

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P776577

Luminaire Tested: HCDJBS4050CSD-HCD42TRH-5000lm-3500K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776577  
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: HCDJBS4050CSD-HCD42TRH-5000lm-3500K  
Description: 4 INCH ROUND NARROW HAZE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4737.4 lumens  
Efficiency: N/A  
Efficacy: 98.7 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

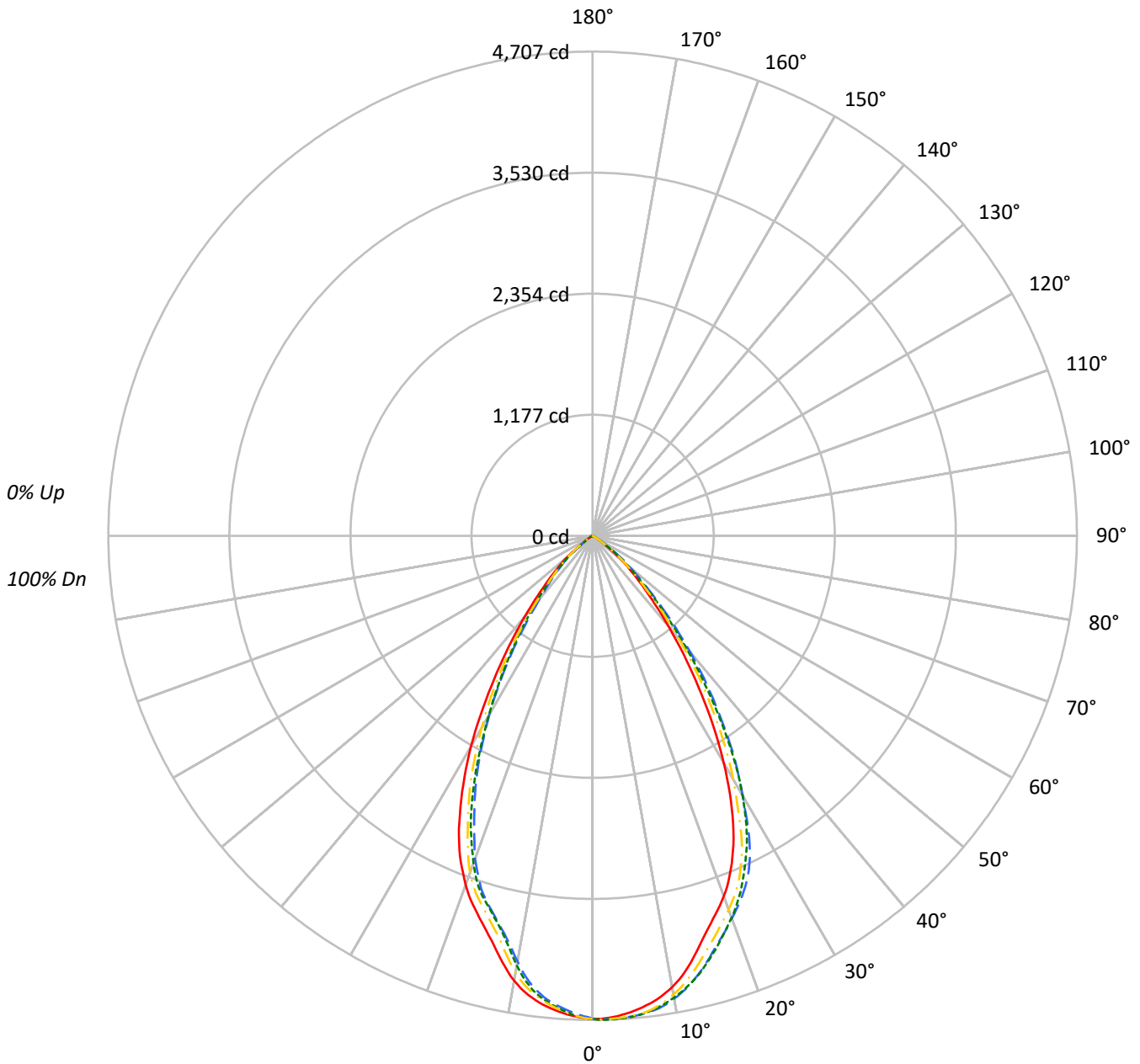
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

### 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	100	99	97	97	96	95	93
	1	113	110	108	105	111	108	106	104	104	102	100	100	99	97	97	96	95	93	93	91	89	87	86	86	85
	2	107	102	98	94	105	100	96	93	97	94	91	94	91	89	91	89	87	86	86	85	82	80	79	79	78
	3	101	95	89	85	99	93	88	84	90	86	83	88	85	82	86	83	80	79	79	77	75	74	73	73	72
	4	96	88	82	77	94	87	81	77	84	80	76	82	78	75	80	77	74	73	73	72	69	69	67	67	67
	5	90	82	75	71	89	81	75	70	79	74	70	77	73	69	76	72	69	67	67	66	64	64	62	62	62
	6	86	76	70	65	84	75	69	65	74	68	64	72	68	64	71	67	64	62	62	61	59	59	58	58	58
	7	81	71	65	60	80	70	64	60	69	64	60	68	63	59	67	62	59	58	58	57	55	55	54	54	54
	8	77	67	60	56	75	66	60	56	65	59	56	64	59	55	63	58	55	54	54	53	51	51	50	50	50
	9	73	63	56	52	72	62	56	52	61	56	52	60	55	52	59	55	51	50	50	49	48	48	47	47	47
	10	69	59	53	49	68	58	53	49	58	52	48	57	52	48	56	51	48	47	47	46	46	45	45	44	44

