

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: P776289

Luminaire Tested: HCDJBL3040CSD-HCD4TRC-4000lm-5000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776289  
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-5000K  
Description: 4 INCH ROUND MEDIUM SPECULAR CLEAR TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

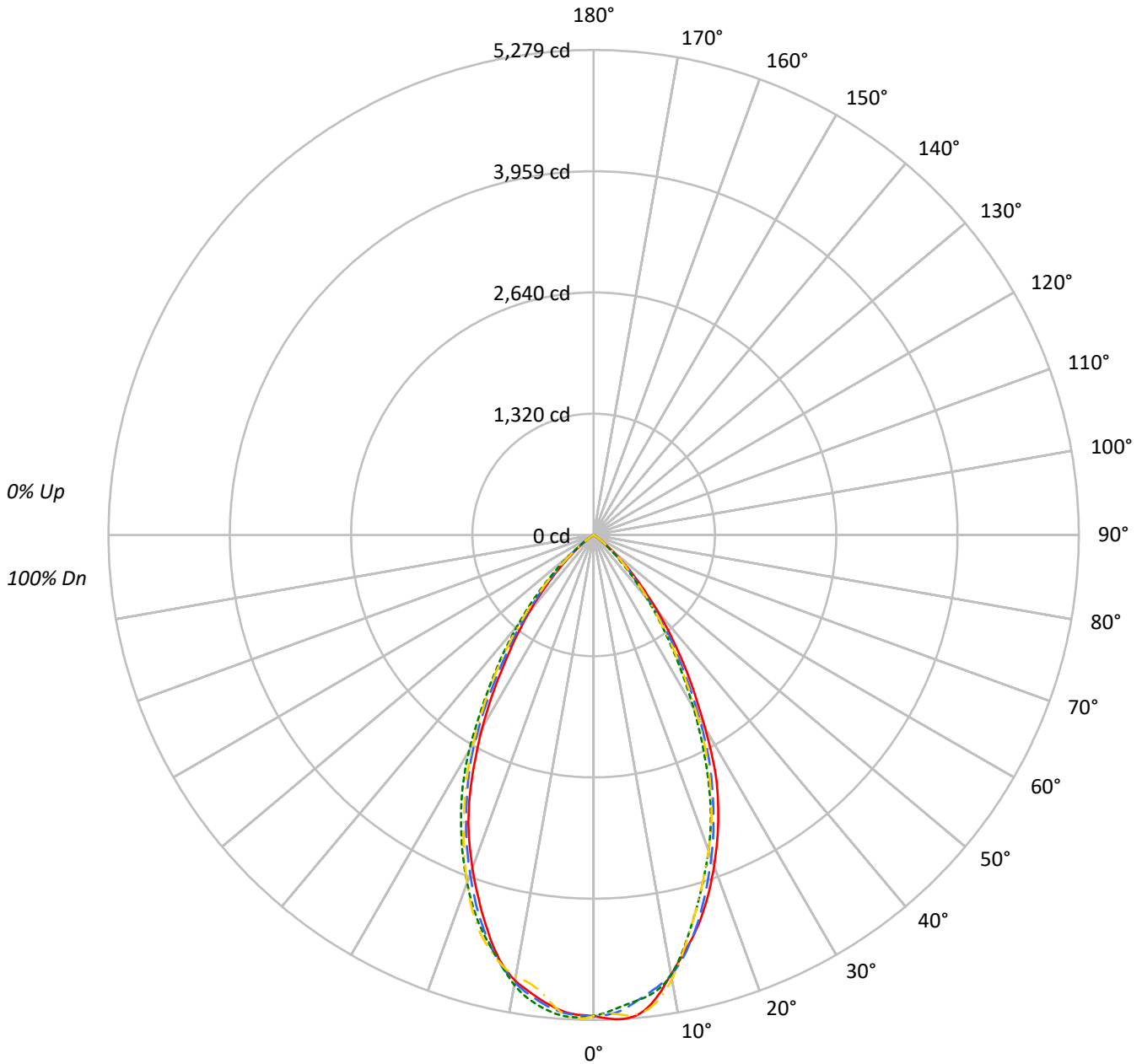
Lumens per Lamp: N/A  
Luminaire Lumens: 4765.1 lumens  
Efficiency: N/A  
Efficacy: 123.8 lumens/watt  
Spacing Criteria (0/90/45): 0.87 / 0.87 / 0.88  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	659201	659201	659201	659201
5°	663677	644197	650867	658978
10°	620644	620963	629385	635544
15°	572986	555345	580817	591474
20°	513153	489542	516769	539242
25°	444588	410386	444990	474068
30°	351904	315109	351846	393698
35°	259795	225043	256661	297006
40°	177412	148382	175867	212027
45°	104331	81034	102729	132576
50°	44365	36044	47811	64316
55°	8974	8798	15161	18935
60°	1435	1762	1636	2265
65°	864	983	864	1340
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: 132576 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	484.9	10.2
10°-20°	1232.7	25.9
20°-30°	1446.0	30.3
30°-40°	1058.6	22.2
40°-50°	467.0	9.8
50°-60°	71.3	1.5
60°-70°	3.6	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°	3163.7	66.4
0°-40°	4222.3	88.6
0°-60°	4760.6	99.9
0°-90°	4765.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4765.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	5238	5238	5238	5238	5238	
5°	5254	5099	5152	5216	5254	488
15°	4398	4262	4458	4540	4398	1225
25°	3202	2955	3205	3414	3202	1450
35°	1691	1465	1671	1933	1691	1057
45°	586	455	577	745	586	461
55°	41	40	69	86	41	59
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



