

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: P776579

Luminaire Tested: HCDJBS4050CSD-HCD42TRH-5000lm-5000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776579  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B050)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL54050CSD-HCD42TRH-5000lm-5000K  
Description: 4 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: 4874.9 lumens  
Efficiency: N/A  
Efficacy: 101.6 lumens/watt  
Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.92  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

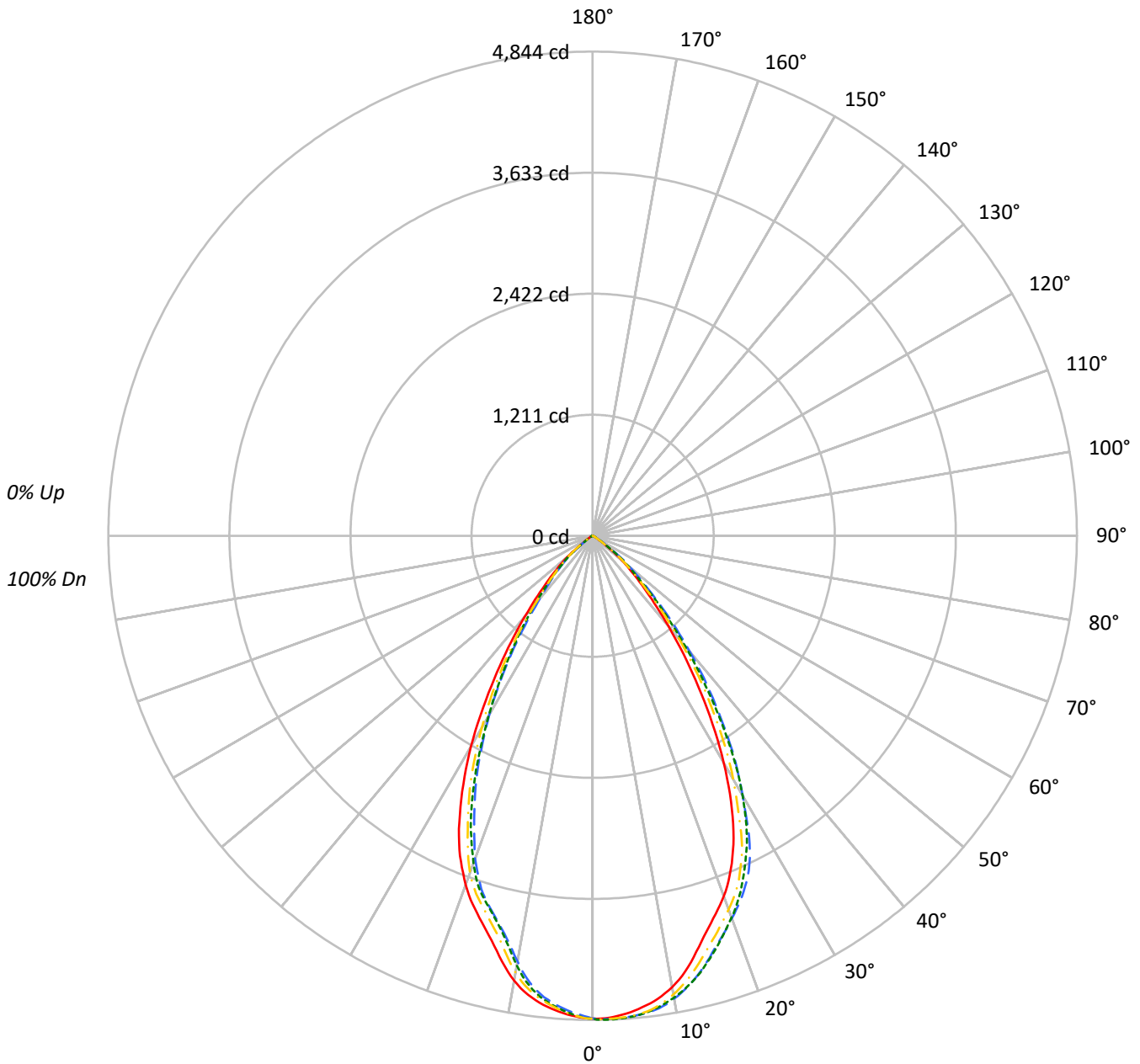
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-5000K