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

	0°	90°	180°	270°
0°	590852	590852	590852	590852
5°	585719	592212	582914	577912
10°	569348	582485	561272	542180
15°	532310	559840	518734	493914
20°	499426	529171	483515	453328
25°	450184	487509	425758	382087
30°	370461	423357	343388	293980
35°	275451	328624	249364	211985
40°	188172	229161	168113	144177
45°	120865	143184	107179	91730
50°	72755	82916	62417	50494
55°	27734	32802	19659	15315
60°	9388	11050	7828	6292
65°	4497	4765	3663	2948
70°	2097	2429	1729	1545
75°	1167	1361	924	924
80°	652	652	362	362
85°	0	722	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 159291 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	434.9	9.2
10°-20°	1133.8	23.9
20°-30°	1422.5	30.0
30°-40°	1086.3	22.9
40°-50°	517.7	10.9
50°-60°	123.9	2.6
60°-70°	15.4	0.3
70°-80°	2.7	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°	2991.2	63.1
0°-40°	4077.5	86.1
0°-60°	4719.0	99.6
0°-90°	4737.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4737.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	4695	4695	4695	4695	4695	
5°	4636	4688	4614	4575	4636	437
15°	4086	4297	3981	3791	4086	1149
25°	3242	3511	3066	2752	3242	1466
35°	1793	2139	1623	1380	1793	1120
45°	679	804	602	515	679	537
55°	126	150	90	70	126	136
65°	15	16	12	10	15	16
75°	2	3	2	2	2	3
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°	4694.9	4694.9	4694.9	4694.9	4694.9	4694.9	4694.9	4694.9	4694.9	4694.9	4694.9
0.5°	4696.3	4695.4	4694.9	4693.9	4703.8	4702.9	4701.0	4697.7	4692.5	4684.5	4680.7
1°	4695.8	4698.2	4699.6	4698.7	4706.2	4705.7	4702.0	4696.8	4688.3	4677.0	4672.2
1.5°	4693.0	4698.2	4701.0	4702.0	4707.1	4706.2	4701.5	4694.9	4684.0	4667.1	4660.0
2°	4688.3	4697.7	4702.0	4703.8	4706.7	4706.2	4700.5	4692.1	4676.5	4656.7	4647.3
2.5°	4682.6	4694.9	4701.0	4703.8	4705.3	4704.8	4698.7	4688.3	4668.9	4644.9	4634.5
3°	4675.1	4690.6	4698.7	4703.4	4703.8	4703.4	4695.8	4683.6	4660.0	4632.6	4620.4
3.5°	4666.6	4687.3	4695.8	4701.5	4701.0	4701.0	4693.0	4678.4	4650.6	4619.0	4605.3
4°	4657.2	4681.7	4692.1	4699.6	4697.7	4698.7	4690.2	4672.2	4639.2	4605.3	4589.3
4.5°	4646.8	4675.1	4688.8	4695.8	4693.9	4694.9	4685.9	4665.2	4627.9	4589.7	4572.7
5°	4636.4	4668.0	4685.0	4692.5	4687.8	4690.2	4680.7	4656.2	4614.2	4573.2	4553.4
5.5°	4624.1	4660.9	4679.8	4688.8	4682.2	4684.5	4674.1	4645.8	4600.6	4555.8	4532.7
6°	4610.5	4652.4	4674.6	4684.0	4673.2	4677.0	4665.6	4635.0	4585.0	4536.4	4510.5
6.5°	4595.9	4643.0	4668.0	4677.0	4664.2	4667.1	4655.3	4621.8	4568.0	4514.7	4484.1
7°	4580.8	4632.6	4660.0	4669.4	4653.4	4656.2	4643.5	4607.2	4549.2	4490.7	4455.3
7.5°	4564.7	4619.9	4650.6	4660.5	4640.2	4642.5	4627.9	4589.7	4528.9	4462.9	4423.3
8°	4545.9	4605.3	4638.8	4649.6	4626.0	4627.4	4611.9	4571.3	4506.7	4433.2	4386.0
8.5°	4526.1	4588.8	4624.1	4636.4	4610.0	4610.9	4593.0	4551.5	4481.3	4399.7	4346.9
9°	4503.9	4570.9	4608.1	4621.3	4594.4	4591.6	4573.2	4529.8	4454.4	4362.9	4302.1
9.5°	4480.8	4551.5	4590.2	4605.3	4576.0	4573.2	4551.1	4506.7	4424.2	4321.9	4255.4
10°	4455.3	4529.8	4570.4	4587.4	4558.1	4551.5	4527.9	4480.3	4392.1	4277.5	4203.0
10.5°	4427.0	4506.3	4549.2	4569.0	4538.3	4529.8	4503.0	4452.5	4356.8	4229.9	4153.5
11°	4397.3	4482.2	4525.6	4548.7	4517.6	4506.3	4476.1	4421.4	4316.7	4182.3	4102.1
11.5°	4364.8	4455.8	4502.5	4527.5	4496.4	4481.3	4446.4	4389.3	4275.2	4133.7	4051.2
12°	4329.9	4427.5	4476.5	4506.3	4472.3	4455.3	4416.2	4355.4	4231.8	4085.2	4005.5
12.5°	4292.6	4396.4	4448.7	4481.7	4447.3	4426.1	4384.6	4318.6	4188.0	4041.3	3963.0
13°	4252.1	4363.8	4419.5	4457.2	4421.8	4397.3	4350.2	4279.9	4143.2	3999.3	3923.4
13.5°	4210.1	4329.4	4388.4	4430.3	4394.0	4365.3	4315.3	4240.8	4100.2	3958.3	3887.1
14°	4169.1	4294.5	4356.8	4403.0	4364.3	4332.7	4279.4	4200.2	4057.8	3919.6	3850.8
14.5°	4128.1	4257.7	4324.2	4374.2	4330.8	4298.3	4242.7	4159.2	4019.1	3883.8	3814.9
15°	4085.6	4218.6	4290.8	4342.2	4296.9	4263.9	4205.4	4120.5	3981.4	3847.0	3779.6
15.5°	4046.0	4181.4	4256.3	4311.5	4264.3	4229.0	4168.6	4082.8	3945.1	3812.6	3746.6
16°	4007.3	4143.6	4218.6	4277.1	4229.9	4195.0	4135.1	4046.0	3908.3	3777.7	3712.6
16.5°	3972.4	4106.8	4183.7	4244.1	4197.4	4160.1	4101.7	4010.2	3873.4	3743.7	3677.7
17°	3936.1	4070.1	4151.2	4210.1	4162.5	4127.1	4068.6	3973.9	3838.5	3709.3	3640.9
17.5°	3900.8	4036.1	4118.6	4177.1	4127.6	4093.2	4034.2	3939.0	3804.1	3672.1	3601.8
18°	3865.9	4002.6	4086.1	4144.1	4092.7	4058.3	3999.8	3905.0	3770.1	3632.5	3549.9
18.5°	3832.4	3968.7	4055.0	4110.6	4055.9	4024.8	3966.3	3871.1	3733.4	3582.5	3498.1
19°	3799.4	3936.6	4023.8	4077.6	4021.0	3990.4	3933.3	3838.1	3694.2	3533.0	3446.2
19.5°	3765.0	3903.1	3990.8	4042.7	3985.2	3957.8	3900.3	3804.1	3652.7	3483.0	3394.3
20°	3729.1	3871.1	3958.8	4009.2	3951.2	3923.4	3866.8	3768.7	3610.3	3433.0	3338.7
20.5°	3690.9	3839.0	3927.2	3976.2	3915.4	3888.0	3831.9	3731.5	3562.2	3383.0	3275.0
21°	3649.0	3806.5	3895.1	3941.8	3875.8	3852.7	3797.0	3691.4	3514.1	3320.7	3204.7