TEST NUMBER: P776289

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	5238.0	5238.0	5238.0	5238.0	5238.0	5238.0	5238.0	5238.0	5238.0	5238.0	5238.0
0.5°	5247.8	5240.8	5233.9	5232.7	5224.9	5224.9	5229.0	5231.8	5234.7	5235.9	5236.8
1°	5256.4	5243.3	5230.6	5224.1	5213.8	5214.7	5221.6	5226.5	5230.6	5233.5	5236.3
1.5°	5264.2	5246.2	5226.1	5213.0	5199.9	5206.5	5216.7	5224.1	5227.8	5230.2	5234.7
2°	5271.1	5247.8	5219.6	5199.1	5184.4	5198.3	5216.7	5225.7	5224.9	5226.1	5231.4
2.5°	5276.4	5247.0	5209.3	5180.3	5168.4	5191.3	5220.4	5229.4	5219.6	5218.8	5227.3
3°	5279.3	5242.5	5196.3	5159.9	5152.1	5187.3	5226.5	5233.1	5212.2	5207.7	5221.2
3.5°	5278.9	5234.3	5178.7	5137.8	5137.4	5184.4	5234.3	5236.3	5200.3	5193.0	5214.3
4°	5274.8	5221.6	5157.8	5114.0	5123.4	5182.4	5240.0	5236.8	5186.4	5175.0	5204.4
4.5°	5266.6	5204.0	5133.7	5091.9	5111.2	5179.9	5242.5	5234.3	5170.5	5153.3	5191.3
5°	5253.5	5182.8	5109.1	5071.1	5099.3	5175.4	5240.0	5226.5	5152.1	5129.2	5175.8
5.5°	5234.3	5158.2	5085.0	5051.5	5087.4	5167.6	5232.3	5215.5	5132.0	5102.6	5157.8
6°	5210.2	5130.0	5061.3	5034.7	5075.2	5155.4	5218.3	5199.1	5111.6	5077.2	5138.6
6.5°	5179.1	5100.1	5038.4	5018.7	5061.3	5140.2	5199.1	5179.5	5089.9	5051.5	5118.5
7°	5142.3	5067.4	5017.1	5003.2	5044.5	5118.9	5174.2	5154.5	5068.6	5029.4	5097.7
7.5°	5101.4	5032.2	4993.8	4987.6	5025.3	5091.1	5144.3	5126.7	5046.1	5006.9	5076.0
8°	5056.8	4995.0	4970.9	4970.9	5002.4	5058.4	5105.9	5094.0	5022.8	4986.8	5053.1
8.5°	5009.7	4953.3	4946.7	4951.6	4975.0	5021.2	5063.3	5058.4	4999.9	4969.6	5029.8
9°	4958.2	4912.0	4921.0	4929.1	4941.4	4976.2	5015.9	5019.1	4975.8	4954.1	5003.2
9.5°	4906.6	4869.8	4892.7	4903.0	4903.4	4927.1	4965.6	4975.4	4952.1	4938.1	4975.4
10°	4856.7	4827.3	4861.6	4872.7	4859.2	4873.9	4908.7	4928.7	4925.1	4921.0	4944.3
10.5°	4808.5	4783.9	4826.9	4836.3	4810.9	4815.0	4850.6	4878.0	4895.2	4902.6	4912.8
11°	4761.8	4740.6	4788.4	4791.3	4759.4	4753.7	4787.6	4824.8	4860.8	4882.1	4877.6
11.5°	4716.4	4695.2	4744.3	4746.7	4699.7	4692.7	4724.2	4767.6	4823.6	4856.3	4840.8
12°	4671.0	4648.9	4696.4	4693.9	4638.7	4620.7	4654.3	4707.4	4781.9	4826.9	4801.5
12.5°	4626.4	4601.5	4647.3	4635.0	4576.9	4554.4	4589.6	4645.3	4736.1	4790.9	4758.2
13°	4583.1	4554.4	4594.1	4575.3	4514.8	4494.7	4522.5	4583.1	4683.3	4749.2	4713.6
13.5°	4539.7	4503.3	4540.9	4518.9	4451.4	4423.5	4456.7	4520.1	4630.1	4705.0	4667.3
14°	4493.9	4451.0	4485.7	4455.9	4387.1	4361.0	4390.8	4456.3	4575.7	4654.3	4619.5