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	113	110	108	105	111	108	106	104	104	102	100	100	99	97	97	96	95	93																			
2	107	102	98	94	105	100	96	93	97	94	91	94	91	89	91	89	87	86																			
3	101	95	89	85	99	93	88	84	90	86	83	88	85	82	86	83	80	79																			
4	96	88	82	77	94	87	81	77	84	80	76	82	78	75	80	77	74	73																			
5	90	82	75	71	89	81	75	70	79	74	70	77	73	69	76	72	69	67																			
6	86	76	70	65	84	75	69	65	74	68	64	72	68	64	71	67	64	62																			
7	81	71	65	60	80	70	64	60	69	64	60	68	63	59	67	62	59	58																			
8	77	67	60	56	75	66	60	56	65	59	56	64	59	55	63	58	55	54																			
9	73	63	56	52	72	62	56	52	61	56	52	60	55	52	59	55	51	50																			
10	69	59	53	49	68	58	53	49	58	52	48	57	52	48	56	51	48	47																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	608006	608006	608006	608006
5°	602723	609406	599843	594688
10°	585884	599392	577565	557911
15°	547762	576087	533795	508245
20°	513930	544532	497551	466480
25°	463250	501659	438117	393168
30°	381215	435651	353357	302510
35°	283440	338164	256600	218130
40°	193643	235815	172992	148366
45°	124371	147331	110293	94400
50°	74869	85324	64218	51962
55°	28524	33746	20230	15754
60°	9640	11352	8054	6469
65°	4616	4913	3752	3037
70°	2134	2502	1803	1619
75°	1167	1410	924	924
80°	725	725	362	362
85°	0	722	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 163918 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	447.5	9.2
10°-20°	1166.7	23.9
20°-30°	1463.8	30.0
30°-40°	1117.8	22.9
40°-50°	532.7	10.9
50°-60°	127.5	2.6
60°-70°	15.8	0.3
70°-80°	2.8	0.1
80°-90°	0.3	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°	3078.1	63.1
0°-40°	4195.8	86.1
0°-60°	4856.0	99.6
0°-90°	4874.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4874.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	4831	4831	4831	4831	4831	
5°	4771	4824	4748	4707	4771	450
15°	4204	4422	4097	3901	4204	1182
25°	3336	3613	3155	2831	3336	1509
35°	1845	2201	1670	1420	1845	1153
45°	699	828	620	530	699	553
55°	130	154	92	72	130	140
65°	16	16	13	10	16	17
75°	2	3	2	2	2	3
85°	0	0	0	0	0	0
90°	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°	4831.2	4831.2	4831.2	4831.2	4831.2	4831.2	4831.2	4831.2	4831.2	4831.2	4831.2
0.5°	4832.6	4831.7	4831.2	4830.2	4840.4	4839.4	4837.5	4834.1	4828.7	4820.5	4816.6
1°	4832.1	4834.6	4836.0	4835.1	4842.8	4842.3	4838.4	4833.1	4824.4	4812.7	4807.9
1.5°	4829.2	4834.6	4837.5	4838.4	4843.8	4842.8	4838.0	4831.2	4820.0	4802.5	4795.3
2°	4824.4	4834.1	4838.4	4840.4	4843.3	4842.8	4837.0	4828.3	4812.2	4791.9	4782.2
2.5°	4818.6	4831.2	4837.5	4840.4	4841.8	4841.4	4835.1	4824.4	4804.5	4779.7	4769.1
3°	4810.8	4826.8	4835.1	4839.9	4840.4	4839.9	4832.1	4819.5	4795.3	4767.1	4754.5
3.5°	4802.1	4823.4	4832.1	4838.0	4837.5	4837.5	4829.2	4814.2	4785.6	4753.0	4739.0
4°	4792.4	4817.6	4828.3	4836.0	4834.1	4835.1	4826.3	4807.9	4773.9	4739.0	4722.5
4.5°	4781.7	4810.8	4824.9	4832.1	4830.2	4831.2	4822.0	4800.6	4762.3	4723.0	4705.5
5°	4771.0	4803.5	4821.0	4828.7	4823.9	4826.3	4816.6	4791.4	4748.2	4706.0	4685.6
5.5°	4758.4	4796.2	4815.6	4824.9	4818.1	4820.5	4809.8	4780.7	4734.1	4688.0	4664.2
6°	4744.3	4787.5	4810.3	4820.0	4808.8	4812.7	4801.1	4769.5	4718.1	4668.1	4641.4
6.5°	4729.3	4777.8	4803.5	4812.7	4799.6	4802.5	4790.4	4756.0	4700.6	4645.8	4614.3
7°	4713.7	4767.1	4795.3	4805.0	4788.5	4791.4	4778.3	4740.9	4681.2	4621.1	4584.7
7.5°	4697.2	4754.0	4785.6	4795.7	4774.9	4777.3	4762.3	4723.0	4660.4	4592.4	4551.7
8°	4677.8	4739.0	4773.4	4784.6	4760.3	4761.8	4745.8	4704.0	4637.6	4561.9	4513.3
8.5°	4657.5	4722.0	4758.4	4771.0	4743.8	4744.8	4726.4	4683.7	4611.4	4527.4	4473.1
9°	4634.6	4703.5	4741.9	4755.5	4727.8	4724.9	4706.0	4661.3	4583.7	4489.6	4427.0
9.5°	4610.9	4683.7	4723.4	4739.0	4708.9	4706.0	4683.2	4637.6	4552.6	4447.3	4378.9
10°	4584.7	4661.3	4703.1	4720.5	4690.4	4683.7	4659.4	4610.4	4519.6	4401.7	4325.1
10.5°	4555.5	4637.1	4681.2	4701.6	4670.1	4661.3	4633.7	4581.8	4483.2	4352.7	4274.1
11°	4525.0	4612.3	4657.0	4680.7	4648.7	4637.1	4606.0	4549.7	4442.0	4303.7	4221.2
11.5°	4491.5	4585.1	4633.2	4658.9	4626.9	4611.4	4575.4	4516.7	4399.3	4253.7	4168.8
12°	4455.6	4556.0	4606.5	4637.1	4602.1	4584.7	4544.4	4481.8	4354.7	4203.7	4121.7
12.5°	4417.3	4524.0	4577.9	4611.8	4576.4	4554.6	4511.9	4443.9	4309.5	4158.6	4078.1
13°	4375.5	4490.5	4547.8	4586.6	4550.2	4525.0	4476.5	4404.1	4263.4	4115.4	4037.3
13.5°	4332.3	4455.1	4515.8	4558.9	4521.6	4492.0	4440.5	4363.9	4219.3	4073.2	3999.9
14°	4290.1	4419.2	4483.2	4530.8	4491.0	4458.5	4403.7	4322.1	4175.6	4033.4	3962.6
14.5°	4247.9	4381.3	4449.8	4501.2	4456.6	4423.1	4365.8	4279.9	4135.8	3996.5	3925.7
15°	4204.2	4341.1	4415.3	4468.2	4421.6	4387.6	4327.5	4240.1	4097.0	3958.7	3889.3
15.5°	4163.5	4302.7	4379.9	4436.7	4388.1	4351.7	4289.6	4201.3	4059.6	3923.3	3855.3
16°	4123.7	4263.9	4341.1	4401.2	4352.7	4316.8	4255.2	4163.5	4021.8	3887.4	3820.4
16.5°	4087.8	4226.1	4305.2	4367.3	4319.2	4280.9	4220.7	4126.6	3985.9	3852.4	3784.5
17°	4050.4	4188.2	4271.7	4332.3	4283.3	4246.9	4186.8	4089.2	3950.0	3817.0	3746.6
17.5°	4014.0	4153.3	4238.2	4298.4	4247.4	4212.0	4151.3	4053.3	3914.5	3778.7	3706.4
18°	3978.1	4118.8	4204.7	4264.4	4211.5	4176.1	4115.9	4018.4	3879.6	3737.9	3653.0
18.5°	3943.6	4083.9	4172.7	4229.9	4173.7	4141.6	4081.5	3983.4	3841.7	3686.5	3599.6
19°	3909.7	4050.9	4140.7	4196.0	4137.7	4106.2	4047.5	3949.5	3801.5	3635.5	3546.2
19.5°	3874.3	4016.4	4106.7	4160.1	4100.9	4072.7	4013.5	3914.5	3758.8	3584.1	3492.8
20°	3837.4	3983.4	4073.7	4125.6	4065.9	4037.3	3979.1	3878.1	3715.1	3532.6	3435.6
20.5°	3798.1	3950.4	4041.2	4091.6	4029.0	4000.9	3943.2	3839.8	3665.6	3481.2	3370.1
21°	3754.9	3917.0	4008.2	4056.2	3988.3	3964.5	3907.3	3798.6	3616.1	3417.1	3297.8