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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°	3510.3	3696.1	3792.8	3834.8	3752.2	3730.5	3680.1	3556.5	3369.8	3125.5	3010.0
23°	3460.3	3656.0	3755.5	3793.7	3706.5	3689.0	3639.1	3506.5	3314.6	3065.2	2944.0
23.5°	3407.5	3613.6	3718.3	3753.2	3658.4	3640.9	3586.7	3456.6	3255.7	3005.7	2881.7
24°	3353.8	3566.9	3677.7	3710.3	3610.8	3590.0	3533.9	3406.6	3194.8	2944.9	2819.5
24.5°	3299.5	3517.9	3634.8	3662.6	3560.8	3538.6	3481.6	3359.4	3132.6	2886.9	2756.8
25°	3242.0	3466.0	3589.1	3615.9	3510.8	3487.7	3429.2	3301.4	3066.1	2826.5	2692.2
25.5°	3181.2	3411.8	3537.7	3564.1	3460.3	3436.3	3376.4	3242.0	2997.7	2762.4	2625.7
26°	3117.0	3354.7	3484.9	3511.3	3410.3	3385.4	3307.1	3179.3	2927.9	2696.4	2557.8
26.5°	3050.1	3294.3	3424.0	3458.0	3359.9	3325.0	3235.9	3111.8	2859.1	2627.1	2488.9
27°	2982.2	3232.1	3360.8	3403.7	3303.8	3262.7	3159.5	3039.7	2791.7	2553.5	2417.2
27.5°	2912.8	3166.1	3290.6	3349.5	3244.4	3199.1	3085.4	2968.5	2720.4	2480.4	2347.4
28°	2840.7	3096.8	3215.1	3288.2	3182.6	3133.1	3011.9	2893.0	2651.6	2406.9	2277.6
28.5°	2768.5	3021.8	3140.1	3226.9	3115.1	3063.7	2941.1	2813.8	2581.3	2334.2	2209.7
29°	2694.0	2944.4	3062.3	3163.2	3052.0	2989.7	2871.8	2736.0	2511.1	2261.1	2140.0
29.5°	2623.3	2865.7	2986.9	3096.8	2981.2	2917.1	2803.0	2660.6	2438.0	2191.8	2072.0
30°	2549.3	2787.4	2913.8	3026.0	2913.3	2840.2	2733.7	2582.3	2363.0	2123.9	2006.0
30.5°	2473.3	2709.1	2844.0	2952.5	2842.6	2762.4	2664.3	2506.4	2289.0	2055.1	1939.5
31°	2398.4	2633.7	2775.6	2878.9	2773.7	2688.9	2593.6	2429.0	2214.0	1988.1	1871.2
31.5°	2322.0	2557.8	2706.8	2799.2	2698.3	2613.9	2519.6	2354.5	2137.6	1919.3	1802.8
32°	2245.6	2483.7	2637.0	2723.7	2624.7	2542.7	2445.1	2279.1	2059.8	1848.5	1733.9
32.5°	2169.7	2408.7	2564.8	2645.9	2544.1	2469.1	2369.1	2204.6	1981.5	1777.3	1666.0
33°	2093.3	2334.7	2492.2	2570.0	2464.9	2395.5	2291.8	2131.0	1907.5	1706.1	1598.1
33.5°	2019.2	2259.3	2414.4	2495.0	2382.3	2323.4	2215.4	2057.9	1832.0	1634.4	1529.8
34°	1941.9	2183.3	2338.0	2420.5	2302.2	2249.8	2140.4	1984.8	1759.9	1561.8	1464.2
34.5°	1867.4	2106.5	2260.7	2345.6	2220.6	2174.4	2066.4	1912.7	1690.1	1493.9	1400.1
35°	1792.9	2031.5	2182.4	2271.0	2139.0	2098.5	1994.7	1843.8	1623.1	1426.0	1338.3
35.5°	1719.3	1957.5	2107.4	2196.1	2059.8	2022.1	1924.4	1775.0	1554.3	1361.4	1275.6
36°	1652.4	1885.3	2035.7	2120.6	1981.5	1947.1	1854.2	1706.6	1489.2	1296.8	1214.3
36.5°	1584.9	1815.5	1965.5	2042.8	1900.4	1871.6	1782.5	1640.6	1424.1	1236.0	1155.3
37°	1517.5	1746.2	1893.3	1970.7	1823.5	1796.2	1711.8	1574.5	1361.9	1177.5	1095.9
37.5°	1450.5	1670.3	1824.0	1893.3	1748.1	1723.6	1638.2	1510.9	1300.1	1120.0	1040.7
38°	1383.1	1608.0	1753.3	1819.3	1676.9	1652.8	1567.0	1444.9	1243.0	1063.8	985.6
38.5°	1319.4	1545.3	1679.7	1742.4	1600.5	1581.2	1497.7	1380.3	1182.7	1008.7	933.7
39°	1259.5	1483.1	1610.4	1673.6	1532.1	1510.9	1429.8	1316.6	1128.0	956.8	885.6
39.5°	1201.5	1420.8	1541.1	1601.9	1463.7	1439.2	1363.8	1255.8	1074.2	907.8	842.2
40°	1145.4	1356.7	1471.3	1530.7	1394.9	1368.9	1298.2	1193.5	1023.3	862.0	800.2
40.5°	1088.8	1294.9	1402.0	1459.5	1326.0	1300.6	1236.4	1133.6	971.4	818.6	760.2
41°	1035.6	1231.3	1334.5	1388.3	1262.4	1234.1	1177.5	1077.1	923.3	779.0	724.3
41.5°	984.6	1171.4	1272.3	1321.3	1197.3	1167.6	1118.5	1023.3	877.6	740.4	691.8
42°	935.1	1111.0	1210.5	1255.3	1137.9	1103.0	1059.1	969.5	833.7	706.4	658.8
42.5°	888.0	1053.9	1150.1	1191.2	1077.1	1042.2	1002.1	919.5	790.3	671.5	627.2
43°	843.6	999.7	1092.1	1127.0	1019.0	983.2	946.0	870.5	749.3	639.0	597.0
43.5°	798.8	946.9	1033.7	1065.7	962.5	928.0	891.3	823.8	710.6	607.4	566.8