14.5°	4446.0	4397.4	4429.7	4393.7	4323.7	4300.0	4328.6	4394.9	4518.0	4601.5	4569.6
15°	4397.8	4343.0	4370.8	4331.1	4262.4	4235.8	4262.4	4333.6	4457.9	4547.1	4516.8
15.5°	4347.1	4285.7	4311.5	4267.7	4200.6	4172.8	4201.4	4272.2	4399.4	4491.9	4463.6
16°	4295.1	4229.2	4250.1	4204.3	4139.3	4112.7	4136.8	4212.5	4339.3	4433.0	4409.6
16.5°	4238.7	4169.5	4188.7	4142.1	4077.1	4052.9	4075.4	4155.2	4280.8	4374.1	4354.4
17°	4184.7	4110.6	4125.3	4078.7	4018.2	3991.6	4014.1	4093.8	4221.9	4314.7	4297.6
17.5°	4127.0	4049.3	4062.8	4015.7	3957.2	3932.7	3955.6	4035.4	4159.3	4253.8	4238.2
18°	4069.3	3988.7	3998.5	3953.1	3895.9	3871.7	3891.4	3977.7	4100.0	4192.4	4178.9
18.5°	4010.4	3926.1	3934.7	3890.1	3834.9	3812.4	3830.8	3919.2	4041.9	4128.2	4117.6
19°	3951.9	3865.2	3868.5	3825.9	3775.6	3753.1	3771.1	3859.0	3980.9	4066.9	4056.2
19.5°	3891.8	3802.6	3806.3	3762.9	3715.5	3696.2	3714.2	3802.2	3920.4	4002.2	3993.6
20°	3831.6	3742.5	3740.8	3700.7	3655.3	3637.3	3653.3	3744.1	3858.6	3938.4	3931.0
20.5°	3770.7	3680.3	3677.0	3637.7	3595.6	3579.3	3594.0	3684.4	3797.7	3873.8	3867.6
21°	3709.7	3616.5	3612.4	3573.9	3531.8	3518.7	3535.1	3626.3	3735.5	3810.4	3803.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	3524.0	3422.2	3407.9	3369.0	3331.0	3327.7	3350.6	3445.9	3549.0	3618.5	3612.8
23°	3461.4	3354.3	3337.9	3298.2	3259.0	3257.7	3282.3	3380.9	3486.8	3555.1	3550.2
23.5°	3397.2	3287.6	3267.6	3225.0	3183.3	3191.1	3214.8	3315.0	3418.5	3488.0	3483.5
24°	3332.2	3219.3	3198.0	3150.6	3107.2	3119.1	3143.6	3243.8	3348.5	3420.5	3414.4
24.5°	3268.4	3151.8	3127.2	3073.2	3031.1	3047.1	3072.0	3171.4	3275.3	3351.0	3346.9
25°	3201.7	3081.4	3056.9	2997.6	2955.4	2975.1	3000.8	3099.0	3204.6	3280.6	3282.3
25.5°	3135.8	3013.1	2986.5	2919.9	2879.4	2902.7	2929.3	3027.0	3127.7	3209.5	3211.1
26°	3067.9	2944.0	2915.8	2841.3	2799.6	2822.9	2857.7	2954.6	3050.3	3137.9	3144.0
26.5°	2996.3	2872.4	2843.8	2762.8	2719.0	2748.0	2785.3	2882.2	2973.4	3066.7	3076.9
27°	2918.6	2797.5	2771.0	2685.1	2639.6	2666.6	2708.8	2804.1	2896.1	2995.1	3009.8
27.5°	2839.7	2723.9	2692.8	2608.6	2560.3	2586.9	2637.2	2723.1	2814.3	2923.9	2942.8
28°	2758.7	2645.8	2614.3	2532.1	2479.7	2507.5	2557.0	2640.5	2732.5	2852.8	2875.3
28.5°	2674.8	2565.2	2536.6	2454.8	2400.8	2427.3	2478.5	2559.5	2654.4	2775.5	2802.0
29°	2589.3	2485.0	2457.2	2379.5	2322.6	2347.2	2399.5	2477.3	2576.7	2698.1	2726.8
29.5°	2503.4	2402.4	2377.0	2304.2	2245.3	2267.0	2318.1	2399.9	2499.3	2620.0	2649.1
