3750	3804	3740	3730	1042
25°	2873	2950	2996	2884	2873	1305
35°	1577	1705	1738	1614	1577	979
45°	440	539	555	473	440	358
55°	23	30	34	34	23	38
65°	5	5	4	6	5	5
75°	2	2	2	2	2	2
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°	4337.0	4337.0	4337.0	4337.0	4337.0	4337.0	4337.0	4337.0	4337.0	4337.0	4337.0
0.5°	4336.2	4336.6	4336.6	4334.6	4336.2	4336.2	4336.2	4337.8	4340.3	4340.7	4339.8
1°	4331.8	4333.0	4333.4	4332.2	4334.2	4335.0	4336.2	4337.8	4340.3	4340.3	4339.0
1.5°	4327.4	4328.2	4329.0	4328.6	4330.2	4331.8	4334.6	4336.2	4339.0	4339.8	4337.0
2°	4320.5	4321.7	4322.9	4322.5	4324.9	4328.6	4331.8	4333.4	4336.6	4337.8	4334.6
2.5°	4312.8	4314.1	4315.7	4315.7	4318.1	4322.9	4328.6	4329.0	4332.2	4333.4	4331.4
3°	4305.2	4306.0	4306.8	4307.6	4310.4	4316.1	4322.9	4323.7	4327.4	4327.8	4324.9
3.5°	4295.5	4295.9	4297.1	4298.3	4301.2	4308.8	4316.9	4315.7	4320.9	4321.3	4317.7
4°	4285.0	4285.0	4285.8	4287.9	4290.7	4299.5	4308.4	4308.0	4313.2	4313.2	4309.2
4.5°	4272.1	4272.9	4274.6	4276.6	4279.4	4289.9	4299.1	4298.3	4304.8	4304.4	4299.5
5°	4258.0	4258.4	4261.3	4263.7	4265.3	4278.2	4289.1	4287.9	4293.9	4294.7	4288.3
5.5°	4242.3	4243.1	4246.7	4249.6	4251.6	4264.9	4277.8	4276.2	4282.2	4283.0	4276.6
6°	4225.0	4225.8	4231.0	4233.4	4235.5	4251.2	4264.1	4262.5	4269.3	4269.7	4262.9
6.5°	4206.8	4207.3	4213.3	4216.9	4218.1	4235.1	4250.4	4248.0	4255.6	4255.6	4249.6
7°	4186.3	4187.1	4194.4	4198.8	4199.6	4217.3	4235.5	4231.8	4239.5	4239.9	4233.4
7.5°	4165.3	4165.3	4174.6	4179.0	4178.2	4198.4	4218.5	4214.9	4221.0	4223.0	4216.5
8°	4142.4	4142.8	4151.6	4158.1	4156.1	4177.4	4200.4	4195.2	4200.8	4202.8	4197.6
8.5°	4117.8	4119.4	4129.5	4135.1	4131.5	4155.3	4181.1	4174.6	4179.0	4183.1	4177.0
9°	4090.0	4093.2	4104.5	4110.1	4106.5	4131.9	4160.1	4151.6	4154.9	4160.1	4156.5
9.5°	4062.6	4066.2	4079.1	4084.7	4080.3	4106.9	4138.3	4127.0	4130.3	4135.9	4133.5
10°	4036.4	4038.0	4051.7	4058.1	4053.3	4081.9	4115.0	4101.7	4103.7	4110.1	4107.7
10.5°	4007.3	4009.4	4023.9	4029.5	4025.1	4056.1	4089.6	4073.8	4075.9	4083.1	4081.5
11°	3978.7	3980.7	3994.4	4000.9	3996.9	4027.1	4061.8	4045.6	4046.0	4055.7	4054.5
11.5°	3948.9	3951.3	3962.6	3970.3	3966.6	3998.9	4035.2	4015.0	4015.0	4025.9	4025.5
12°	3920.3	3921.1	3930.4	3938.4	3936.8	3969.9	4005.7	3984.4	3985.2	3994.0	3993.2
12.5°	3890.5	3890.5	3894.9	3907.4	3907.4	3940.0	3973.9	3952.1	3957.0	3963.4	3963.0
13°	3859.0	3859.8	3861.4	3874.7	3878.0	3910.2	3941.7	3919.5	3927.9	3932.8	3927.9
13.5°	3827.6	3827.6	3826.8	3841.3	3846.5	3880.0	3910.2	3887.6	3897.3	3899.7	3892.1
14°	3795.8	3794.9	3790.5	3808.7	3814.7	3849.0	3873.1	3855.4	3866.3	3867.5	3854.6
14.5°	3763.1	3761.9	3754.2	3774.8	3782.9	3817.5	3837.7	3822.8	3835.3	3835.7	3817.5
15°	3730.5	3728.9	3718.8	3741.7	3750.2	3785.3	3801.8	3790.1	3803.8	3803.0	3776.8
15.5°	3697.4	3694.6	3680.1	3707.1	3717.2	3752.2	3763.9	3755.5	3770.4	3769.2	3736.9
16°	3661.5	3657.9	3643.0	3670.8	3682.9	3718.4	3724.4	3721.6	3738.1	3736.1	3696.2
16.5°	3626.1	3624.5	3604.7	3634.5	3647.8	3685.7	3686.1	3686.5	3703.5	3701.0	3657.5
17°	3589.0	3588.6	3566.8	3598.3	3611.6	3649.1	3646.6	3651.1	3667.6	3665.6	3616.4
17.5°	3549.9	3551.1	3528.1	3561.2	3573.3	3613.6	3607.5	3614.0	3629.7	3630.1	3576.9
18°	3507.6	3509.6	3489.5	3523.7	3533.8	3576.5	3569.3	3576.1	3590.6	3593.4	3536.2
18.5°	3463.7	3471.3	3450.8	3483.8	3494.3	3539.0	3531.0	3536.6	3550.7	3553.9	3497.1
19°	3418.9	3427.8	3411.3	3443.1	3454.0	3497.9	3491.9	3496.7	3511.2	3514.0	3458.0
19.5°	3376.6	3383.0	3371.0	3400.8	3412.9	3459.2	3453.2	3456.8	3470.1	3472.5	3418.5
20°	3332.7	3338.7	3331.9	3359.7	3371.0	3416.9	3413.7	3413.7	3427.8	3431.0	3378.2
20.5°	3289.9	3294.8	3292.4	3316.5	3328.6	3375.0	3373.8	3371.0	3385.1	3388.3	3337.5
21°	3248.0	3250.5	3251.7	3273.4	3285.5	3331.9	3333.5	3327.8	3342.3	3345.2	3295.6