TEST NUMBER: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	679.1	800.2	865.8	895.0	804.5	775.2	739.9	694.6	602.2	518.7	483.4
45.5°	642.3	755.4	813.4	844.1	756.4	730.0	696.5	655.0	569.2	490.9	456.9
46°	606.0	712.1	763.5	794.1	708.8	687.1	654.5	617.7	537.1	463.5	433.4
46.5°	572.0	672.9	720.1	748.4	665.4	646.0	615.9	581.9	506.5	437.6	409.8
47°	539.5	634.3	678.1	703.6	622.9	606.4	579.1	547.0	475.8	413.1	385.7
47.5°	508.3	597.5	637.6	661.6	584.7	569.6	545.1	514.0	448.5	389.0	362.2
48°	478.2	562.1	599.8	622.0	548.0	534.8	512.1	482.9	422.5	364.5	338.6
48.5°	448.5	528.6	564.9	583.3	512.6	501.3	481.0	453.2	397.1	340.5	312.2
49°	421.1	496.1	531.0	548.9	480.5	469.7	451.3	426.8	371.1	312.6	282.9
49.5°	397.1	465.4	498.9	513.5	449.4	443.3	425.3	400.4	345.2	282.5	253.2
50°	371.6	436.7	467.8	482.4	423.5	416.9	399.4	374.4	318.8	252.8	223.5
50.5°	347.5	409.8	438.6	449.9	397.5	390.0	373.0	348.0	287.7	223.0	197.1
51°	322.1	383.4	411.2	422.0	371.1	363.6	347.1	321.6	256.5	195.2	171.6
51.5°	293.8	358.4	385.3	395.2	345.2	337.2	320.7	291.4	226.4	170.2	149.0
52°	263.6	332.5	358.9	369.2	318.8	310.3	290.0	260.3	198.1	149.0	130.6
52.5°	234.4	304.2	332.5	344.7	290.0	280.6	258.4	229.2	172.6	130.2	114.6
53°	205.1	273.0	303.7	317.4	258.9	249.0	227.3	200.4	150.4	114.6	100.9
53.5°	178.7	242.4	272.1	288.6	229.2	218.3	199.0	174.0	131.6	100.9	89.1
54°	161.3	212.2	239.6	256.5	199.5	190.5	172.1	151.8	115.5	89.6	79.2
54.5°	143.8	185.3	209.4	226.4	172.6	165.0	149.0	132.5	101.9	79.2	70.7
55°	126.4	160.3	182.5	195.7	149.5	142.9	129.7	116.0	89.6	70.7	63.2
55.5°	108.9	144.3	159.9	170.7	129.2	124.0	113.6	101.4	79.7	63.2	56.6
56°	92.0	127.8	142.9	153.7	112.2	107.5	99.5	89.6	70.7	56.6	50.9
56.5°	81.1	111.3	126.4	136.8	98.1	94.8	87.7	79.2	63.2	50.9	45.7
57°	71.7	95.3	109.9	119.8	86.3	83.5	77.3	70.3	56.6	46.2	42.0
57.5°	64.1	84.4	93.4	103.3	75.9	73.6	68.8	62.7	50.9	42.4	38.7
58°	57.1	75.0	82.5	86.3	67.4	65.5	61.3	56.1	45.7	38.7	34.9
58.5°	51.4	66.5	73.1	75.9	59.9	58.5	54.7	50.0	42.0	34.9	31.6
59°	46.2	59.4	65.1	67.4	53.3	51.9	49.0	45.3	38.7	31.6	27.8
59.5°	41.5	53.3	58.0	59.9	47.6	46.7	45.3	41.5	34.9	27.8	25.5
60°	37.3	47.6	51.9	53.3	43.9	42.9	41.5	38.2	31.1	25.5	23.1
60.5°	34.0	42.9	46.7	47.6	40.1	39.1	37.7	34.4	27.8	23.1	20.7
61°	30.7	38.7	42.0	42.9	36.3	35.4	34.0	30.7	25.0	20.7	19.3
61.5°	27.8	34.9	37.7	38.7	32.5	31.6	30.2	27.4	22.6	19.3	17.4
62°	25.0	31.6	34.0	34.9	28.3	27.8	26.4	24.5	20.7	17.4	16.0
62.5°	23.1	28.8	31.1	31.6	25.9	25.5	24.0	22.6	18.9	16.0	14.6
63°	20.7	25.9	28.3	28.8	23.6	23.1	21.7	20.3	17.4	14.6	13.2
63.5°	18.9	23.6	25.5	25.9	21.2	20.7	19.8	18.4	15.6	13.2	12.3
64°	17.4	21.7	23.1	23.6	19.3	18.9	17.9	17.0	14.6	12.3	11.3
64.5°	16.0	19.8	21.2	21.2	17.4	17.4	16.5	15.6	13.2	11.3	10.4
65°	15.1	17.9	19.3	19.3	16.0	16.0	15.1	14.1	12.3	10.4	9.4
65.5°	13.7	16.5	17.4	17.9	14.6	14.6	13.7	12.7	11.3	9.4	8.5
66°	12.3	15.1	16.0	16.5	13.7	13.2	12.7	11.8	9.9	8.5	8.0