30°	2421.6	2320.2	2299.3	2229.4	2168.4	2186.4	2235.1	2318.1	2421.2	2540.7	2570.1
30.5°	2341.4	2237.1	2222.0	2154.9	2091.1	2108.3	2156.6	2238.0	2343.5	2460.9	2490.3
31°	2262.9	2152.1	2144.7	2077.6	2016.7	2029.3	2076.4	2161.9	2265.0	2384.0	2409.8
31.5°	2186.8	2071.9	2069.8	2003.2	1942.2	1953.3	1998.2	2087.0	2186.8	2307.9	2330.8
32°	2110.7	1995.0	1995.8	1929.1	1869.0	1883.3	1920.9	2010.9	2111.6	2231.8	2251.5
32.5°	2040.0	1918.9	1923.0	1853.8	1797.8	1810.5	1848.9	1938.9	2034.2	2157.4	2172.5
33°	1971.2	1844.8	1851.8	1779.4	1727.0	1740.5	1774.9	1866.5	1958.2	2082.5	2095.2
33.5°	1901.3	1771.6	1781.4	1711.1	1657.9	1675.5	1704.5	1795.8	1883.3	2010.9	2014.6
34°	1830.5	1701.7	1711.5	1642.8	1592.1	1603.9	1635.4	1727.0	1810.5	1939.8	1937.3
34.5°	1759.4	1634.2	1644.0	1574.9	1527.4	1538.9	1567.1	1658.7	1738.9	1869.0	1862.8
35°	1691.0	1567.5	1575.3	1510.6	1464.8	1480.0	1501.2	1592.1	1670.6	1799.0	1790.9
35.5°	1624.4	1503.3	1507.0	1459.1	1403.1	1415.3	1437.4	1528.2	1604.7	1728.3	1717.6
36°	1556.1	1465.7	1462.0	1396.5	1344.2	1349.1	1376.1	1463.2	1543.0	1658.7	1647.7
36.5°	1492.2	1399.0	1393.7	1334.3	1286.1	1292.2	1316.3	1402.7	1480.8	1589.6	1579.4
37°	1432.1	1331.9	1324.9	1271.8	1228.4	1232.1	1257.0	1340.5	1419.8	1521.7	1515.1
37.5°	1372.4	1264.8	1255.8	1209.6	1172.4	1173.6	1201.4	1278.7	1361.8	1456.2	1449.7
38°	1312.7	1198.1	1187.1	1151.9	1116.3	1118.0	1146.6	1223.1	1301.2	1390.4	1387.9
38.5°	1252.5	1141.3	1124.5	1095.0	1060.7	1063.1	1092.6	1167.5	1244.4	1329.0	1326.6
39°	1192.8	1086.9	1069.3	1037.4	1007.1	1012.0	1040.2	1107.7	1185.4	1267.3	1266.4
39.5°	1135.5	1032.9	1013.2	981.7	953.9	960.9	987.5	1054.1	1128.2	1207.5	1205.9
40°	1079.9	978.5	959.6	926.9	903.2	911.0	937.2	1001.8	1070.5	1147.4	1148.6
40.5°	1024.7	926.5	904.0	872.1	850.4	863.1	888.9	948.6	1017.7	1090.1	1092.2
41°	969.5	877.0	854.9	820.2	802.6	815.7	841.8	897.9	962.1	1033.3	1037.0
41.5°	917.1	827.5	805.4	770.3	753.5	770.3	796.8	848.4	908.9	978.1	981.7
42°	864.7	779.7	757.6	721.6	706.9	726.5	752.7	800.9	858.2	923.2	929.8
42.5°	814.8	733.0	709.3	674.5	661.0	683.5	710.5	754.7	809.1	871.3	877.8
43°	766.2	686.0	666.4	630.4	616.9	642.2	670.9	708.9	761.7	819.3	827.9
43.5°	719.5	641.4	623.4	587.0	574.7	601.7	630.8	665.9	713.8	769.4	779.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	586.2	517.0	503.5	466.3	455.3	490.9	519.5	545.3	577.2	631.2	645.1
45.5°	544.5	477.8	466.7	430.3	420.1	457.3	484.7	507.2	534.6	589.0	603.0
46°	503.5	441.4	432.0	395.6	390.2	424.2	451.2	471.2	494.1	548.1	561.2