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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°	3117.0	3119.1	3126.3	3140.8	3163.4	3200.1	3211.4	3194.0	3214.6	3212.2	3171.9
23°	3066.3	3075.5	3082.4	3096.1	3121.9	3155.7	3169.8	3148.5	3173.1	3167.4	3128.7
23.5°	3012.7	3029.2	3036.8	3048.1	3078.8	3113.8	3127.9	3102.9	3129.9	3122.3	3087.6
24°	2961.5	2979.2	2991.3	3005.4	3035.6	3067.1	3084.8	3057.4	3084.8	3076.7	3042.1
24.5°	2917.1	2926.8	2944.1	2962.7	2992.9	3020.7	3039.7	3012.3	3040.5	3031.2	2996.1
25°	2872.8	2872.0	2896.6	2919.2	2949.8	2974.4	2994.5	2966.7	2996.1	2985.3	2950.6
25.5°	2828.9	2822.0	2848.6	2869.6	2906.7	2927.6	2949.4	2921.2	2952.2	2939.7	2905.1
26°	2782.5	2776.5	2801.1	2820.0	2857.9	2881.3	2904.2	2876.0	2907.9	2894.2	2861.5
26.5°	2724.9	2732.6	2753.5	2769.6	2806.7	2839.0	2860.3	2823.6	2855.9	2841.8	2812.8
27°	2669.3	2687.4	2706.8	2725.3	2757.1	2795.8	2811.6	2776.9	2805.9	2797.4	2763.2
27.5°	2612.0	2640.7	2659.2	2683.0	2701.9	2749.5	2763.2	2733.4	2751.9	2749.5	2713.6
28°	2543.1	2581.4	2612.9	2640.3	2646.7	2695.5	2712.4	2686.2	2695.9	2695.9	2662.0
28.5°	2472.2	2525.0	2564.1	2588.7	2587.5	2643.9	2663.6	2634.6	2635.4	2645.9	2612.0
29°	2402.9	2468.6	2515.7	2538.3	2527.8	2590.3	2614.5	2585.9	2574.6	2591.1	2561.7
29.5°	2334.4	2403.3	2464.5	2488.3	2465.3	2533.9	2565.7	2532.2	2509.7	2533.9	2511.7
30°	2265.4	2334.8	2413.8	2435.5	2400.1	2475.4	2518.5	2476.6	2445.2	2475.8	2461.3
30.5°	2196.5	2265.8	2361.0	2379.5	2330.7	2414.2	2469.8	2420.2	2376.7	2415.4	2412.5
31°	2128.0	2198.1	2311.0	2321.9	2261.8	2353.7	2419.0	2361.8	2304.5	2354.5	2364.6
31.5°	2060.7	2130.8	2261.8	2263.4	2190.5	2290.4	2367.8	2302.1	2232.8	2290.0	2316.6
32°	1994.2	2065.5	2217.9	2203.4	2118.7	2225.9	2316.2	2239.2	2161.5	2225.5	2266.2
32.5°	1926.5	1999.0	2172.7	2140.5	2045.8	2159.4	2270.3	2174.8	2087.3	2158.6	2213.0
33°	1856.8	1933.7	2128.4	2077.2	1976.1	2089.7	2225.1	2109.5	2016.4	2091.3	2163.5
33.5°	1787.8	1870.1	2082.5	2011.5	1904.7	2020.8	2180.0	2042.6	1941.8	2020.8	2116.3
34°	1718.9	1805.2	2034.5	1945.0	1837.0	1951.9	2131.6	1973.6	1873.3	1949.1	2068.0