TEST NUMBER: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	9.4	11.3	12.3	12.3	10.4	10.4	9.4	9.0	7.5	6.6	6.1
68°	8.5	10.4	11.3	11.3	9.4	9.4	9.0	8.5	7.1	6.1	5.7
68.5°	7.5	9.4	10.4	10.4	8.5	8.5	8.0	7.5	6.6	5.7	5.2
69°	7.1	9.0	9.4	9.4	8.0	8.0	7.5	7.1	6.1	5.2	4.7
69.5°	6.6	8.0	8.5	9.0	7.5	7.1	6.6	6.6	5.2	4.7	4.2
70°	5.7	7.5	8.0	8.0	6.6	6.6	6.1	5.7	4.7	4.2	3.8
70.5°	5.2	6.6	7.1	7.5	6.1	6.1	5.7	5.2	4.7	3.8	3.8
71°	4.7	6.1	6.6	6.6	5.7	5.7	5.2	4.7	4.2	3.8	3.3
71.5°	4.2	5.7	6.1	6.1	5.2	5.2	4.7	4.7	3.8	3.3	3.3
72°	4.2	5.2	5.7	5.7	4.7	4.7	4.2	4.2	3.3	2.8	2.8
72.5°	3.8	4.7	5.2	5.2	4.2	4.2	4.2	3.8	3.3	2.8	2.4
73°	3.3	4.2	4.7	4.7	4.2	3.8	3.8	3.3	2.8	2.4	2.4
73.5°	3.3	3.8	4.2	4.2	3.8	3.8	3.3	3.3	2.4	2.4	2.4
74°	2.8	3.8	3.8	4.2	3.3	3.3	3.3	2.8	2.4	1.9	1.9
74.5°	2.4	3.3	3.8	3.8	3.3	2.8	2.8	2.8	2.4	1.9	1.9
75°	2.4	2.8	3.3	3.3	2.8	2.8	2.8	2.4	1.9	1.4	1.4
75.5°	1.9	2.8	2.8	3.3	2.8	2.4	2.4	2.4	1.9	1.4	1.4
76°	1.9	2.4	2.8	2.8	2.4	2.4	2.4	1.9	1.4	1.4	1.4
76.5°	1.9	2.4	2.4	2.8	2.4	2.4	1.9	1.9	1.4	0.9	0.9
77°	1.4	1.9	2.4	2.4	1.9	1.9	1.9	1.4	1.4	0.9	0.9
77.5°	1.4	1.9	1.9	2.4	1.9	1.9	1.4	1.4	0.9	0.9	0.9
78°	1.4	1.4	1.9	1.9	1.9	1.4	1.4	1.4	0.9	0.9	0.9
78.5°	0.9	1.4	1.9	1.9	1.4	1.4	1.4	0.9	0.9	0.9	0.9
79°	0.9	1.4	1.4	1.4	1.4	1.4	1.4	0.9	0.9	0.5	0.5
79.5°	0.9	1.4	1.4	1.4	1.4	1.4	0.9	0.9	0.9	0.5	0.5
80°	0.9	0.9	1.4	1.4	0.9	0.9	0.9	0.9	0.5	0.5	0.5
80.5°	0.5	0.9	0.9	1.4	0.9	0.9	0.9	0.9	0.5	0.5	0.5
81°	0.5	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5
81.5°	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5
82°	0.5	0.5	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.0	0.5
82.5°	0.5	0.5	0.9	0.9	0.5	0.5	0.5	0.5	0.5	0.0	0.0
83°	0.5	0.5	0.5	0.9	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: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