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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°	3612.2	3803.4	3902.9	3946.1	3861.2	3838.8	3786.9	3659.8	3467.6	3216.3	3097.4
23°	3560.8	3762.2	3864.5	3903.9	3814.1	3796.1	3744.7	3608.3	3410.8	3154.1	3029.4
23.5°	3506.4	3718.5	3826.2	3862.1	3764.6	3746.6	3690.8	3556.9	3350.2	3093.0	2965.4
24°	3451.1	3670.4	3784.5	3818.0	3715.6	3694.2	3636.5	3505.5	3287.6	3030.4	2901.3
24.5°	3395.3	3620.0	3740.3	3769.0	3664.1	3641.3	3582.6	3456.9	3223.5	2970.7	2836.8
25°	3336.1	3566.6	3693.3	3720.9	3612.7	3588.9	3528.8	3397.3	3155.1	2908.6	2770.3
25.5°	3273.5	3510.8	3640.4	3667.5	3560.8	3536.0	3474.4	3336.1	3084.7	2842.6	2701.9
26°	3207.5	3452.1	3586.0	3613.2	3509.3	3483.6	3403.1	3271.6	3012.9	2774.7	2632.0
26.5°	3138.6	3390.0	3523.4	3558.4	3457.4	3421.5	3329.8	3202.2	2942.1	2703.3	2561.2
27°	3068.7	3325.9	3458.4	3502.6	3399.7	3357.5	3251.2	3127.9	2872.7	2627.6	2487.4
27.5°	2997.4	3258.0	3386.1	3446.7	3338.5	3292.0	3175.0	3054.7	2799.4	2552.4	2415.6
28°	2923.2	3186.7	3308.4	3383.7	3275.0	3224.0	3099.3	2977.0	2728.6	2476.7	2343.8
28.5°	2848.9	3109.5	3231.3	3320.6	3205.6	3152.7	3026.5	2895.5	2656.3	2402.0	2273.9
29°	2772.2	3029.9	3151.2	3255.1	3140.6	3076.5	2955.2	2815.4	2584.0	2326.8	2202.1
29.5°	2699.5	2948.9	3073.6	3186.7	3067.8	3001.8	2884.3	2737.8	2508.8	2255.5	2132.2
30°	2623.3	2868.3	2998.4	3113.9	2997.9	2922.7	2813.0	2657.2	2431.6	2185.6	2064.3
30.5°	2545.1	2787.8	2926.6	3038.2	2925.1	2842.6	2741.7	2579.1	2355.4	2114.7	1995.8
31°	2468.0	2710.1	2856.2	2962.5	2854.3	2766.9	2668.9	2499.5	2278.3	2045.8	1925.5
31.5°	2389.4	2632.0	2785.3	2880.5	2776.6	2689.8	2592.7	2422.9	2199.6	1975.0	1855.1
32°	2310.8	2555.8	2713.5	2802.8	2700.9	2616.5	2516.0	2345.2	2119.6	1902.2	1784.3
32.5°	2232.6	2478.7	2639.3	2722.7	2617.9	2540.8	2437.9	2268.6	2039.0	1828.9	1714.4
33°	2154.0	2402.5	2564.6	2644.6	2536.4	2465.1	2358.3	2192.9	1962.8	1755.6	1644.5
33.5°	2077.8	2324.8	2484.5	2567.5	2451.5	2390.8	2279.7	2117.6	1885.2	1681.9	1574.2
34°	1998.3	2246.7	2405.9	2490.8	2369.0	2315.1	2202.6	2042.4	1811.0	1607.2	1506.7
34.5°	1921.6	2167.6	2326.3	2413.6	2285.1	2237.5	2126.4	1968.2	1739.1	1537.3	1440.7
35°	1844.9	2090.5	2245.7	2337.0	2201.1	2159.4	2052.6	1897.3	1670.2	1467.4	1377.1
35.5°	1769.2	2014.3	2168.6	2259.8	2119.6	2080.8	1980.3	1826.5	1599.4	1400.9	1312.6
36°	1700.3	1940.0	2094.8	2182.2	2039.0	2003.6	1908.0	1756.1	1532.4	1334.4	1249.5
36.5°	1630.9	1868.2	2022.5	2102.1	1955.6	1926.0	1834.3	1688.2	1465.5	1271.8	1188.9
37°	1561.5	1796.9	1948.3	2027.9	1876.5	1848.3	1761.5	1620.3	1401.4	1211.7	1127.7
37.5°	1492.6	1718.8	1877.0	1948.3	1798.8	1773.6	1685.8	1554.7	1337.8	1152.5	1071.0
38°	1423.2	1654.7	1804.2	1872.1	1725.6	1700.8	1612.5	1486.8	1279.1	1094.7	1014.2
38.5°	1357.7	1590.2	1728.5	1793.0	1646.9	1627.1	1541.2	1420.3	1217.0	1038.0	960.8
39°	1296.1	1526.1	1657.1	1722.2	1576.6	1554.7	1471.3	1354.8	1160.7	984.6	911.3
39.5°	1236.4	1462.1	1585.8	1648.4	1506.2	1481.0	1403.3	1292.2	1105.4	934.1	866.7
40°	1178.7	1396.1	1514.0	1575.1	1435.4	1408.7	1335.9	1228.2	1053.0	887.0	823.5
40.5°	1120.4	1332.5	1442.7	1501.9	1364.5	1338.3	1272.3	1166.5	999.6	842.4	782.2
41°	1065.6	1267.0	1373.3	1428.6	1299.0	1269.9	1211.7	1108.3	950.1	801.6	745.3
41.5°	1013.2	1205.4	1309.2	1359.7	1232.1	1201.5	1151.0	1053.0	903.1	761.8	711.9
42°	962.3	1143.3	1245.6	1291.7	1170.9	1135.0	1089.9	997.7	857.9	726.9	677.9
42.5°	913.7	1084.5	1183.5	1225.7	1108.3	1072.4	1031.2	946.2	813.3	691.0	645.4
43°	868.1	1028.7	1123.8	1159.8	1048.6	1011.8	973.4	895.8	771.1	657.5	614.3
43.5°	822.0	974.4	1063.7	1096.7	990.4	955.0	917.1	847.7	731.3	625.0	583.3