46.5°	463.1	406.2	398.8	363.2	360.4	394.7	418.9	437.3	453.6	509.3	522.0
47°	423.8	372.2	366.9	333.0	330.1	365.3	390.2	404.1	416.8	471.2	485.6
47.5°	386.2	339.9	336.2	304.3	300.2	335.8	362.0	374.7	387.0	435.2	449.1
48°	351.8	308.8	307.2	278.2	270.8	306.4	333.4	345.2	357.1	404.6	413.6
48.5°	317.4	279.4	279.8	253.6	247.1	277.3	304.7	315.8	327.2	373.9	382.1
49°	285.1	252.0	253.6	229.9	225.0	252.4	276.1	286.3	297.0	342.8	350.6
49.5°	255.3	225.8	229.1	208.6	204.1	228.3	249.9	260.6	267.5	312.1	319.1
50°	226.6	200.8	204.9	188.6	184.1	205.3	226.2	235.6	244.2	281.4	288.0
50.5°	200.8	177.1	182.8	169.3	165.3	183.7	202.9	213.1	222.5	255.3	261.0
51°	176.3	155.0	162.0	150.5	147.7	162.8	181.2	192.3	201.7	230.7	235.6
51.5°	153.0	137.4	141.5	135.0	130.9	143.6	159.9	171.8	182.0	208.2	210.3
52°	135.0	119.9	124.8	119.4	114.5	125.6	141.1	152.6	163.6	186.9	186.9
52.5°	117.4	102.3	108.4	103.9	98.6	108.4	121.9	134.2	146.0	166.5	164.4
53°	99.8	84.7	92.0	87.9	83.9	92.0	104.7	117.0	129.7	147.3	144.0
53.5°	82.2	67.1	75.7	72.8	69.9	77.3	88.8	100.2	112.5	129.3	124.4
54°	64.6	54.4	62.2	59.7	58.1	63.8	73.6	85.1	96.5	112.1	106.4
54.5°	52.0	43.4	50.3	48.3	49.1	54.0	60.5	70.8	81.8	95.3	90.0
55°	40.9	32.3	39.3	37.2	40.1	44.2	50.7	58.5	69.1	80.6	74.4
55.5°	29.9	22.5	28.6	27.0	31.1	34.4	41.3	49.1	59.3	67.1	60.9
56°	20.5	15.1	19.6	18.8	22.1	24.5	31.9	39.7	49.9	56.4	51.5
56.5°	13.5	13.1	13.5	13.5	13.5	15.1	22.5	30.3	40.1	46.2	41.7
57°	11.9	11.5	12.3	12.3	11.5	11.5	13.1	21.3	30.3	36.0	32.3
57.5°	10.2	9.4	10.6	11.0	10.2	10.2	10.2	11.9	20.9	25.8	22.9
58°	8.6	7.8	9.4	9.8	9.4	9.0	9.0	9.4	11.0	15.5	13.5
58.5°	7.4	7.0	8.2	8.6	8.6	8.6	8.2	8.2	9.0	11.0	10.2
59°	6.5	6.5	7.4	7.8	7.8	7.8	7.4	7.4	7.8	9.0	9.0
59.5°	6.1	6.1	7.0	7.4	7.4	7.4	7.0	7.0	7.0	7.8	8.2
60°	5.7	5.3	6.1	6.5	7.0	6.5	6.5	6.1	6.5	7.0	7.4
60.5°	5.3	4.9	5.7	6.1	6.5	6.1	5.7	5.7	6.1	6.5	7.0
61°	4.9	4.9	5.3	5.7	5.7	5.7	5.3	5.3	5.3	6.1	6.1
61.5°	4.5	4.5	4.9	5.3	5.7	5.3	4.9	4.9	4.9	5.3	5.7
62°	4.1	4.1	4.5	4.9	5.3	4.9	4.9	4.5	4.5	4.9	5.3
62.5°	3.7	3.7	4.5	4.9	4.9	4.5	4.5	4.5	4.5	4.9	4.9
63°	3.7	3.7	4.1	4.5	4.5	4.5	4.1	4.1	4.1	4.5	4.5
63.5°	3.3	3.3	3.7	4.1	4.1	4.1	3.7	3.7	3.7	4.1	4.5
64°	3.3	3.3	3.7	3.7	4.1	3.7	3.7	3.7	3.7	3.7	4.1
64.5°	2.9	2.9	3.3	3.7	3.7	3.7	3.3	3.3	3.3	3.7	3.7
65°	2.9	2.9	3.3	3.3	3.3	3.3	3.3	2.9	2.9	3.3	3.7
65.5°	2.5	2.5	2.9	3.3	3.3	3.3	2.9	2.9	2.9	3.3	3.3
66°	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.5	2.5	2.9	2.9