**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: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4694.9	4694.9	4694.9	4694.9	4694.9	4694.9
0.5°	4677.9	4694.4	4694.9	4694.4	4693.9	4696.3
1°	4667.1	4687.3	4688.3	4688.8	4689.2	4695.8
1.5°	4654.8	4678.4	4678.8	4680.7	4683.6	4693.0
2°	4641.6	4667.1	4668.9	4670.8	4675.1	4688.3
2.5°	4627.0	4654.8	4656.2	4659.5	4664.7	4682.6
3°	4610.9	4640.7	4643.0	4646.8	4653.9	4675.1
3.5°	4594.9	4626.0	4628.4	4633.1	4642.1	4666.6
4°	4577.0	4610.0	4612.4	4618.5	4628.9	4657.2
4.5°	4559.1	4593.0	4594.9	4602.5	4614.7	4646.8
5°	4537.4	4574.6	4577.9	4586.0	4600.6	4636.4
5.5°	4514.3	4554.8	4558.6	4568.5	4585.0	4624.1
6°	4489.3	4533.6	4538.3	4549.6	4568.0	4610.5
6.5°	4458.2	4509.6	4514.3	4528.9	4549.6	4595.9
7°	4426.6	4482.2	4489.3	4506.7	4530.3	4580.8
7.5°	4387.4	4453.0	4460.5	4482.7	4510.0	4564.7
8°	4348.8	4417.6	4429.9	4455.3	4486.5	4545.9
8.5°	4302.5	4379.9	4394.5	4424.7	4460.5	4526.1
9°	4254.9	4337.9	4355.4	4391.2	4433.2	4503.9
9.5°	4202.6	4292.2	4311.5	4353.9	4403.0	4480.8
10°	4150.2	4242.7	4265.3	4312.4	4370.0	4455.3
10.5°	4097.9	4189.8	4215.8	4267.6	4331.8	4427.0
11°	4047.0	4136.6	4164.8	4220.5	4291.7	4397.3
11.5°	3996.0	4082.8	4110.1	4170.5	4249.3	4364.8
12°	3955.5	4031.9	4060.6	4120.0	4203.0	4329.9
12.5°	3915.4	3984.7	4010.6	4069.6	4154.9	4292.6
13°	3877.7	3940.9	3967.7	4024.8	4109.2	4252.1
13.5°	3841.8	3900.3	3927.6	3980.5	4064.4	4210.1
14°	3805.0	3862.1	3889.5	3941.3	4021.0	4169.1
14.5°	3773.9	3827.2	3854.6	3904.5	3980.5	4128.1
15°	3738.6	3790.9	3819.2	3867.8	3941.8	4085.6
15.5°	3707.4	3757.4	3785.2	3831.9	3905.0	4046.0
16°	3675.8	3725.8	3750.8	3796.6	3867.8	4007.3
16.5°	3640.0	3693.3	3718.7	3763.1	3831.5	3972.4
17°	3601.8	3662.6	3685.7	3728.6	3798.9	3936.1
17.5°	3551.8	3628.2	3652.7	3694.7	3764.0	3900.8
18°	3502.3	3588.1	3614.1	3660.7	3730.1	3865.9
18.5°	3452.8	3543.3	3572.1	3621.6	3694.2	3832.4
19°	3403.3	3494.8	3528.2	3581.1	3657.0	3799.4
19.5°	3353.3	3441.5	3478.7	3533.4	3615.9	3765.0
20°	3292.9	3384.9	3425.0	3483.9	3572.6	3729.1
20.5°	3227.8	3326.4	3369.8	3429.7	3524.9	3690.9
21°	3163.7	3268.4	3309.4	3370.7	3473.5	3649.0

