

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: P776286

Luminaire Tested: HCDJBL3040CSD-HCD4TRC-4000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776286
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: HCDJBS3040CSD-HCD4TRC-4000lm-3000K
Description: 4 INCH ROUND MEDIUM SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

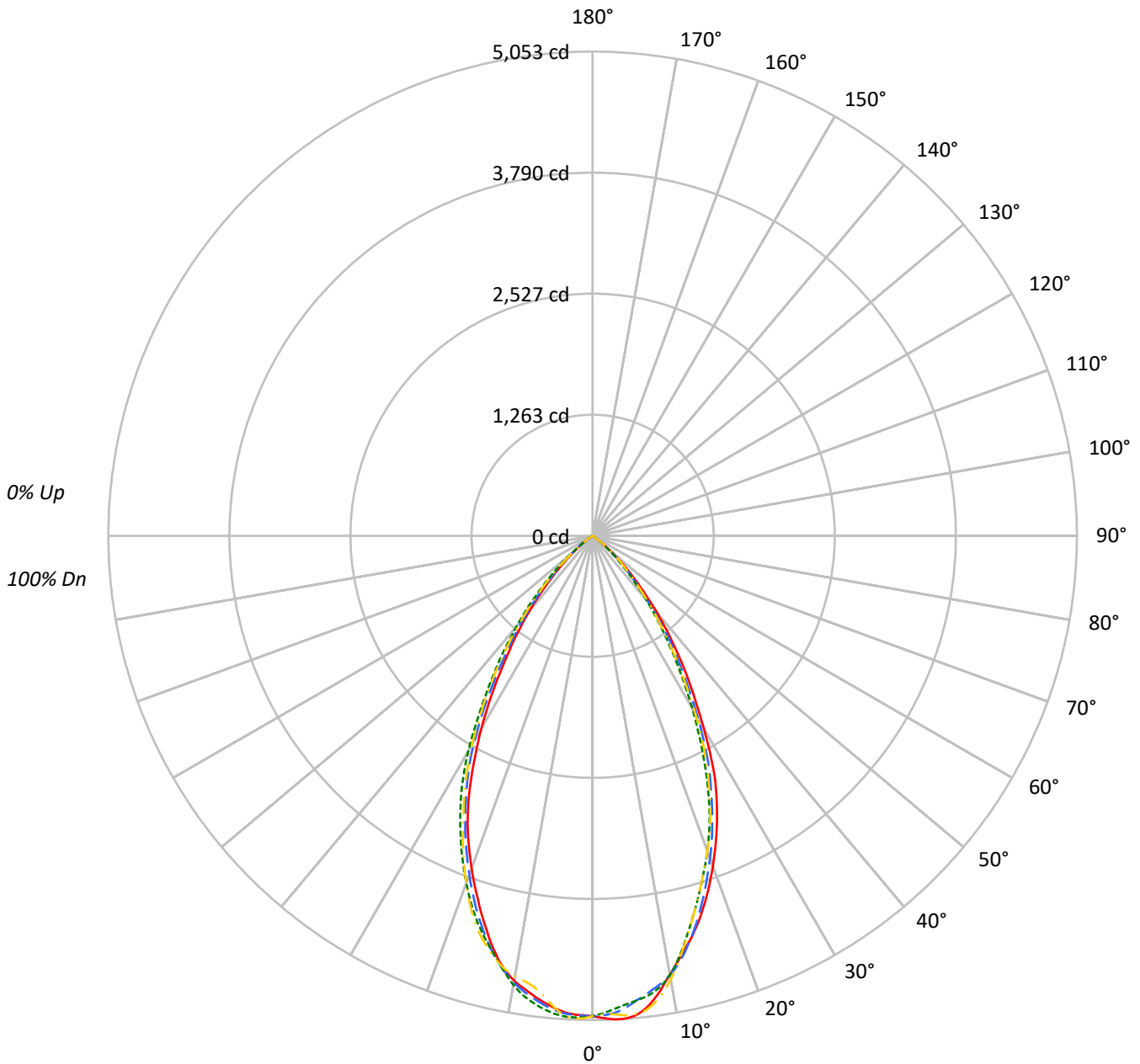
Lumens per Lamp: N/A
Luminaire Lumens: 4561.2 lumens
Efficiency: N/A
Efficacy: 118.5 lumens/watt
Spacing Criteria (0/90/45): 0.87 / 0.87 / 0.88
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93								
2	108	103	98	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86								
3	102	95	90	86	100	94	89	86	91	87	84	89	86	83	87	84	82	80								
4	97	89	83	79	95	88	82	78	85	81	77	83	80	76	82	78	76	74								
5	91	83	77	72	90	82	76	72	80	75	71	78	74	71	77	73	70	69								
6	87	78	71	67	85	77	71	67	75	70	66	74	69	66	72	68	65	64								
7	82	73	66	62	81	72	66	62	71	65	62	69	65	61	68	64	61	60								
8	78	68	62	58	77	68	62	58	67	61	57	66	61	57	65	60	57	56								
9	74	64	58	54	73	64	58	54	63	58	54	62	57	54	61	57	53	52								
10	71	61	55	51	70	60	54	51	59	54	50	59	54	50	58	53	50	49								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	630986	630986	630986	630986
5°	635278	616632	623012	630768
10°	594089	594383	602446	608350
15°	548453	531567	555957	566159
20°	491189	468596	494658	516153
25°	425564	392821	425939	453780
30°	336849	301624	336791	376841
35°	248688	215411	245676	284300
40°	169822	142025	168343	202942
45°	99864	77563	98333	126899
50°	42466	34498	45775	61556
55°	8601	8425	14525	18123
60°	1384	1686	1586	2165
65°	804	923	804	1280
70°	442	589	589	736
75°	194	389	389	583
80°	0	290	290	290
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 270°
 Vertical Angle: 45°
 Luminance: 126899 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	464.1	10.2
10°-20°	1180.0	25.9
20°-30°	1384.2	30.3
30°-40°	1013.3	22.2
40°-50°	447.0	9.8
50°-60°	68.3	1.5
60°-70°	3.4	0.1