34.5°	1648.0	1739.9	1984.1	1877.7	1769.3	1883.4	2079.6	1904.7	1804.0	1879.7	2019.6
35°	1576.7	1674.2	1939.8	1810.8	1705.2	1816.1	2035.7	1838.6	1737.9	1814.4	1976.5
35.5°	1506.1	1607.3	1889.0	1743.5	1639.5	1750.4	1992.6	1771.3	1668.1	1745.1	1932.9
36°	1434.4	1541.2	1828.6	1677.8	1575.5	1685.9	1939.4	1705.6	1602.9	1679.4	1880.1
36.5°	1371.1	1473.9	1769.3	1614.5	1512.2	1622.6	1887.4	1641.1	1537.2	1612.9	1823.3
37°	1307.8	1411.4	1711.7	1551.7	1446.9	1560.1	1837.8	1577.1	1473.5	1552.9	1771.7
37.5°	1244.6	1348.9	1650.0	1489.6	1380.8	1498.9	1782.2	1515.4	1407.0	1489.2	1712.5
38°	1180.9	1286.5	1588.8	1424.7	1316.7	1438.4	1726.6	1454.5	1339.7	1429.2	1650.4
38.5°	1120.4	1223.6	1527.9	1367.5	1252.6	1377.6	1671.4	1394.9	1274.8	1368.7	1587.1
39°	1061.2	1161.5	1467.8	1309.9	1189.8	1320.3	1610.9	1335.2	1213.1	1309.0	1523.1
39.5°	1001.1	1103.5	1407.4	1252.6	1127.7	1259.1	1550.5	1274.4	1149.4	1248.6	1457.4
40°	943.5	1047.1	1347.3	1195.4	1067.2	1199.0	1490.4	1215.5	1088.2	1190.2	1393.7
40.5°	884.7	989.8	1287.3	1138.2	1008.8	1139.4	1428.3	1157.1	1027.7	1131.3	1330.0
41°	827.8	936.2	1227.2	1081.7	952.0	1082.9	1365.5	1099.1	971.7	1074.1	1267.9
41.5°	772.2	881.4	1167.2	1026.5	896.7	1025.7	1301.4	1041.8	914.5	1016.0	1206.7
42°	718.2	829.0	1107.1	970.9	841.1	971.3	1238.1	987.0	860.5	962.0	1146.6
42.5°	666.2	777.4	1048.3	919.7	789.1	916.5	1177.3	933.8	806.5	909.6	1087.8
43°	617.4	726.3	989.0	868.9	735.9	867.3	1116.8	882.2	752.5	857.2	1031.8
43.5°	570.3	675.5	930.2	819.8	684.3	814.9	1058.8	832.3	701.3	806.9	976.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	440.5	539.3	768.6	680.3	538.9	671.9	895.1	689.6	555.4	665.8	817.8
45.5°	400.2	496.5	719.8	636.4	494.5	625.5	843.5	644.9	510.6	621.5	768.2
46°	362.7	457.8	671.5	592.5	452.2	581.2	794.4	601.7	467.9	577.9	719.0
46.5°	326.9	420.4	626.7	550.5	412.3	538.5	746.0	558.2	427.2	535.6	671.0
47°	292.6	382.9	582.8	509.0	376.8	497.3	700.5	517.1	392.6	495.7	625.5
47.5°	261.2	347.8	540.9	470.3	341.4	456.6	654.1	478.4	357.9	457.0	581.6
48°	232.1	314.4	499.8	433.3	306.3	419.6	611.0	439.7	323.2	420.0	539.7
48.5°	205.5	282.9	461.1	397.4	271.2	386.9	567.9	403.8	289.0	388.1	499.8