TEST NUMBER: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2966.1	3093.0	3117.0	3176.0	3298.6	3510.3
23°	2896.8	3030.7	3048.7	3108.5	3236.8	3460.3
23.5°	2832.7	2966.1	2980.8	3043.9	3172.7	3407.5
24°	2760.1	2896.3	2914.3	2978.4	3110.0	3353.8
24.5°	2694.0	2827.5	2844.0	2912.4	3045.4	3299.5
25°	2624.2	2751.6	2776.1	2849.2	2984.5	3242.0
25.5°	2555.9	2680.4	2708.2	2783.2	2921.8	3181.2
26°	2486.6	2608.2	2638.4	2718.1	2860.0	3117.0
26.5°	2419.1	2536.1	2571.4	2649.7	2796.4	3050.1
27°	2348.9	2459.7	2499.8	2580.9	2729.4	2982.2
27.5°	2281.0	2386.6	2429.5	2511.1	2662.0	2912.8
28°	2210.7	2312.5	2358.8	2435.2	2592.2	2840.7
28.5°	2140.9	2237.6	2289.4	2367.2	2520.5	2768.5
29°	2067.3	2165.4	2217.8	2295.1	2448.4	2694.0
29.5°	1994.2	2092.8	2148.4	2225.3	2372.0	2623.3
30°	1924.4	2023.0	2078.2	2157.4	2299.3	2549.3
30.5°	1851.8	1954.2	2005.6	2087.6	2223.9	2473.3
31°	1784.4	1887.7	1934.4	2019.2	2149.4	2398.4
31.5°	1717.0	1821.2	1862.7	1950.9	2075.3	2322.0
32°	1651.9	1756.6	1793.8	1882.5	2004.1	2245.6
32.5°	1588.7	1689.1	1725.4	1814.1	1933.9	2169.7
33°	1524.1	1626.9	1661.8	1743.8	1862.7	2093.3
33.5°	1463.3	1564.6	1597.7	1668.9	1791.9	2019.2
34°	1401.0	1502.4	1533.5	1604.3	1721.2	1941.9
34.5°	1342.1	1440.2	1469.4	1539.7	1651.4	1867.4
35°	1284.1	1379.8	1405.7	1475.0	1581.6	1792.9
35.5°	1226.5	1324.1	1344.9	1410.4	1511.8	1719.3
36°	1171.4	1268.5	1286.4	1346.8	1442.0	1652.4
36.5°	1119.0	1217.1	1228.4	1284.1	1372.7	1584.9
37°	1067.6	1162.9	1173.2	1221.3	1306.7	1517.5
37.5°	1019.0	1111.5	1118.5	1159.6	1244.0	1450.5
38°	970.9	1061.0	1066.7	1099.7	1182.7	1383.1
38.5°	924.3	1012.0	1016.2	1041.2	1126.1	1319.4
39°	880.9	967.2	967.2	983.7	1070.9	1259.5
39.5°	836.1	920.0	921.4	930.9	1016.7	1201.5
40°	795.5	877.6	875.2	879.9	963.9	1145.4
40.5°	755.0	834.2	831.8	833.7	912.9	1088.8
41°	716.8	794.1	789.4	789.9	865.8	1035.6
41.5°	681.4	753.6	748.8	750.7	820.5	984.6
42°	646.5	716.3	711.1	713.5	779.0	935.1
42.5°	614.0	679.5	674.8	679.1	738.0	888.0
43°	580.5	644.2	639.9	646.0	700.3	843.6
43.5°	550.3	610.2	606.9	615.4	664.4	798.8