70°-80°	0.9	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°	3028.3	66.4
0°-40°	4041.5	88.6
0°-60°	4556.8	99.9
0°-90°	4561.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4561.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	5014	5014	5014	5014	5014	
5°	5029	4881	4932	4993	5029	467
15°	4210	4080	4267	4345	4210	1172
25°	3065	2829	3067	3268	3065	1388
35°	1619	1402	1599	1850	1619	1012
45°	561	436	552	713	561	441
55°	39	38	66	83	39	56
65°	3	3	3	4	3	3
75°	0	1	1	1	0	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°	5013.8	5013.8	5013.8	5013.8	5013.8	5013.8	5013.8	5013.8	5013.8	5013.8	5013.8
0.5°	5023.2	5016.5	5009.9	5008.7	5001.3	5001.3	5005.2	5007.9	5010.7	5011.8	5012.6
1°	5031.4	5018.9	5006.7	5000.5	4990.7	4991.5	4998.1	5002.8	5006.7	5009.5	5012.2
1.5°	5038.8	5021.6	5002.4	4989.9	4977.4	4983.6	4993.4	5000.5	5004.0	5006.3	5010.7
2°	5045.5	5023.2	4996.2	4976.6	4962.5	4975.8	4993.4	5002.0	5001.3	5002.4	5007.5
2.5°	5050.6	5022.4	4986.4	4958.6	4947.2	4969.2	4997.0	5005.6	4996.2	4995.4	5003.6
3°	5053.3	5018.1	4973.9	4939.0	4931.6	4965.2	5002.8	5009.1	4989.1	4984.8	4997.7
3.5°	5052.9	5010.3	4957.0	4917.9	4917.5	4962.5	5010.3	5012.2	4977.8	4970.7	4991.1
4°	5049.0	4998.1	4937.0	4895.1	4904.2	4960.5	5015.7	5012.6	4964.5	4953.5	4981.7
4.5°	5041.2	4981.3	4913.9	4874.0	4892.4	4958.2	5018.1	5010.3	4949.2	4932.7	4969.2
5°	5028.7	4960.9	4890.5	4854.0	4881.1	4953.9	5015.7	5002.8	4931.6	4909.6	4954.3
5.5°	5010.3	4937.4	4867.3	4835.2	4869.7	4946.4	5008.3	4992.3	4912.4	4884.2	4937.0
6°	4987.2	4910.4	4844.6	4819.2	4858.0	4934.7	4995.0	4976.6	4892.8	4859.9	4918.6
6.5°	4957.4	4881.8	4822.7	4803.9	4844.6	4920.2	4976.6	4957.8	4872.0	4835.2	4899.5
7°	4922.2	4850.5	4802.4	4789.0	4828.6	4899.8	4952.7	4933.9	4851.7	4814.1	4879.5
7.5°	4883.0	4816.8	4780.0	4774.2	4810.2	4873.2	4924.1	4907.3	4830.2	4792.6	4858.7
8°	4840.3	4781.2	4758.1	4758.1	4788.3	4841.9	4887.3	4876.0	4807.8	4773.4	4836.8
8.5°	4795.3	4741.3	4735.0	4739.7	4762.0	4806.3	4846.6	4841.9	4785.9	4756.9	4814.5
9°	4746.0	4701.7	4710.3	4718.2	4729.9	4763.2	4801.2	4804.3	4762.8	4742.1	4789.0