49°	181.8	252.7	423.6	364.3	241.0	353.9	527.6	372.0	254.3	356.3	461.9
49.5°	160.0	225.7	388.1	333.3	213.6	321.2	486.9	340.2	226.1	324.8	424.8
50°	140.7	200.7	353.1	303.1	187.4	288.6	449.0	308.3	199.5	293.0	393.4
50.5°	126.1	177.3	322.0	272.4	163.6	255.9	412.7	276.5	175.3	261.2	362.3
51°	111.6	156.0	291.4	245.0	142.3	228.9	380.9	247.9	153.6	235.4	330.9
51.5°	97.1	137.4	263.6	218.8	122.5	203.9	348.6	221.7	133.0	210.4	299.5
52°	82.6	123.3	237.0	194.7	104.8	181.0	316.4	196.7	113.7	187.0	268.4
52.5°	71.3	109.2	213.2	171.7	88.3	158.4	284.1	174.1	96.3	164.8	242.2
53°	60.9	94.7	189.0	149.9	73.8	137.8	256.7	151.9	81.0	144.3	217.6
53.5°	50.8	81.0	169.3	133.0	60.5	119.3	231.3	132.2	66.9	124.9	195.1
54°	41.5	70.1	149.1	116.1	50.4	102.0	206.4	113.3	56.0	107.2	173.3
54.5°	31.8	60.1	133.8	99.5	40.3	86.2	183.0	96.7	45.1	91.9	153.6
55°	23.4	50.8	119.3	82.6	30.2	72.5	162.0	81.0	34.3	77.0	135.4
55.5°	16.9	41.5	104.4	66.1	20.6	58.8	141.9	66.9	23.4	63.7	118.9
56°	15.3	32.2	89.5	53.6	10.5	49.2	123.3	56.0	12.5	53.2	104.0
56.5°	13.7	24.2	74.6	42.3	9.7	39.1	106.0	45.5	8.9	42.7	89.9
57°	12.1	16.9	62.9	32.2	9.3	29.4	90.7	35.1	8.5	32.6	77.4
57.5°	10.5	14.9	53.6	22.2	8.9	19.7	76.6	24.6	8.1	22.2	66.5
58°	8.9	13.3	45.1	14.5	8.5	9.7	64.1	14.1	7.7	11.7	56.8
58.5°	8.5	11.7	37.9	12.9	8.1	8.5	53.6	8.5	7.3	8.5	48.0
59°	8.1	10.1	31.4	11.3	7.7	8.1	46.8	7.7	6.9	7.7	42.3
59.5°	8.1	8.1	26.2	9.7	7.3	7.7	39.9	7.3	6.4	7.7	36.7
60°	7.7	7.7	22.2	7.7	7.3	7.3	33.5	6.9	6.4	7.3	30.6
60.5°	7.3	7.7	18.5	7.7	6.9	7.3	26.6	6.9	6.0	6.9	25.0
61°	6.9	7.3	15.3	7.3	6.4	6.9	19.7	6.4	6.0	6.4	19.3
61.5°	6.9	6.9	13.3	6.9	6.4	6.4	16.1	6.0	5.6	6.4	15.7
62°	6.4	6.9	11.3	6.4	6.0	6.4	13.3	6.0	5.2	6.0	13.3
62.5°	6.0	6.4	9.3	6.4	6.0	6.0	10.9	5.6	5.2	6.0	10.9
63°	6.0	6.0	7.3	6.0	5.6	5.6	8.9	5.6	4.8	5.6	8.9
63.5°	5.6	6.0	6.4	6.0	5.2	5.6	7.3	5.2	4.8	5.2	7.7
64°	5.6	5.6	6.0	5.6	5.2	5.2	6.0	5.2	4.8	5.2	6.4
64.5°	5.2	5.6	5.6	5.6	4.8	5.2	5.6	4.8	4.4	4.8	5.6
65°	5.2	5.2	5.6	5.2	4.8	4.8	5.2	4.8	4.4	4.8	5.6
65.5°	4.8	5.2	5.2	5.2	4.8	4.8	4.8	4.4	4.0	4.8	5.2
66°	4.8	4.8	4.8	4.8	4.4	4.4	4.8	4.4	4.0	4.4	4.8