TEST NUMBER: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	698.8	823.5	890.9	921.0	827.8	797.8	761.4	714.8	619.7	533.8	497.4
45.5°	660.9	777.4	837.1	868.6	778.3	751.2	716.7	674.0	585.7	505.1	470.2
46°	623.5	732.7	785.6	817.2	729.3	707.0	673.5	635.7	552.7	477.0	445.9
46.5°	588.6	692.5	741.0	770.1	684.7	664.8	633.7	598.8	521.2	450.3	421.7
47°	555.1	652.7	697.8	724.0	641.0	624.0	595.9	562.9	489.6	425.1	396.9
47.5°	523.1	614.8	656.1	680.8	601.7	586.2	561.0	528.9	461.5	400.3	372.7
48°	492.0	578.4	617.2	640.0	563.9	550.3	527.0	496.9	434.8	375.1	348.4
48.5°	461.5	544.0	581.3	600.3	527.5	515.8	495.0	466.3	408.6	350.4	321.2
49°	433.3	510.5	546.4	564.8	494.5	483.3	464.4	439.2	381.9	321.7	291.2
49.5°	408.6	478.9	513.4	528.4	462.4	456.1	437.7	412.0	355.2	290.7	260.6
50°	382.4	449.3	481.4	496.4	435.8	429.0	411.0	385.3	328.0	260.1	230.0
50.5°	357.6	421.7	451.3	462.9	409.1	401.3	383.8	358.1	296.0	229.5	202.8
51°	331.4	394.5	423.1	434.3	381.9	374.1	357.1	330.9	264.0	200.9	176.6
51.5°	302.3	368.8	396.5	406.6	355.2	347.0	330.0	299.9	232.9	175.2	153.3
52°	271.3	342.1	369.3	380.0	328.0	319.3	298.4	267.9	203.8	153.3	134.4
52.5°	241.2	313.0	342.1	354.7	298.4	288.7	265.9	235.8	177.6	133.9	117.9
53°	211.1	281.0	312.5	326.6	266.4	256.2	233.9	206.2	154.8	117.9	103.8
53.5°	183.9	249.4	280.0	297.0	235.8	224.7	204.8	179.1	135.4	103.8	91.7
54°	166.0	218.4	246.5	264.0	205.3	196.0	177.1	156.3	118.9	92.2	81.5
54.5°	148.0	190.7	215.5	232.9	177.6	169.8	153.3	136.4	104.8	81.5	72.8
55°	130.0	165.0	187.8	201.4	153.8	147.0	133.4	119.4	92.2	72.8	65.0
55.5°	112.1	148.5	164.5	175.7	133.0	127.6	116.9	104.3	82.0	65.0	58.2
56°	94.6	131.5	147.0	158.2	115.5	110.6	102.4	92.2	72.8	58.2	52.4
56.5°	83.5	114.5	130.0	140.7	100.9	97.5	90.3	81.5	65.0	52.4	47.1
57°	73.8	98.0	113.1	123.3	88.8	85.9	79.6	72.3	58.2	47.6	43.2
57.5°	66.0	86.9	96.1	106.3	78.1	75.7	70.8	64.5	52.4	43.7	39.8
58°	58.7	77.2	84.9	88.8	69.4	67.5	63.1	57.7	47.1	39.8	35.9
58.5°	52.9	68.4	75.2	78.1	61.6	60.2	56.3	51.4	43.2	35.9	32.5
59°	47.6	61.1	67.0	69.4	54.8	53.4	50.5	46.6	39.8	32.5	28.6
59.5°	42.7	54.8	59.7	61.6	49.0	48.0	46.6	42.7	35.9	28.6	26.2
60°	38.3	49.0	53.4	54.8	45.1	44.2	42.7	39.3	32.0	26.2	23.8
60.5°	34.9	44.2	48.0	49.0	41.2	40.3	38.8	35.4	28.6	23.8	21.4
61°	31.5	39.8	43.2	44.2	37.4	36.4	34.9	31.5	25.7	21.4	19.9
61.5°	28.6	35.9	38.8	39.8	33.5	32.5	31.1	28.1	23.3	19.9	18.0
62°	25.7	32.5	34.9	35.9	29.1	28.6	27.2	25.2	21.4	18.0	16.5
62.5°	23.8	29.6	32.0	32.5	26.7	26.2	24.7	23.3	19.4	16.5	15.0
63°	21.4	26.7	29.1	29.6	24.3	23.8	22.3	20.9	18.0	15.0	13.6
63.5°	19.4	24.3	26.2	26.7	21.8	21.4	20.4	18.9	16.0	13.6	12.6
64°	18.0	22.3	23.8	24.3	19.9	19.4	18.4	17.5	15.0	12.6	11.6
64.5°	16.5	20.4	21.8	21.8	18.0	18.0	17.0	16.0	13.6	11.6	10.7
65°	15.5	18.4	19.9	19.9	16.5	16.5	15.5	14.6	12.6	10.7	9.7
65.5°	14.1	17.0	18.0	18.4	15.0	15.0	14.1	13.1	11.6	9.7	8.7
66°	12.6	15.5	16.5	17.0	14.1	13.6	13.1	12.1	10.2	8.7	8.2