9.5°	4696.6	4661.4	4683.3	4693.1	4693.5	4716.2	4753.0	4762.4	4740.1	4726.8	4762.4
10°	4648.9	4620.7	4653.6	4664.1	4651.2	4665.3	4698.6	4717.8	4714.3	4710.3	4732.7
10.5°	4602.7	4579.2	4620.3	4629.3	4605.0	4608.9	4643.0	4669.2	4685.7	4692.7	4702.5
11°	4558.0	4537.7	4583.5	4586.2	4555.7	4550.2	4582.7	4618.3	4652.8	4673.1	4668.8
11.5°	4514.6	4494.2	4541.2	4543.5	4498.5	4491.9	4522.0	4563.5	4617.1	4648.5	4633.6
12°	4471.1	4450.0	4495.4	4493.0	4440.2	4422.9	4455.0	4505.9	4577.2	4620.3	4596.0
12.5°	4428.4	4404.5	4448.4	4436.6	4381.0	4359.5	4393.2	4446.4	4533.4	4585.8	4554.5
13°	4386.9	4359.5	4397.5	4379.5	4321.5	4302.3	4329.0	4386.9	4482.8	4545.9	4511.8
13.5°	4345.4	4310.6	4346.6	4325.4	4260.8	4234.2	4265.9	4326.6	4431.9	4503.6	4467.6
14°	4301.6	4260.4	4293.7	4265.1	4199.4	4174.3	4202.9	4265.5	4379.9	4455.0	4421.8
14.5°	4255.7	4209.2	4240.1	4205.6	4138.7	4116.0	4143.4	4206.8	4324.7	4404.5	4374.0
15°	4209.5	4157.1	4183.7	4145.7	4079.9	4054.5	4079.9	4148.1	4267.1	4352.5	4323.5
15.5°	4161.0	4102.3	4126.9	4085.0	4020.8	3994.2	4021.6	4089.3	4211.1	4299.6	4272.6
16°	4111.3	4048.2	4068.2	4024.3	3962.1	3936.6	3959.7	4032.2	4153.6	4243.2	4220.9
16.5°	4057.2	3991.1	4009.5	3964.8	3902.6	3879.5	3901.0	3977.4	4097.6	4186.8	4168.0
17°	4005.5	3934.7	3948.8	3904.1	3846.2	3820.7	3842.3	3918.6	4041.2	4130.1	4113.6
17.5°	3950.3	3875.9	3888.9	3843.8	3787.8	3764.4	3786.3	3862.6	3981.3	4071.7	4056.8
18°	3895.1	3818.0	3827.4	3783.9	3729.1	3706.0	3724.8	3807.4	3924.5	4013.0	4000.1
18.5°	3838.7	3758.1	3766.3	3723.6	3670.8	3649.2	3666.9	3751.4	3868.9	3951.5	3941.3
19°	3782.8	3699.7	3702.9	3662.2	3614.0	3592.5	3609.7	3693.9	3810.6	3892.8	3882.6
19.5°	3725.2	3639.8	3643.4	3601.9	3556.4	3538.0	3555.3	3639.5	3752.6	3830.9	3822.7
20°	3667.6	3582.3	3580.7	3542.3	3498.9	3481.7	3496.9	3583.9	3693.5	3769.8	3762.8
20.5°	3609.3	3522.8	3519.6	3482.0	3441.7	3426.1	3440.2	3526.7	3635.1	3708.0	3702.1
21°	3551.0	3461.7	3457.8	3421.0	3380.6	3368.1	3383.8	3471.1	3575.6	3647.3	3640.6