TEST NUMBER: P776313

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.0	4.4	4.4	4.4	4.0	4.0	4.4	4.0	3.6	4.0	4.4
68°	4.0	4.0	4.4	4.0	3.6	4.0	4.0	3.6	3.2	4.0	4.0
68.5°	3.6	4.0	4.0	4.0	3.6	3.6	4.0	3.6	3.2	3.6	4.0
69°	3.6	3.6	4.0	3.6	3.6	3.6	3.6	3.2	3.2	3.6	4.0
69.5°	3.6	3.6	3.6	3.6	3.2	3.6	3.6	3.2	2.8	3.2	3.6
70°	3.2	3.6	3.6	3.6	3.2	3.2	3.6	3.2	2.8	3.2	3.6
70.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.8	2.8	3.2	3.2
71°	2.8	3.2	3.2	3.2	2.8	3.2	3.2	2.8	2.8	2.8	3.2
71.5°	2.8	3.2	3.2	3.2	2.8	2.8	2.8	2.8	2.4	2.8	3.2
72°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.4	2.4	2.8	2.8
72.5°	2.4	2.8	2.8	2.8	2.4	2.8	2.8	2.4	2.4	2.4	2.8
73°	2.4	2.4	2.8	2.8	2.4	2.4	2.4	2.4	2.0	2.4	2.8
73.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.0	2.4	2.4
74°	2.0	2.4	2.4	2.4	2.0	2.4	2.4	2.0	2.0	2.4	2.4
74.5°	2.0	2.0	2.4	2.4	2.0	2.0	2.4	2.0	2.0	2.0	2.4
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	2.0	2.0
75.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.6	2.0	2.0
76°	1.6	2.0	2.0	2.0	1.6	2.0	2.0	1.6	1.6	1.6	2.0
76.5°	1.6	1.6	2.0	2.0	1.6	1.6	2.0	1.6	1.6	1.6	2.0
77°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.6	1.6
78°	1.2	1.2	1.6	1.6	1.2	1.6	1.6	1.2	1.2	1.2	1.6
78.5°	1.2	1.2	1.6	1.2	1.2	1.2	1.6	1.2	1.2	1.2	1.6
79°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	1.2	1.2
79.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	1.2	1.2
80°	0.8	0.8	1.2	1.2	0.8	1.2	1.2	0.8	0.8	0.8	1.2
80.5°	0.8	0.8	1.2	1.2	0.8	1.2	1.2	0.8	0.8	0.8	1.2
81°	0.8	0.8	1.2	0.8	0.8	0.8	1.2	0.8	0.8	0.8	0.8
81.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.8	0.8	0.8
82°	0.8	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
82.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
83°	0.4	0.4	0.8	0.8	0.4	0.8	0.8	0.4	0.4	0.4	0.8
83.5°	0.4	0.4	0.8	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4	0.4
85°	0.4	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
85.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
86°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
86.5°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.4
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: P776313
CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K