TEST NUMBER: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	9.7	11.6	12.6	12.6	10.7	10.7	9.7	9.2	7.8	6.8	6.3
68°	8.7	10.7	11.6	11.6	9.7	9.7	9.2	8.7	7.3	6.3	5.8
68.5°	7.8	9.7	10.7	10.7	8.7	8.7	8.2	7.8	6.8	5.8	5.3
69°	7.3	9.2	9.7	9.7	8.2	8.2	7.8	7.3	6.3	5.3	4.9
69.5°	6.8	8.2	8.7	9.2	7.8	7.3	6.8	6.8	5.3	4.9	4.4
70°	5.8	7.8	8.2	8.2	6.8	6.8	6.3	5.8	4.9	4.4	3.9
70.5°	5.3	6.8	7.3	7.8	6.3	6.3	5.8	5.3	4.9	3.9	3.9
71°	4.9	6.3	6.8	6.8	5.8	5.8	5.3	4.9	4.4	3.9	3.4
71.5°	4.4	5.8	6.3	6.3	5.3	5.3	4.9	4.9	3.9	3.4	3.4
72°	4.4	5.3	5.8	5.8	4.9	4.9	4.4	4.4	3.4	2.9	2.9
72.5°	3.9	4.9	5.3	5.3	4.4	4.4	4.4	3.9	3.4	2.9	2.4
73°	3.4	4.4	4.9	4.9	4.4	3.9	3.9	3.4	2.9	2.4	2.4
73.5°	3.4	3.9	4.4	4.4	3.9	3.9	3.4	3.4	2.4	2.4	2.4
74°	2.9	3.9	3.9	4.4	3.4	3.4	3.4	2.9	2.4	1.9	1.9
74.5°	2.4	3.4	3.9	3.9	3.4	2.9	2.9	2.9	2.4	1.9	1.9
75°	2.4	2.9	3.4	3.4	2.9	2.9	2.9	2.4	1.9	1.5	1.5
75.5°	1.9	2.9	2.9	3.4	2.9	2.4	2.4	2.4	1.9	1.5	1.5
76°	1.9	2.4	2.9	2.9	2.4	2.4	2.4	1.9	1.5	1.5	1.5
76.5°	1.9	2.4	2.4	2.9	2.4	2.4	1.9	1.9	1.5	1.0	1.0
77°	1.5	1.9	2.4	2.4	1.9	1.9	1.9	1.5	1.5	1.0	1.0
77.5°	1.5	1.9	1.9	2.4	1.9	1.9	1.5	1.5	1.0	1.0	1.0
78°	1.5	1.5	1.9	1.9	1.9	1.5	1.5	1.5	1.0	1.0	1.0
78.5°	1.0	1.5	1.9	1.9	1.5	1.5	1.5	1.0	1.0	1.0	1.0
79°	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	0.5	0.5
79.5°	1.0	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	0.5	0.5
80°	1.0	1.0	1.5	1.5	1.0	1.0	1.0	1.0	0.5	0.5	0.5
80.5°	0.5	1.0	1.0	1.5	1.0	1.0	1.0	1.0	0.5	0.5	0.5
81°	0.5	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5
81.5°	0.5	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5
82°	0.5	0.5	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.0	0.5
82.5°	0.5	0.5	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0
83°	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0
83.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0
84°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
84.5°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.5	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: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-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: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4831.2	4831.2	4831.2	4831.2	4831.2	4831.2
0.5°	4813.7	4830.7	4831.2	4830.7	4830.2	4832.6
1°	4802.5	4823.4	4824.4	4824.9	4825.3	4832.1
1.5°	4789.9	4814.2	4814.7	4816.6	4819.5	4829.2
2°	4776.3	4802.5	4804.5	4806.4	4810.8	4824.4
2.5°	4761.3	4789.9	4791.4	4794.8	4800.1	4818.6
3°	4744.8	4775.4	4777.8	4781.7	4789.0	4810.8
3.5°	4728.3	4760.3	4762.7	4767.6	4776.8	4802.1
4°	4709.9	4743.8	4746.3	4752.6	4763.2	4792.4
4.5°	4691.4	4726.4	4728.3	4736.1	4748.7	4781.7
5°	4669.1	4707.4	4710.8	4719.1	4734.1	4771.0
5.5°	4645.3	4687.1	4690.9	4701.1	4718.1	4758.4
6°	4619.6	4665.2	4670.1	4681.7	4700.6	4744.3
6.5°	4587.6	4640.5	4645.3	4660.4	4681.7	4729.3
7°	4555.1	4612.3	4619.6	4637.6	4661.8	4713.7
7.5°	4514.8	4582.2	4590.0	4612.8	4641.0	4697.2
8°	4475.0	4545.8	4558.5	4584.7	4616.7	4677.8
8.5°	4427.4	4507.0	4522.1	4553.1	4590.0	4657.5
9°	4378.4	4463.8	4481.8	4518.7	4561.9	4634.6
9.5°	4324.6	4416.8	4436.7	4480.3	4530.8	4610.9
10°	4270.7	4365.8	4389.1	4437.6	4496.8	4584.7
10.5°	4216.8	4311.5	4338.2	4391.5	4457.5	4555.5
11°	4164.4	4256.6	4285.7	4343.0	4416.3	4525.0
11.5°	4112.0	4201.3	4229.5	4291.6	4372.6	4491.5
12°	4070.3	4148.9	4178.5	4239.6	4325.1	4455.6
12.5°	4029.0	4100.4	4127.1	4187.7	4275.6	4417.3
13°	3990.2	4055.3	4082.9	4141.6	4228.5	4375.5
13.5°	3953.3	4013.5	4041.7	4096.0	4182.4	4332.3
14°	3915.5	3974.2	4002.4	4055.7	4137.7	4290.1
14.5°	3883.5	3938.3	3966.5	4017.9	4096.0	4247.9
15°	3847.1	3900.9	3930.1	3980.0	4056.2	4204.2
15.5°	3815.1	3866.5	3895.1	3943.2	4018.4	4163.5
16°	3782.5	3834.0	3859.7	3906.8	3980.0	4123.7
16.5°	3745.7	3800.5	3826.7	3872.3	3942.7	4087.8
17°	3706.4	3769.0	3792.7	3836.9	3909.2	4050.4
17.5°	3654.9	3733.5	3758.8	3802.0	3873.3	4014.0
18°	3604.0	3692.3	3719.0	3767.0	3838.3	3978.1
18.5°	3553.0	3646.2	3675.8	3726.7	3801.5	3943.6
19°	3502.1	3596.2	3630.7	3685.0	3763.1	3909.7
19.5°	3450.6	3541.4	3579.7	3636.0	3720.9	3874.3
20°	3388.5	3483.1	3524.4	3585.0	3676.3	3837.4
20.5°	3321.6	3423.0	3467.6	3529.2	3627.3	3798.1
21°	3255.6	3363.3	3405.5	3468.6	3574.4	3754.9