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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°	3373.2	3275.7	3262.0	3224.8	3188.4	3185.3	3207.2	3298.4	3397.1	3463.6	3458.2
23°	3313.3	3210.7	3195.0	3157.1	3119.5	3118.3	3141.8	3236.2	3337.6	3403.0	3398.3
23.5°	3251.8	3146.9	3127.7	3087.0	3047.0	3054.5	3077.2	3173.1	3272.2	3338.7	3334.4
24°	3189.6	3081.5	3061.1	3015.7	2974.2	2985.6	3009.1	3105.0	3205.2	3274.1	3268.3
24.5°	3128.5	3016.9	2993.4	2941.7	2901.4	2916.7	2940.5	3035.7	3135.1	3207.6	3203.7
25°	3064.7	2949.5	2926.0	2869.3	2828.9	2847.7	2872.4	2966.4	3067.4	3140.2	3141.8
25.5°	3001.6	2884.2	2858.7	2794.9	2756.1	2778.4	2803.9	2897.5	2993.8	3072.1	3073.7
26°	2936.6	2818.0	2791.0	2719.7	2679.8	2702.1	2735.4	2828.2	2919.8	3003.6	3009.4
26.5°	2868.1	2749.5	2722.1	2644.5	2602.6	2630.4	2666.1	2758.9	2846.2	2935.4	2945.2
27°	2793.7	2677.8	2652.4	2570.1	2526.7	2552.5	2592.8	2684.1	2772.2	2866.9	2881.0
27.5°	2718.1	2607.3	2577.6	2496.9	2450.7	2476.2	2524.3	2606.5	2693.9	2798.8	2816.8
28°	2640.6	2532.5	2502.4	2423.7	2373.6	2400.2	2447.6	2527.5	2615.5	2730.7	2752.2
28.5°	2560.3	2455.4	2428.0	2349.7	2298.0	2323.5	2372.4	2449.9	2540.8	2656.7	2682.1
29°	2478.5	2378.7	2352.0	2277.6	2223.2	2246.7	2296.8	2371.2	2466.4	2582.7	2610.1
29.5°	2396.3	2299.6	2275.3	2205.6	2149.2	2170.0	2218.9	2297.2	2392.4	2507.9	2535.7
30°	2318.0	2220.9	2200.9	2133.9	2075.6	2092.8	2139.4	2218.9	2317.6	2431.9	2460.1
30.5°	2241.2	2141.4	2126.9	2062.7	2001.6	2018.0	2064.2	2142.2	2243.2	2355.6	2383.8
31°	2166.1	2059.9	2052.9	1988.7	1930.3	1942.5	1987.5	2069.3	2168.0	2281.9	2306.6
31.5°	2093.2	1983.2	1981.2	1917.4	1859.1	1869.6	1912.7	1997.7	2093.2	2209.1	2231.0
32°	2020.4	1909.6	1910.4	1846.5	1789.0	1802.7	1838.7	1924.9	2021.2	2136.3	2155.1
32.5°	1952.7	1836.8	1840.7	1774.5	1720.9	1733.0	1769.8	1855.9	1947.2	2065.0	2079.5
33°	1886.9	1765.9	1772.5	1703.2	1653.1	1666.0	1698.9	1786.6	1874.3	1993.4	2005.5
33.5°	1819.9	1695.8	1705.2	1637.9	1586.9	1603.8	1631.6	1718.9	1802.7	1924.9	1928.4
34°	1752.2	1628.8	1638.2	1572.5	1523.9	1535.3	1565.4	1653.1	1733.0	1856.7	1854.4
34.5°	1684.1	1564.2	1573.6	1507.5	1462.0	1473.0	1500.0	1587.7	1664.5	1789.0	1783.1
35°	1618.7	1500.4	1507.9	1446.0	1402.1	1416.6	1437.0	1523.9	1599.1	1722.0	1714.2
35.5°	1554.8	1438.9	1442.5	1396.7	1343.0	1354.8	1375.9	1462.8	1536.0	1654.3	1644.1
36°	1489.5	1402.9	1399.4	1336.7	1286.6	1291.3	1317.2	1400.6	1476.9	1587.7	1577.2
36.5°	1428.4	1339.1	1334.0	1277.2	1231.0	1236.9	1260.0	1342.6	1417.4	1521.6	1511.8
37°	1370.8	1274.9	1268.2	1217.3	1175.8	1179.3	1203.2	1283.1	1359.1	1456.6	1450.3
37.5°	1313.6	1210.7	1202.1	1157.8	1122.2	1123.4	1150.0	1224.0	1303.5	1393.9	1387.7
38°	1256.5	1146.8	1136.3	1102.6	1068.5	1070.1	1097.5	1170.7	1245.5	1330.9	1328.5
38.5°	1198.9	1092.4	1076.4	1048.2	1015.3	1017.6	1045.8	1117.5	1191.1	1272.1	1269.8
39°	1141.8	1040.3	1023.5	993.0	964.0	968.7	995.7	1060.3	1134.7	1213.0	1212.2
39.5°	1086.9	988.7	969.9	939.7	913.1	919.7	945.2	1009.0	1079.9	1155.9	1154.3
40°	1033.7	936.6	918.6	887.3	864.5	872.0	897.0	958.9	1024.7	1098.3	1099.5
40.5°	980.8	886.9	865.3	834.8	814.0	826.2	850.8	908.0	974.2	1043.5	1045.4