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: P776313

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4337.0	4337.0	4337.0	4337.0	4337.0	4337.0
0.5°	4336.2	4336.2	4333.8	4331.4	4334.2	4336.2
1°	4334.6	4334.2	4330.6	4327.4	4331.0	4331.8
1.5°	4331.8	4331.4	4327.0	4322.5	4325.7	4327.4
2°	4328.2	4327.0	4321.7	4315.7	4320.1	4320.5
2.5°	4322.5	4320.9	4314.5	4308.4	4312.8	4312.8
3°	4316.1	4314.1	4306.0	4298.7	4305.2	4305.2
3.5°	4308.8	4305.6	4296.7	4289.5	4296.3	4295.5
4°	4299.9	4296.7	4286.2	4277.8	4285.8	4285.0
4.5°	4289.5	4285.0	4274.2	4266.1	4273.8	4272.1
5°	4278.2	4272.5	4261.3	4252.0	4260.9	4258.0
5.5°	4264.9	4258.8	4246.3	4237.1	4245.5	4242.3
6°	4250.4	4243.5	4230.2	4221.8	4229.4	4225.0
6.5°	4233.9	4226.2	4212.9	4203.2	4211.3	4206.8
7°	4216.1	4207.3	4193.1	4183.5	4191.9	4186.3
7.5°	4196.0	4187.1	4173.0	4162.9	4171.8	4165.3
8°	4175.4	4164.5	4149.6	4140.3	4149.6	4142.4
8.5°	4152.4	4140.3	4125.4	4116.6	4127.0	4117.8
9°	4127.9	4113.3	4099.6	4091.6	4101.3	4090.0
9.5°	4101.7	4085.9	4072.2	4065.4	4074.7	4062.6
10°	4074.2	4057.7	4042.8	4035.2	4046.8	4036.4
10.5°	4046.0	4027.5	4012.2	4008.6	4019.0	4007.3
11°	4016.2	3997.7	3982.0	3977.1	3990.4	3978.7
11.5°	3986.4	3965.4	3950.1	3943.7	3960.6	3948.9
12°	3954.1	3933.6	3917.1	3908.2	3929.6	3920.3
12.5°	3922.7	3902.6	3883.6	3873.9	3898.5	3890.5
13°	3890.5	3870.7	3849.8	3837.3	3867.5	3859.0
13.5°	3857.8	3839.3	3816.7	3800.2	3835.3	3827.6
14°	3824.8	3807.0	3782.1	3761.1	3801.8	3795.8
14.5°	3791.3	3775.2	3749.0	3723.2	3768.8	3763.1
15°	3758.3	3740.5	3713.9	3683.7	3734.5	3730.5
15.5°	3724.4	3706.3	3678.1	3644.6	3699.0	3697.4
16°	3689.4	3672.0	3641.4	3605.1	3664.0	3661.5
16.5°	3653.5	3636.6	3605.5	3566.0	3628.1	3626.1
17°	3616.0	3599.1	3568.0	3526.1	3590.6	3589.0
17.5°	3579.7	3562.0	3529.8	3487.0	3553.1	3549.9
18°	3541.0	3521.3	3489.9	3447.5	3514.4	3507.6
18.5°	3502.3	3479.4	3450.0	3407.2	3474.1	3463.7
19°	3461.6	3438.3	3408.0	3367.3	3431.4	3418.9
19.5°	3419.3	3395.5	3365.3	3327.0	3387.1	3376.6
20°	3377.0	3351.2	3322.6	3284.3	3341.9	3332.7
20.5°	3332.7	3308.1	3277.5	3243.2	3296.8	3289.9
21°	3288.7	3263.3	3233.1	3201.3	3250.0	3248.0