TEST NUMBER: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	464.0	515.4	514.9	527.2	568.2	679.1
45.5°	438.6	485.7	486.2	500.3	538.5	642.3
46°	415.0	457.4	458.8	473.0	509.8	606.0
46.5°	391.4	431.0	432.9	447.0	481.9	572.0
47°	367.8	406.5	408.8	422.5	455.1	539.5
47.5°	343.8	383.4	385.3	398.9	428.7	508.3
48°	321.1	359.8	362.6	376.3	404.1	478.2
48.5°	293.3	337.6	340.9	354.1	381.0	448.5
49°	264.1	313.1	317.4	332.0	357.9	421.1
49.5°	234.4	286.7	291.9	308.4	334.8	397.1
50°	206.1	257.9	264.1	282.0	310.8	371.6
50.5°	180.1	228.2	235.8	253.7	282.9	347.5
51°	155.6	199.5	207.0	225.9	254.2	322.1
51.5°	135.8	174.0	180.6	198.1	225.9	293.8
52°	118.4	156.6	163.2	172.6	197.6	263.6
52.5°	104.2	139.6	145.2	155.6	172.1	234.4
53°	91.5	123.1	127.3	138.6	155.6	205.1
53.5°	81.1	106.1	109.9	122.1	138.6	178.7
54°	72.1	89.1	92.0	105.2	121.7	161.3
54.5°	64.6	78.3	81.1	88.2	104.7	143.8
55°	57.5	69.8	72.1	78.3	88.2	126.4
55.5°	51.9	62.2	64.1	69.3	77.8	108.9
56°	46.7	55.6	57.5	61.8	69.3	92.0
56.5°	42.9	50.0	51.4	55.2	61.8	81.1
57°	39.1	45.3	46.2	49.5	55.2	71.7
57.5°	35.4	40.6	41.5	44.3	49.5	64.1
58°	31.6	36.8	37.7	40.1	44.3	57.1
58.5°	28.3	33.0	34.0	36.3	40.1	51.4
59°	25.5	30.2	30.7	33.0	36.3	46.2
59.5°	23.1	27.4	27.8	29.7	32.5	41.5
60°	21.2	25.0	25.5	26.9	29.7	37.3
60.5°	19.3	22.6	23.1	24.5	26.9	34.0
61°	17.4	20.3	20.7	22.2	24.5	30.7
61.5°	16.0	18.9	19.3	20.3	22.2	27.8
62°	14.6	17.4	17.9	18.4	20.3	25.0
62.5°	13.2	16.0	16.5	17.0	18.4	23.1
63°	12.3	14.6	15.1	15.6	17.0	20.7
63.5°	11.3	13.2	13.7	14.1	15.6	18.9
64°	10.4	11.8	12.3	12.7	14.1	17.4
64.5°	9.4	10.8	11.3	11.8	12.7	16.0
65°	8.5	9.9	10.4	10.8	11.8	15.1
65.5°	8.0	9.4	9.4	9.9	10.8	13.7
66°	7.1	8.5	8.5	9.0	9.9	12.3



TEST NUMBER: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	5.7	6.6	6.6	7.1	7.5	9.4
68°	5.2	6.1	6.1	6.6	7.1	8.5
68.5°	4.7	5.7	5.7	6.1	6.6	7.5
69°	4.2	5.2	5.2	5.2	5.7	7.1
69.5°	3.8	4.7	4.7	5.2	5.2	6.6
70°	3.8	4.2	4.2	4.7	4.7	5.7
70.5°	3.3	3.8	3.8	4.2	4.2	5.2
71°	3.3	3.8	3.8	3.8	4.2	4.7
71.5°	2.8	3.3	3.3	3.3	3.8	4.2
72°	2.4	2.8	2.8	3.3	3.3	4.2
72.5°	2.4	2.8	2.8	2.8	3.3	3.8
73°	2.4	2.4	2.4	2.8	2.8	3.3
73.5°	1.9	2.4	2.4	2.4	2.4	3.3
74°	1.9	1.9	1.9	2.4	2.4	2.8
74.5°	1.4	1.9	1.9	1.9	1.9	2.4
75°	1.4	1.9	1.9	1.9	1.9	2.4
75.5°	1.4	1.4	1.4	1.9	1.9	1.9
76°	1.4	1.4	1.4	1.4	1.4	1.9
76.5°	0.9	1.4	1.4	1.4	1.4	1.9
77°	0.9	0.9	1.4	1.4	1.4	1.4
77.5°	0.9	0.9	0.9	0.9	0.9	1.4
78°	0.9	0.9	0.9	0.9	0.9	1.4
78.5°	0.9	0.9	0.9	0.9	0.9	0.9
79°	0.5	0.9	0.9	0.9	0.9	0.9
79.5°	0.5	0.5	0.5	0.5	0.5	0.9
80°	0.5	0.5	0.5	0.5	0.5	0.9
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: P776577

CATALOG NUMBER: HCDJBL54050CSD-HCD42TRH-5000lm-3500K

**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



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Scaled Data Report





21.5°	3604.6	3771.6	3862.6	3907.4	3837.1	3813.1	3759.8	3648.5	3466.0	3255.2	3138.3
22°	3558.9	3734.8	3827.7	3872.0	3794.7	3773.9	3721.1	3606.5	3417.9	3188.7	3074.1



44°	756.9	895.0	975.2	1007.3	909.2	874.7	837.5	778.1	673.4	577.7	538.5
44.5°	717.2	846.5	920.0	950.2	856.4	823.3	788.0	736.1	637.1	547.5	510.7



66.5°	10.8	13.7	15.1	15.1	12.3	12.3	11.3	10.8	9.4	8.0	7.1
67°	9.9	12.3	13.7	13.7	11.3	10.8	10.4	9.9	8.5	7.1	6.6



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°	3098.6	3210.4	3247.2	3307.1	3418.4	3604.6
22°	3034.5	3151.5	3182.6	3240.6	3359.4	3558.9



44°	521.1	577.2	574.8	584.3	630.5	756.9
44.5°	492.3	545.6	544.2	556.0	599.4	717.2

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66.5°	6.6	7.5	8.0	8.5	9.0	10.8
67°	6.1	7.1	7.1	7.5	8.5	9.9

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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)