41°	928.0	839.5	818.3	785.1	768.2	780.7	805.8	859.5	920.9	989.1	992.6
41.5°	877.9	792.1	771.0	737.3	721.2	737.3	762.7	812.1	870.0	936.2	939.7
42°	827.7	746.3	725.1	690.7	676.6	695.4	720.5	766.7	821.5	883.7	890.0
42.5°	780.0	701.7	678.9	645.7	632.7	654.3	680.1	722.4	774.5	834.0	840.3
43°	733.4	656.6	637.8	603.4	590.5	614.7	642.1	678.6	729.1	784.3	792.5
43.5°	688.7	613.9	596.7	561.9	550.1	576.0	603.8	637.4	683.3	736.5	745.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	561.1	494.9	482.0	446.4	435.8	469.9	497.3	521.9	552.5	604.2	617.5
45.5°	521.2	457.3	446.8	411.9	402.1	437.8	464.0	485.5	511.8	563.8	577.1
46°	482.0	422.5	413.5	378.6	373.5	406.0	431.9	451.1	473.0	524.7	537.2
46.5°	443.2	388.8	381.8	347.7	345.0	377.8	400.9	418.6	434.2	487.5	499.6
47°	405.6	356.3	351.2	318.7	316.0	349.7	373.5	386.9	399.0	451.1	464.8
47.5°	369.6	325.4	321.9	291.3	287.4	321.5	346.5	358.7	370.4	416.6	429.9
48°	336.7	295.6	294.1	266.3	259.2	293.3	319.1	330.5	341.8	387.2	395.9
48.5°	303.8	267.4	267.8	242.8	236.5	265.5	291.7	302.3	313.2	357.9	365.7
49°	272.9	241.2	242.8	220.1	215.4	241.6	264.3	274.1	284.3	328.1	335.6
49.5°	244.3	216.1	219.3	199.7	195.4	218.5	239.2	249.4	256.1	298.8	305.4
50°	216.9	192.3	196.2	180.5	176.2	196.6	216.5	225.5	233.8	269.4	275.7
50.5°	192.3	169.5	175.0	162.1	158.2	175.8	194.2	204.0	213.0	244.3	249.8
51°	168.8	148.4	155.1	144.1	141.3	155.8	173.5	184.0	193.0	220.8	225.5
51.5°	146.4	131.6	135.5	129.2	125.3	137.4	153.1	164.5	174.2	199.3	201.3
52°	129.2	114.7	119.4	114.3	109.6	120.2	135.1	146.0	156.6	178.9	178.9
52.5°	112.4	97.9	103.8	99.5	94.4	103.8	116.7	128.4	139.8	159.4	157.4
53°	95.5	81.1	88.1	84.2	80.3	88.1	100.2	112.0	124.1	141.0	137.8
53.5°	78.7	64.2	72.4	69.7	67.0	74.0	85.0	95.9	107.7	123.7	119.0
54°	61.9	52.1	59.5	57.2	55.6	61.1	70.5	81.4	92.4	107.3	101.8
54.5°	49.7	41.5	48.2	46.2	47.0	51.7	57.9	67.7	78.3	91.2	86.1
55°	39.2	30.9	37.6	35.6	38.4	42.3	48.6	56.0	66.2	77.1	71.3
55.5°	28.6	21.5	27.4	25.8	29.8	32.9	39.5	47.0	56.8	64.2	58.3
56°	19.6	14.5	18.8	18.0	21.1	23.5	30.5	38.0	47.8	54.0	49.3
56.5°	12.9	12.5	12.9	12.9	12.9	14.5	21.5	29.0	38.4	44.2	39.9
57°	11.4	11.0	11.7	11.7	11.0	11.0	12.5	20.4	29.0	34.5	30.9
57.5°	9.8	9.0	10.2	10.6	9.8	9.8	9.8	11.4	20.0	24.7	21.9
58°	8.2	7.4	9.0	9.4	9.0	8.6	8.6	9.0	10.6	14.9	12.9
58.5°	7.0	6.7	7.8	8.2	8.2	8.2	7.8	7.8	8.6	10.6	9.8
59°	6.3	6.3	7.0	7.4	7.4	7.4	7.0	7.0	7.4	8.6	8.6
59.5°	5.9	5.9	6.7	7.0	7.0	7.0	6.7	6.7	6.7	7.4	7.8
60°	5.5	5.1	5.9	6.3	6.7	6.3	6.3	5.9	6.3	6.7	7.0
60.5°	5.1	4.7	5.5	5.9	6.3	5.9	5.5	5.5	5.9	6.3	6.7
61°	4.7	4.7	5.1	5.5	5.5	5.5	5.1	5.1	5.1	5.9	5.9
61.5°	4.3	4.3	4.7	5.1	5.5	5.1	4.7	4.7	4.7	5.1	5.5
62°	3.9	3.9	4.3	4.7	5.1	4.7	4.7	4.3	4.3	4.7	5.1
62.5°	3.5	3.5	4.3	4.7	4.7	4.3	4.3	4.3	4.3	4.7	4.7
63°	3.5	3.5	3.9	4.3	4.3	4.3	3.9	3.9	3.9	4.3	4.3
63.5°	3.1	3.1	3.5	3.9	3.9	3.9	3.5	3.5	3.5	3.9	4.3
64°	3.1	3.1	3.5	3.5	3.9	3.5	3.5	3.5	3.5	3.5	3.9
64.5°	2.7	2.7	3.1	3.5	3.5	3.5	3.1	3.1	3.1	3.5	3.5
65°	2.7	2.7	3.1	3.1	3.1	3.1	3.1	2.7	2.7	3.1	3.5
65.5°	2.3	2.3	2.7	3.1	3.1	3.1	2.7	2.7	2.7	3.1	3.1
66°	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.3	2.3	2.7	2.7