TEST NUMBER: P776313

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3153.7	3129.9	3094.1	3074.3	3112.2	3117.0
23°	3106.2	3085.6	3046.9	3030.8	3066.3	3066.3
23.5°	3059.8	3040.1	2999.8	2986.5	3021.5	3012.7
24°	3013.1	2988.9	2953.4	2940.1	2974.0	2961.5
24.5°	2966.3	2934.9	2905.9	2891.4	2923.6	2917.1
25°	2920.0	2884.1	2856.3	2843.0	2870.4	2872.8
25.5°	2873.2	2840.2	2804.7	2794.6	2816.8	2828.9
26°	2819.2	2797.0	2750.3	2745.5	2762.4	2782.5
26.5°	2764.8	2743.4	2699.1	2694.3	2715.2	2724.9
27°	2714.0	2685.4	2653.6	2645.1	2669.3	2669.3
27.5°	2666.9	2632.6	2607.6	2593.5	2624.5	2612.0
28°	2621.3	2565.7	2553.6	2543.1	2577.4	2543.1
28.5°	2569.3	2497.6	2494.8	2493.6	2524.2	2472.2
29°	2508.9	2427.9	2442.0	2445.6	2466.6	2402.9
29.5°	2455.7	2359.3	2377.9	2397.2	2413.4	2334.4
30°	2390.4	2291.2	2310.6	2348.9	2350.9	2265.4
30.5°	2326.3	2224.3	2241.7	2298.9	2286.4	2196.5
31°	2257.0	2157.0	2174.8	2247.7	2219.9	2128.0
31.5°	2190.5	2089.7	2108.7	2191.7	2152.6	2060.7
32°	2125.6	2024.0	2043.8	2136.9	2086.5	1994.2
32.5°	2061.9	1958.7	1977.7	2084.9	2021.2	1926.5
33°	1995.0	1892.2	1916.0	2037.7	1958.7	1856.8
33.5°	1933.3	1823.7	1853.1	1997.4	1895.1	1787.8
34°	1869.3	1754.0	1791.1	1958.3	1832.2	1718.9
34.5°	1808.8	1683.9	1726.2	1906.7	1768.1	1648.0
35°	1743.5	1613.7	1664.1	1859.2	1706.4	1576.7
35.5°	1681.4	1544.8	1598.8	1810.4	1643.2	1506.1
36°	1616.2	1476.3	1534.7	1747.5	1581.1	1434.4
36.5°	1554.5	1412.2	1469.5	1688.3	1517.0	1371.1
37°	1487.6	1348.1	1407.8	1625.8	1455.3	1307.8
37.5°	1422.7	1284.5	1346.1	1558.5	1394.1	1244.6
38°	1358.2	1220.4	1284.9	1490.8	1332.4	1180.9
38.5°	1295.7	1156.7	1223.6	1422.3	1271.2	1120.4
39°	1234.5	1098.3	1162.3	1361.8	1209.9	1061.2
39.5°	1175.6	1040.2	1104.7	1301.8	1148.6	1001.1
40°	1117.2	981.0	1050.7	1241.3	1093.0	943.5
40.5°	1061.6	921.7	995.5	1181.3	1037.4	884.7
41°	1007.6	866.5	942.7	1124.5	984.2	827.8
41.5°	954.4	807.3	889.9	1069.2	930.2	772.2
42°	902.0	755.7	837.9	1015.2	879.0	718.2
42.5°	849.6	703.3	786.7	963.2	828.2	666.2
43°	798.4	654.5	735.9	910.9	779.9	617.4
43.5°	748.8	604.1	687.2	860.1	730.7	570.3



TEST NUMBER: P776313

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	607.8	473.2	552.2	712.6	591.2	440.5
45.5°	564.2	431.2	511.0	667.0	548.9	400.2
46°	522.7	393.4	472.0	621.9	507.4	362.7
46.5°	482.8	356.3	434.1	580.4	468.7	326.9
47°	444.5	320.8	397.8	539.7	430.8	292.6
47.5°	408.3	287.0	361.9	501.4	393.8	261.2
48°	375.2	257.9	328.5	463.9	359.9	232.1
48.5°	342.2	229.3	297.0	430.0	326.5	205.5
49°	309.1	203.9	267.2	397.0	295.0	181.8
49.5°	276.5	181.0	239.8	366.4	264.4	160.0
50°	247.9	159.6	213.6	335.3	238.6	140.7
50.5°	221.3	140.3	189.8	307.1	213.2	126.1
51°	197.9	126.1	168.5	279.3	189.0	111.6
51.5°	175.3	112.0	149.5	254.3	166.5	97.1
52°	154.4	98.3	135.4	230.5	147.5	82.6
52.5°	135.8	84.2	121.3	207.6	133.0	71.3
53°	119.3	72.9	107.2	185.8	118.5	60.9
53.5°	104.8	62.5	93.1	166.5	104.0	50.8
54°	91.5	52.4	79.0	148.3	89.5	41.5
54.5°	79.8	43.1	68.9	133.8	75.0	31.8
55°	69.3	33.9	58.8	119.7	64.5	23.4
55.5°	59.2	25.0	49.6	105.2	55.2	16.9
56°	51.6	18.5	39.9	91.1	45.9	15.3
56.5°	43.9	13.3	31.4	76.6	37.5	13.7
57°	36.3	12.5	23.0	65.7	29.4	12.1
57.5°	28.6	11.7	16.5	56.4	21.8	10.5
58°	21.0	11.3	14.9	48.0	15.3	8.9
58.5°	13.3	10.5	13.3	40.3	13.7	8.5
59°	10.5	10.1	12.1	33.9	12.1	8.1
59.5°	9.7	9.7	10.5	28.2	10.1	8.1
60°	9.3	8.9	9.3	23.4	8.5	7.7
60.5°	8.9	8.5	8.9	19.3	8.1	7.3
61°	8.5	8.1	8.5	16.1	7.7	6.9
61.5°	8.1	7.7	8.1	14.1	7.3	6.9
62°	7.7	7.7	7.7	12.1	6.9	6.4
62.5°	7.3	7.3	7.3	10.1	6.9	6.0
63°	6.9	6.9	6.9	8.1	6.4	6.0
63.5°	6.4	6.4	6.4	6.9	6.0	5.6
64°	6.4	6.0	6.4	6.0	6.0	5.6
64.5°	6.0	6.0	6.0	6.0	5.6	5.2
65°	5.6	5.6	5.6	5.6	5.6	5.2
65.5°	5.6	5.6	5.6	5.6	5.2	4.8
66°	5.2	5.2	5.2	5.2	5.2	4.8