TEST NUMBER: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3052.2	3182.8	3207.5	3268.2	3394.3	3612.2
23°	2980.9	3118.7	3137.2	3198.8	3330.8	3560.8
23.5°	2914.9	3052.2	3067.3	3132.3	3264.8	3506.4
24°	2840.2	2980.4	2998.9	3064.9	3200.2	3451.1
24.5°	2772.2	2909.6	2926.6	2996.9	3133.8	3395.3
25°	2700.4	2831.4	2856.7	2931.9	3071.2	3336.1
25.5°	2630.1	2758.2	2786.8	2864.0	3006.6	3273.5
26°	2558.7	2683.9	2715.0	2797.0	2943.1	3207.5
26.5°	2489.3	2609.7	2646.1	2726.6	2877.5	3138.6
27°	2417.0	2531.1	2572.3	2655.8	2808.6	3068.7
27.5°	2347.2	2455.9	2500.0	2584.0	2739.2	2997.4
28°	2274.9	2379.7	2427.2	2505.8	2667.4	2923.2
28.5°	2203.0	2302.5	2355.9	2436.0	2593.7	2848.9
29°	2127.3	2228.3	2282.1	2361.7	2519.4	2772.2
29.5°	2052.1	2153.5	2210.8	2289.9	2440.8	2699.5
30°	1980.3	2081.7	2138.5	2220.0	2366.1	2623.3
30.5°	1905.6	2010.9	2063.8	2148.2	2288.4	2545.1
31°	1836.2	1942.5	1990.5	2077.8	2211.8	2468.0
31.5°	1766.8	1874.0	1916.7	2007.5	2135.6	2389.4
32°	1699.8	1807.6	1845.9	1937.1	2062.3	2310.8
32.5°	1634.8	1738.2	1775.5	1866.8	1990.0	2232.6
33°	1568.3	1674.1	1710.0	1794.5	1916.7	2154.0
33.5°	1505.7	1610.1	1644.0	1717.3	1844.0	2077.8
34°	1441.7	1546.0	1578.0	1650.8	1771.2	1998.3
34.5°	1381.0	1482.0	1512.0	1584.3	1699.4	1921.6
35°	1321.3	1419.8	1446.5	1517.9	1627.5	1844.9
35.5°	1262.1	1362.6	1383.9	1451.4	1555.7	1769.2
36°	1205.4	1305.3	1323.8	1385.9	1483.9	1700.3
36.5°	1151.5	1252.4	1264.1	1321.3	1412.6	1630.9
37°	1098.6	1196.6	1207.3	1256.8	1344.6	1561.5
37.5°	1048.6	1143.7	1151.0	1193.2	1280.1	1492.6
38°	999.1	1091.8	1097.6	1131.6	1217.0	1423.2
38.5°	951.1	1041.4	1045.7	1071.4	1158.8	1357.7
39°	906.5	995.3	995.3	1012.2	1102.0	1296.1
39.5°	860.4	946.7	948.2	957.9	1046.2	1236.4
40°	818.6	903.1	900.6	905.5	991.9	1178.7
40.5°	776.9	858.4	856.0	857.9	939.4	1120.4
41°	737.6	817.2	812.3	812.8	890.9	1065.6
41.5°	701.2	775.4	770.6	772.5	844.3	1013.2
42°	665.3	737.1	731.8	734.2	801.6	962.3
42.5°	631.8	699.2	694.4	698.8	759.4	913.7
43°	597.3	662.9	658.5	664.8	720.6	868.1
43.5°	566.3	627.9	624.5	633.3	683.7	822.0