TEST NUMBER: P776286

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-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	2.3	2.3	2.3	2.3	2.0	2.0	2.3	2.3
68°	1.6	1.6	2.0	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.3
68.5°	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
69°	1.6	1.6	1.6	2.0	2.0	2.0	1.6	1.6	1.6	2.0	2.0
69.5°	1.2	1.2	1.6	2.0	2.0	1.6	1.6	1.6	1.6	1.6	2.0
70°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70.5°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.6	1.6
71°	1.2	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.2	1.6	1.6
71.5°	0.8	0.8	1.2	1.2	1.6	1.2	1.2	1.2	1.2	1.2	1.6
72°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
73°	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	1.2	1.2
73.5°	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	0.8	1.2
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°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.4	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.8	0.8
76.5°	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.8
77°	0.4	0.4	0.4	0.4	0.4	0.4	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	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4	0.4
81°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.4	0.4
81.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.4
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	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: P776286
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-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: P776286

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	5013.8	5013.8	5013.8	5013.8	5013.8	5013.8
0.5°	5018.5	5018.1	5021.6	5025.5	5025.9	5023.2
1°	5021.2	5024.0	5029.8	5035.3	5036.1	5031.4
1.5°	5022.8	5028.3	5034.9	5041.2	5044.3	5038.8
2°	5024.0	5030.6	5035.3	5043.2	5050.2	5045.5
2.5°	5024.8	5030.2	5031.0	5039.2	5052.2	5050.6
3°	5024.4	5027.5	5019.7	5027.1	5049.8	5053.3
3.5°	5024.0	5022.8	5002.0	5008.7	5042.0	5052.9
4°	5023.6	5015.4	4979.3	4980.9	5029.1	5049.0
4.5°	5021.6	5005.6	4950.7	4948.0	5010.7	5041.2
5°	5018.5	4993.0	4916.7	4911.2	4986.4	5028.7
5.5°	5015.0	4978.2	4882.2	4871.7	4958.2	5010.3
6°	5009.5	4961.3	4847.4	4834.5	4930.8	4987.2
6.5°	5000.1	4943.7	4813.7	4800.0	4902.2	4957.4
7°	4986.4	4924.5	4784.7	4770.2	4868.1	4922.2
7.5°	4968.4	4904.2	4761.2	4745.2	4836.4	4883.0
8°	4942.9	4881.1	4741.3	4724.4	4802.7	4840.3
8.5°	4912.4	4856.4	4724.4	4708.8	4767.9	4795.3
9°	4877.9	4827.8	4709.2	4693.5	4731.9	4746.0
9.5°	4838.0	4795.7	4697.4	4679.4	4697.0	4696.6
10°	4792.2	4760.5	4682.1	4664.9	4660.6	4648.9
10.5°	4747.5	4721.3	4665.7	4649.6	4624.6	4602.7
11°	4699.8	4680.6	4647.3	4631.6	4587.4	4558.0
11.5°	4650.0	4637.9	4625.8	4610.9	4551.4	4514.6
12°	4603.4	4595.6	4599.1	4585.8	4515.0	4471.1
12.5°	4558.4	4552.9	4570.9	4556.9	4478.5	4428.4
13°	4512.2	4510.3	4540.8	4527.5	4443.7	4386.9
13.5°	4466.4	4469.1	4507.5	4494.6	4405.7	4345.4
14°	4422.2	4427.6	4472.7	4460.1	4366.6	4301.6
14.5°	4377.5	4387.7	4437.0	4424.5	4325.8	4255.7
15°	4332.1	4345.4	4397.1	4386.1	4283.5	4209.5
15.5°	4287.1	4304.3	4356.0	4347.0	4237.7	4161.0
16°	4238.5	4260.4	4312.5	4303.5	4191.1	4111.3
16.5°	4190.8	4215.8	4268.3	4256.5	4143.4	4057.2
17°	4137.9	4168.4	4221.3	4208.0	4092.9	4005.5
17.5°	4086.6	4120.7	4170.4	4155.5	4040.8	3950.3
18°	4031.8	4070.2	4116.0	4100.3	3987.1	3895.1
18.5°	3977.4	4018.1	4061.5	4042.0	3929.6	3838.7
19°	3919.8	3963.3	4003.6	3980.9	3874.0	3782.8
19.5°	3863.0	3910.8	3945.3	3918.6	3816.8	3725.2
20°	3803.9	3854.0	3886.9	3857.5	3758.5	3667.6
20.5°	3746.7	3799.6	3823.5	3794.1	3699.4	3609.3
21°	3687.6	3741.3	3763.6	3729.9	3640.2	3551.0