TEST NUMBER: P776289

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-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	2.5	2.5	2.5	2.5	2.0	2.0	2.5	2.5
68°	1.6	1.6	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0	2.5
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: P776289  
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-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: P776289

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	5238.0	5238.0	5238.0	5238.0	5238.0	5238.0
0.5°	5242.9	5242.5	5246.2	5250.3	5250.7	5247.8
1°	5245.8	5248.6	5254.8	5260.5	5261.3	5256.4
1.5°	5247.4	5253.1	5260.1	5266.6	5269.9	5264.2
2°	5248.6	5255.6	5260.5	5268.7	5276.0	5271.1
2.5°	5249.4	5255.2	5256.0	5264.6	5278.1	5276.4
3°	5249.0	5252.3	5244.1	5251.9	5275.6	5279.3
3.5°	5248.6	5247.4	5225.7	5232.7	5267.4	5278.9
4°	5248.2	5239.6	5202.0	5203.6	5253.9	5274.8
4.5°	5246.2	5229.4	5172.1	5169.3	5234.7	5266.6
5°	5242.9	5216.3	5136.5	5130.8	5209.3	5253.5
5.5°	5239.2	5200.8	5100.5	5089.5	5179.9	5234.3
6°	5233.5	5183.2	5064.1	5050.6	5151.3	5210.2
6.5°	5223.7	5164.8	5029.0	5014.6	5121.4	5179.1
7°	5209.3	5144.7	4998.7	4983.5	5085.8	5142.3
7.5°	5190.5	5123.4	4974.1	4957.4	5052.7	5101.4
8°	5163.9	5099.3	4953.3	4935.7	5017.5	5056.8
8.5°	5132.0	5073.5	4935.7	4919.3	4981.1	5009.7
9°	5096.0	5043.7	4919.7	4903.4	4943.5	4958.2
9.5°	5054.3	5010.1	4907.5	4888.6	4907.1	4906.6
10°	5006.5	4973.3	4891.5	4873.5	4869.0	4856.7
10.5°	4959.8	4932.4	4874.3	4857.6	4831.4	4808.5
11°	4909.9	4889.9	4855.1	4838.7	4792.5	4761.8
11.5°	4858.0	4845.3	4832.6	4817.1	4754.9	4716.4
12°	4809.3	4801.1	4804.8	4790.9	4716.8	4671.0
12.5°	4762.2	4756.5	4775.3	4760.6	4678.8	4626.4
13°	4714.0	4711.9	4743.8	4729.9	4642.4	4583.1
13.5°	4666.1	4669.0	4709.1	4695.6	4602.7	4539.7
14°	4619.9	4625.6	4672.7	4659.6	4561.8	4493.9
14.5°	4573.3	4583.9	4635.4	4622.4	4519.3	4446.0
15°	4525.8	4539.7	4593.7	4582.3	4475.1	4397.8
15.5°	4478.8	4496.8	4550.8	4541.4	4427.2	4347.1
16°	4428.0	4451.0	4505.4	4496.0	4378.6	4295.1
16.5°	4378.1	4404.3	4459.1	4446.9	4328.6	4238.7
17°	4322.9	4354.8	4410.0	4396.1	4275.9	4184.7
17.5°	4269.3	4304.9	4356.9	4341.3	4221.5	4127.0
18°	4212.1	4252.2	4300.0	4283.7	4165.4	4069.3
18.5°	4155.2	4197.7	4243.2	4222.7	4105.3	4010.4
19°	4095.1	4140.5	4182.6	4158.9	4047.2	3951.9
19.5°	4035.8	4085.7	4121.7	4093.8	3987.5	3891.8
20°	3974.0	4026.4	4060.7	4030.0	3926.5	3831.6
20.5°	3914.3	3969.5	3994.4	3963.8	3864.8	3770.7
21°	3852.5	3908.5	3931.9	3896.7	3803.0	3709.7