TEST NUMBER: P776313

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	4.8	4.4	4.8	4.4	4.4	4.0
68°	4.4	4.4	4.4	4.4	4.4	4.0
68.5°	4.4	4.0	4.4	4.0	4.0	3.6
69°	4.0	4.0	4.0	4.0	4.0	3.6
69.5°	4.0	4.0	4.0	4.0	3.6	3.6
70°	3.6	3.6	3.6	3.6	3.6	3.2
70.5°	3.6	3.6	3.6	3.6	3.6	3.2
71°	3.2	3.2	3.2	3.2	3.2	2.8
71.5°	3.2	3.2	3.2	3.2	3.2	2.8
72°	3.2	3.2	3.2	3.2	2.8	2.8
72.5°	2.8	2.8	2.8	2.8	2.8	2.4
73°	2.8	2.8	2.8	2.8	2.8	2.4
73.5°	2.8	2.8	2.8	2.8	2.4	2.4
74°	2.4	2.4	2.4	2.4	2.4	2.0
74.5°	2.4	2.4	2.4	2.4	2.4	2.0
75°	2.4	2.4	2.4	2.4	2.0	2.0
75.5°	2.0	2.0	2.0	2.0	2.0	2.0
76°	2.0	2.0	2.0	2.0	2.0	1.6
76.5°	2.0	2.0	2.0	2.0	2.0	1.6
77°	2.0	1.6	2.0	2.0	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6
78°	1.6	1.6	1.6	1.6	1.6	1.2
78.5°	1.6	1.6	1.6	1.6	1.2	1.2
79°	1.2	1.2	1.6	1.6	1.2	1.2
79.5°	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2	0.8
80.5°	1.2	1.2	1.2	1.2	0.8	0.8
81°	1.2	1.2	1.2	1.2	0.8	0.8
81.5°	0.8	0.8	0.8	0.8	0.8	0.8
82°	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.4	0.4
83°	0.8	0.8	0.8	0.8	0.4	0.4
83.5°	0.8	0.8	0.8	0.8	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.0	0.4
85.5°	0.4	0.4	0.4	0.4	0.0	0.0
86°	0.4	0.4	0.4	0.4	0.0	0.0
86.5°	0.4	0.4	0.4	0.4	0.0	0.0
87°	0.0	0.4	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: P776313

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-4000K

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
1121 Highway 74 South
Peachtree City, GA 30269

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°	3206.9	3206.5	3209.3	3229.1	3243.2	3289.1	3293.2	3283.9	3299.6	3301.2	3255.3
22°	3163.8	3161.0	3168.2	3185.6	3203.7	3244.4	3251.7	3241.2	3257.3	3256.5	3213.8



44°	524.7	628.3	873.8	771.0	634.4	766.6	1001.1	782.3	651.7	757.7	922.9
44.5°	480.8	582.8	819.4	725.9	585.2	718.2	946.7	735.5	603.3	711.4	869.3



66.5°	4.4	4.8	4.8	4.8	4.4	4.4	4.4	4.0	4.0	4.4	4.8
67°	4.4	4.4	4.4	4.4	4.0	4.4	4.4	4.0	3.6	4.0	4.4



89°	0.0	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	0.0

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21.5°	3244.4	3217.4	3187.2	3158.6	3204.5	3206.9
22°	3198.9	3173.9	3141.2	3117.0	3158.6	3163.8



44°	700.5	559.4	640.4	809.3	681.5	524.7
44.5°	652.5	515.9	596.1	760.9	634.8	480.8

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66.5°	5.2	4.8	5.2	4.8	4.8	4.4
67°	4.8	4.8	4.8	4.8	4.8	4.4

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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)