TEST NUMBER: P776286

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3513.4	3569.8	3578.8	3533.3	3457.4	3373.2
23°	3452.7	3511.4	3514.2	3467.6	3395.5	3313.3
23.5°	3392.0	3450.7	3448.4	3399.8	3329.7	3251.8
24°	3333.3	3390.8	3383.8	3329.3	3266.3	3189.6
24.5°	3273.4	3329.7	3316.8	3260.4	3199.7	3128.5
25°	3211.1	3267.9	3247.5	3192.3	3136.7	3064.7
25.5°	3150.8	3206.0	3181.7	3125.0	3067.8	3001.6
26°	3090.5	3143.4	3116.7	3059.6	3004.0	2936.6
26.5°	3026.7	3081.1	3050.6	2992.6	2937.4	2868.1
27°	2962.5	3017.7	2985.6	2927.6	2870.1	2793.7
27.5°	2898.6	2952.7	2918.6	2861.4	2796.8	2718.1
28°	2834.4	2884.5	2850.9	2794.1	2730.7	2640.6
28.5°	2770.6	2813.7	2783.5	2725.2	2658.2	2560.3
29°	2698.9	2742.8	2715.0	2657.4	2583.4	2478.5
29.5°	2624.9	2669.2	2647.3	2586.6	2509.4	2396.3
30°	2547.0	2593.2	2576.0	2514.5	2433.1	2318.0
30.5°	2467.5	2515.7	2501.6	2440.5	2353.2	2241.2
31°	2393.9	2435.8	2428.4	2366.5	2276.5	2166.1
31.5°	2312.1	2355.2	2353.6	2292.9	2197.4	2093.2
32°	2227.1	2277.6	2280.0	2221.7	2122.2	2020.4
32.5°	2152.7	2201.3	2204.4	2149.6	2047.8	1952.7
33°	2075.6	2127.7	2133.6	2080.7	1974.2	1886.9
33.5°	1998.5	2052.5	2056.8	2011.4	1904.9	1819.9
34°	1925.6	1985.2	1986.3	1941.3	1837.9	1752.2
34.5°	1856.3	1917.4	1918.6	1872.8	1772.5	1684.1
35°	1789.4	1850.5	1848.1	1805.8	1707.5	1618.7
35.5°	1723.6	1784.7	1780.4	1738.1	1645.3	1554.8
36°	1658.6	1720.1	1715.4	1671.9	1582.6	1489.5
36.5°	1593.6	1656.6	1650.0	1604.2	1522.3	1428.4
37°	1529.8	1592.8	1583.8	1537.6	1462.0	1370.8
37.5°	1466.7	1529.8	1523.1	1475.0	1397.8	1313.6
38°	1404.5	1466.0	1458.9	1413.9	1339.9	1256.5
38.5°	1343.0	1404.9	1391.6	1354.4	1282.7	1198.9
39°	1282.3	1348.5	1335.2	1294.5	1225.2	1141.8
39.5°	1224.4	1291.7	1278.8	1234.9	1167.6	1086.9
40°	1168.0	1235.3	1222.8	1175.0	1110.4	1033.7
40.5°	1112.8	1179.0	1166.4	1115.5	1056.4	980.8
41°	1062.7	1122.6	1110.0	1059.5	1003.1	928.0
41.5°	1008.6	1068.9	1054.1	1004.7	951.1	877.9
42°	958.1	1016.5	998.8	951.5	899.8	827.7
42.5°	908.4	963.2	945.6	900.6	850.1	780.0
43°	862.6	911.1	892.3	850.1	800.3	733.4
43.5°	813.2	859.8	840.7	799.2	751.0	688.7