TEST NUMBER: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	477.5	530.4	529.9	542.5	584.7	698.8
45.5°	451.3	499.8	500.3	514.9	554.2	660.9
46°	427.0	470.7	472.2	486.7	524.6	623.5
46.5°	402.8	443.5	445.5	460.0	495.9	588.6
47°	378.5	418.3	420.7	434.8	468.3	555.1
47.5°	353.7	394.5	396.5	410.5	441.1	523.1
48°	330.5	370.2	373.2	387.2	415.9	492.0
48.5°	301.8	347.4	350.8	364.4	392.1	461.5
49°	271.7	322.2	326.6	341.6	368.3	433.3
49.5°	241.2	295.0	300.4	317.4	344.5	408.6
50°	212.1	265.4	271.7	290.2	319.8	382.4
50.5°	185.4	234.9	242.6	261.1	291.2	357.6
51°	160.1	205.3	213.0	232.4	261.6	331.4
51.5°	139.8	179.1	185.9	203.8	232.4	302.3
52°	121.8	161.1	167.9	177.6	203.3	271.3
52.5°	107.2	143.6	149.5	160.1	177.1	241.2
53°	94.1	126.7	131.0	142.7	160.1	211.1
53.5°	83.5	109.2	113.1	125.7	142.7	183.9
54°	74.2	91.7	94.6	108.2	125.2	166.0
54.5°	66.5	80.6	83.5	90.7	107.7	148.0
55°	59.2	71.8	74.2	80.6	90.7	130.0
55.5°	53.4	64.1	66.0	71.3	80.1	112.1
56°	48.0	57.3	59.2	63.6	71.3	94.6
56.5°	44.2	51.4	52.9	56.8	63.6	83.5
57°	40.3	46.6	47.6	51.0	56.8	73.8
57.5°	36.4	41.7	42.7	45.6	51.0	66.0
58°	32.5	37.8	38.8	41.2	45.6	58.7
58.5°	29.1	34.0	34.9	37.4	41.2	52.9
59°	26.2	31.1	31.5	34.0	37.4	47.6
59.5°	23.8	28.1	28.6	30.6	33.5	42.7
60°	21.8	25.7	26.2	27.7	30.6	38.3
60.5°	19.9	23.3	23.8	25.2	27.7	34.9
61°	18.0	20.9	21.4	22.8	25.2	31.5
61.5°	16.5	19.4	19.9	20.9	22.8	28.6
62°	15.0	18.0	18.4	18.9	20.9	25.7
62.5°	13.6	16.5	17.0	17.5	18.9	23.8
63°	12.6	15.0	15.5	16.0	17.5	21.4
63.5°	11.6	13.6	14.1	14.6	16.0	19.4
64°	10.7	12.1	12.6	13.1	14.6	18.0
64.5°	9.7	11.2	11.6	12.1	13.1	16.5
65°	8.7	10.2	10.7	11.2	12.1	15.5
65.5°	8.2	9.7	9.7	10.2	11.2	14.1
66°	7.3	8.7	8.7	9.2	10.2	12.6