TEST NUMBER: P776289

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3670.5	3729.4	3738.8	3691.3	3612.0	3524.0
23°	3607.1	3668.4	3671.3	3622.6	3547.3	3461.4
23.5°	3543.7	3605.0	3602.6	3551.8	3478.6	3397.2
24°	3482.3	3542.4	3535.1	3478.2	3412.4	3332.2
24.5°	3419.7	3478.6	3465.1	3406.2	3342.8	3268.4
25°	3354.7	3414.0	3392.7	3335.0	3277.0	3201.7
25.5°	3291.7	3349.4	3324.0	3264.7	3205.0	3135.8
26°	3228.7	3283.9	3256.1	3196.4	3138.3	3067.9
26.5°	3162.0	3218.9	3187.0	3126.4	3068.8	2996.3
27°	3094.9	3152.6	3119.1	3058.5	2998.4	2918.6
27.5°	3028.3	3084.7	3049.1	2989.4	2921.9	2839.7
28°	2961.2	3013.5	2978.3	2919.0	2852.8	2758.7
28.5°	2894.5	2939.5	2908.0	2847.0	2777.1	2674.8
29°	2819.6	2865.4	2836.4	2776.3	2699.0	2589.3
29.5°	2742.3	2788.5	2765.6	2702.2	2621.7	2503.4
30°	2660.9	2709.2	2691.2	2627.0	2541.9	2421.6
30.5°	2577.9	2628.2	2613.5	2549.7	2458.4	2341.4
31°	2501.0	2544.7	2537.0	2472.3	2378.3	2262.9
31.5°	2415.5	2460.5	2458.8	2395.4	2295.6	2186.8
32°	2326.7	2379.5	2381.9	2321.0	2217.1	2110.7
32.5°	2249.0	2299.7	2303.0	2245.7	2139.4	2040.0
33°	2168.4	2222.8	2229.0	2173.7	2062.5	1971.2
33.5°	2087.8	2144.3	2148.8	2101.3	1990.1	1901.3
34°	2011.7	2073.9	2075.1	2028.1	1920.1	1830.5
34.5°	1939.3	2003.2	2004.4	1956.5	1851.8	1759.4
35°	1869.4	1933.2	1930.8	1886.6	1783.9	1691.0
35.5°	1800.7	1864.5	1860.0	1815.8	1718.9	1624.4
36°	1732.8	1797.0	1792.1	1746.7	1653.4	1556.1
36.5°	1664.9	1730.7	1723.8	1675.9	1590.4	1492.2
37°	1598.2	1664.0	1654.6	1606.4	1527.4	1432.1
37.5°	1532.3	1598.2	1591.2	1540.9	1460.3	1372.4
38°	1467.3	1531.5	1524.1	1477.1	1399.8	1312.7
38.5°	1403.1	1467.7	1453.8	1414.9	1340.1	1252.5
39°	1339.7	1408.8	1394.9	1352.3	1279.9	1192.8
39.5°	1279.1	1349.5	1336.0	1290.2	1219.8	1135.5
40°	1220.2	1290.6	1277.5	1227.6	1160.1	1079.9
40.5°	1162.5	1231.7	1218.6	1165.4	1103.6	1024.7
41°	1110.2	1172.8	1159.7	1106.9	1048.0	969.5
41.5°	1053.7	1116.7	1101.2	1049.6	993.6	917.1
42°	1001.0	1061.9	1043.5	994.0	940.0	864.7
42.5°	949.0	1006.3	987.9	940.8	888.1	814.8
43°	901.2	951.9	932.2	888.1	836.1	766.2
43.5°	849.6	898.3	878.2	834.9	784.6	719.5