TEST NUMBER: P776286

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	679.7	713.0	695.4	658.6	610.0	561.1
45.5°	634.7	666.8	648.8	614.3	566.2	521.2
46°	593.6	622.2	604.2	570.9	524.3	482.0
46.5°	552.1	578.7	561.9	529.4	483.2	443.2
47°	512.9	536.4	519.6	489.0	444.0	405.6
47.5°	473.4	495.3	479.3	449.9	405.6	369.6
48°	436.6	456.2	439.3	411.9	370.4	336.7
48.5°	400.6	418.2	402.5	377.1	337.1	303.8
49°	368.1	382.5	367.3	341.8	304.6	272.9
49.5°	335.9	348.1	333.6	308.9	274.1	244.3
50°	303.5	314.4	299.1	276.8	246.3	216.9
50.5°	271.3	283.1	269.4	247.1	218.5	192.3
51°	243.5	253.7	240.4	219.7	193.0	168.8
51.5°	217.3	225.9	214.2	193.4	169.9	146.4
52°	191.9	200.1	187.9	168.4	147.2	129.2
52.5°	168.8	176.2	164.8	146.4	130.0	112.4
53°	147.6	153.1	142.5	129.2	112.4	95.5
53.5°	127.3	133.1	125.7	111.6	95.1	78.7
54°	108.1	116.3	108.9	94.4	77.5	61.9
54.5°	91.6	99.5	92.0	77.1	60.3	49.7
55°	76.0	82.6	75.2	59.9	48.9	39.2
55.5°	61.9	65.4	58.3	48.2	38.0	28.6
56°	52.5	53.3	47.0	38.0	27.8	19.6
56.5°	43.1	42.7	37.2	27.4	18.4	12.9
57°	33.7	32.1	26.6	18.8	12.5	11.4
57.5°	24.3	23.1	18.4	12.9	11.4	9.8
58°	14.9	16.1	13.3	11.4	9.8	8.2
58.5°	11.4	14.1	12.1	10.2	8.2	7.0
59°	9.8	12.5	10.6	8.6	7.0	6.3
59.5°	9.0	10.6	9.4	7.4	6.3	5.9
60°	8.2	8.6	7.8	6.7	5.9	5.5
60.5°	7.4	7.8	7.4	6.3	5.5	5.1
61°	7.0	7.4	6.7	5.9	5.1	4.7
61.5°	6.3	6.7	6.3	5.5	4.7	4.3
62°	5.9	6.3	5.9	5.1	4.3	3.9
62.5°	5.5	5.9	5.5	4.7	3.9	3.5
63°	5.1	5.5	5.1	4.3	3.9	3.5
63.5°	4.7	5.1	4.7	3.9	3.5	3.1
64°	4.3	4.7	4.3	3.5	3.1	3.1
64.5°	4.3	4.3	3.9	3.5	3.1	2.7
65°	3.9	4.3	3.9	3.1	2.7	2.7
65.5°	3.5	3.9	3.5	3.1	2.7	2.3
66°	3.5	3.5	3.1	2.7	2.3	2.3



TEST NUMBER: P776286

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	2.7	3.1	2.7	2.3	2.0	2.0
68°	2.7	2.7	2.3	2.0	2.0	1.6
68.5°	2.3	2.7	2.3	2.0	1.6	1.6
69°	2.3	2.3	2.3	2.0	1.6	1.6
69.5°	2.0	2.3	2.0	1.6	1.6	1.2
70°	2.0	2.0	2.0	1.6	1.2	1.2
70.5°	2.0	2.0	2.0	1.6	1.2	1.2
71°	1.6	2.0	1.6	1.6	1.2	1.2
71.5°	1.6	1.6	1.6	1.2	1.2	0.8
72°	1.6	1.6	1.6	1.2	1.2	0.8
72.5°	1.6	1.6	1.2	1.2	0.8	0.8
73°	1.2	1.2	1.2	1.2	0.8	0.8
73.5°	1.2	1.2	1.2	0.8	0.8	0.8
74°	1.2	1.2	1.2	0.8	0.8	0.8
74.5°	1.2	1.2	1.2	0.8	0.8	0.4
75°	0.8	1.2	0.8	0.8	0.8	0.4
75.5°	0.8	0.8	0.8	0.8	0.4	0.4
76°	0.8	0.8	0.8	0.8	0.4	0.4
76.5°	0.8	0.8	0.8	0.4	0.4	0.4
77°	0.8	0.8	0.8	0.4	0.4	0.4
77.5°	0.8	0.8	0.8	0.4	0.4	0.4
78°	0.8	0.8	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	0.0
80°	0.4	0.4	0.4	0.4	0.0	0.0
80.5°	0.4	0.4	0.4	0.4	0.0	0.0
81°	0.4	0.4	0.4	0.4	0.0	0.0
81.5°	0.4	0.4	0.4	0.0	0.0	0.0
82°	0.4	0.4	0.4	0.0	0.0	0.0
82.5°	0.4	0.4	0.4	0.0	0.0	0.0
83°	0.4	0.4	0.0	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: P776286

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-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
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

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21.5°	3492.6	3401.0	3393.9	3356.4	3318.8	3310.2	3329.7	3415.1	3515.7	3584.6	3580.3
22°	3433.9	3338.3	3329.7	3290.6	3254.6	3248.7	3269.8	3358.3	3456.6	3524.7	3519.2



44°	644.9	572.8	556.8	521.2	511.4	539.6	567.0	597.5	637.8	690.7	702.0
44.5°	601.8	533.3	518.8	482.8	472.6	503.9	531.3	558.7	594.8	646.8	658.6



66.5°	2.0	2.0	2.3	2.7	2.7	2.7	2.3	2.3	2.3	2.7	2.7
67°	2.0	2.0	2.3	2.3	2.7	2.3	2.3	2.3	2.3	2.3	2.7



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°	3629.3	3684.9	3702.5	3665.3	3579.9	3492.6
22°	3570.1	3626.5	3639.8	3600.7	3520.4	3433.9



44°	767.4	810.1	790.5	751.0	702.0	644.9
44.5°	722.4	761.2	743.2	704.4	656.6	601.8

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66.5°	3.1	3.5	3.1	2.7	2.3	2.0
67°	3.1	3.1	2.7	2.3	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)