TEST NUMBER: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	5.8	6.8	6.8	7.3	7.8	9.7
68°	5.3	6.3	6.3	6.8	7.3	8.7
68.5°	4.9	5.8	5.8	6.3	6.8	7.8
69°	4.4	5.3	5.3	5.3	5.8	7.3
69.5°	3.9	4.9	4.9	5.3	5.3	6.8
70°	3.9	4.4	4.4	4.9	4.9	5.8
70.5°	3.4	3.9	3.9	4.4	4.4	5.3
71°	3.4	3.9	3.9	3.9	4.4	4.9
71.5°	2.9	3.4	3.4	3.4	3.9	4.4
72°	2.4	2.9	2.9	3.4	3.4	4.4
72.5°	2.4	2.9	2.9	2.9	3.4	3.9
73°	2.4	2.4	2.4	2.9	2.9	3.4
73.5°	1.9	2.4	2.4	2.4	2.4	3.4
74°	1.9	1.9	1.9	2.4	2.4	2.9
74.5°	1.5	1.9	1.9	1.9	1.9	2.4
75°	1.5	1.9	1.9	1.9	1.9	2.4
75.5°	1.5	1.5	1.5	1.9	1.9	1.9
76°	1.5	1.5	1.5	1.5	1.5	1.9
76.5°	1.0	1.5	1.5	1.5	1.5	1.9
77°	1.0	1.0	1.5	1.5	1.5	1.5
77.5°	1.0	1.0	1.0	1.0	1.0	1.5
78°	1.0	1.0	1.0	1.0	1.0	1.5
78.5°	1.0	1.0	1.0	1.0	1.0	1.0
79°	0.5	1.0	1.0	1.0	1.0	1.0
79.5°	0.5	0.5	0.5	0.5	0.5	1.0
80°	0.5	0.5	0.5	0.5	0.5	1.0
80.5°	0.5	0.5	0.5	0.5	0.5	0.5
81°	0.5	0.5	0.5	0.5	0.5	0.5
81.5°	0.5	0.5	0.5	0.5	0.5	0.5
82°	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.5	0.5	0.5	0.5	0.5
83°	0.0	0.5	0.5	0.5	0.0	0.5
83.5°	0.0	0.0	0.0	0.0	0.0	0.5
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: P776579

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-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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Scaled Data Report





21.5°	3709.3	3881.0	3974.7	4020.8	3948.5	3923.7	3868.9	3754.4	3566.6	3349.7	3229.4
22°	3662.2	3843.2	3938.8	3984.4	3904.8	3883.5	3829.1	3711.2	3517.1	3281.3	3163.4



44°	778.8	921.0	1003.5	1036.5	935.6	900.1	861.8	800.7	692.9	594.4	554.2
44.5°	738.1	871.0	946.7	977.8	881.2	847.3	810.9	757.5	655.6	563.4	525.5



66.5°	11.2	14.1	15.5	15.5	12.6	12.6	11.6	11.2	9.7	8.2	7.3
67°	10.2	12.6	14.1	14.1	11.6	11.2	10.7	10.2	8.7	7.3	6.8



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°	3188.6	3303.6	3341.4	3403.1	3517.6	3709.3
22°	3122.6	3242.9	3275.0	3334.7	3456.9	3662.2



44°	536.2	593.9	591.5	601.2	648.8	778.8
44.5°	506.6	561.4	560.0	572.1	616.8	738.1

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66.5°	6.8	7.8	8.2	8.7	9.2	11.2
67°	6.3	7.3	7.3	7.8	8.7	10.2

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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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(END OF REPORT)