TEST NUMBER: P776289

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	710.1	744.9	726.5	688.0	637.3	586.2
45.5°	663.1	696.6	677.8	641.8	591.5	544.5
46°	620.1	650.0	631.2	596.4	547.7	503.5
46.5°	576.8	604.6	587.0	553.0	504.8	463.1
47°	535.9	560.4	542.8	510.9	463.9	423.8
47.5°	494.6	517.5	500.7	470.0	423.8	386.2
48°	456.1	476.6	459.0	430.3	387.0	351.8
48.5°	418.5	436.9	420.5	393.9	352.2	317.4
49°	384.5	399.6	383.7	357.1	318.2	285.1
49.5°	351.0	363.7	348.5	322.7	286.3	255.3
50°	317.0	328.5	312.5	289.2	257.3	226.6
50.5°	283.5	295.7	281.4	258.1	228.3	200.8
51°	254.4	265.1	251.2	229.5	201.7	176.3
51.5°	227.0	236.0	223.8	202.1	177.5	153.0
52°	200.4	209.0	196.3	175.9	153.8	135.0
52.5°	176.3	184.1	172.2	153.0	135.8	117.4
53°	154.2	159.9	148.9	135.0	117.4	99.8
53.5°	132.9	139.1	131.3	116.6	99.4	82.2
54°	112.9	121.5	113.7	98.6	81.0	64.6
54.5°	95.7	103.9	96.1	80.6	63.0	52.0
55°	79.4	86.3	78.5	62.6	51.1	40.9
55.5°	64.6	68.3	60.9	50.3	39.7	29.9
56°	54.8	55.6	49.1	39.7	29.0	20.5
56.5°	45.0	44.6	38.9	28.6	19.2	13.5
57°	35.2	33.5	27.8	19.6	13.1	11.9
57.5°	25.4	24.1	19.2	13.5	11.9	10.2
58°	15.5	16.8	13.9	11.9	10.2	8.6
58.5°	11.9	14.7	12.7	10.6	8.6	7.4
59°	10.2	13.1	11.0	9.0	7.4	6.5
59.5°	9.4	11.0	9.8	7.8	6.5	6.1
60°	8.6	9.0	8.2	7.0	6.1	5.7
60.5°	7.8	8.2	7.8	6.5	5.7	5.3
61°	7.4	7.8	7.0	6.1	5.3	4.9
61.5°	6.5	7.0	6.5	5.7	4.9	4.5
62°	6.1	6.5	6.1	5.3	4.5	4.1
62.5°	5.7	6.1	5.7	4.9	4.1	3.7
63°	5.3	5.7	5.3	4.5	4.1	3.7
63.5°	4.9	5.3	4.9	4.1	3.7	3.3
64°	4.5	4.9	4.5	3.7	3.3	3.3
64.5°	4.5	4.5	4.1	3.7	3.3	2.9
65°	4.1	4.5	4.1	3.3	2.9	2.9
65.5°	3.7	4.1	3.7	3.3	2.9	2.5
66°	3.7	3.7	3.3	2.9	2.5	2.5



TEST NUMBER: P776289

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	2.9	3.3	2.9	2.5	2.0	2.0
68°	2.9	2.9	2.5	2.0	2.0	1.6
68.5°	2.5	2.9	2.5	2.0	1.6	1.6
69°	2.5	2.5	2.5	2.0	1.6	1.6
69.5°	2.0	2.5	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: P776289  
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-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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Scaled Data Report





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

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21.5°	3648.8	3553.1	3545.7	3506.4	3467.2	3458.2	3478.6	3567.8	3672.9	3744.9	3740.4
22°	3587.4	3487.6	3478.6	3437.7	3400.1	3394.0	3416.0	3508.5	3611.2	3682.3	3676.6



44°	673.7	598.5	581.7	544.5	534.2	563.7	592.3	624.2	666.4	721.6	733.4
44.5°	628.7	557.1	542.0	504.4	493.7	526.5	555.1	583.7	621.4	675.8	688.0



66.5°	2.0	2.0	2.5	2.9	2.9	2.9	2.5	2.5	2.5	2.9	2.9
67°	2.0	2.0	2.5	2.5	2.9	2.5	2.5	2.5	2.5	2.5	2.9



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



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21.5°	3791.6	3849.6	3868.0	3829.2	3740.0	3648.8
22°	3729.8	3788.7	3802.6	3761.7	3677.8	3587.4



44°	801.8	846.3	825.9	784.6	733.4	673.7
44.5°	754.7	795.2	776.4	735.9	686.0	628.7

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66.5°	3.3	3.7	3.3	2.9	2.5	2.0
67°	3.3	3.3	2.9	2.5	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)