

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: P776367

Luminaire Tested: HCDJBL3040CSD-HCD62TRH-4000lm-3500K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776367  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B056)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD62TRH-4000lm-3500K  
Description: 6 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: 4189.9 lumens  
Efficiency: N/A  
Efficacy: 108.8 lumens/watt  
Spacing Criteria (0/90/45): 0.83 / 0.82 / 0.91  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

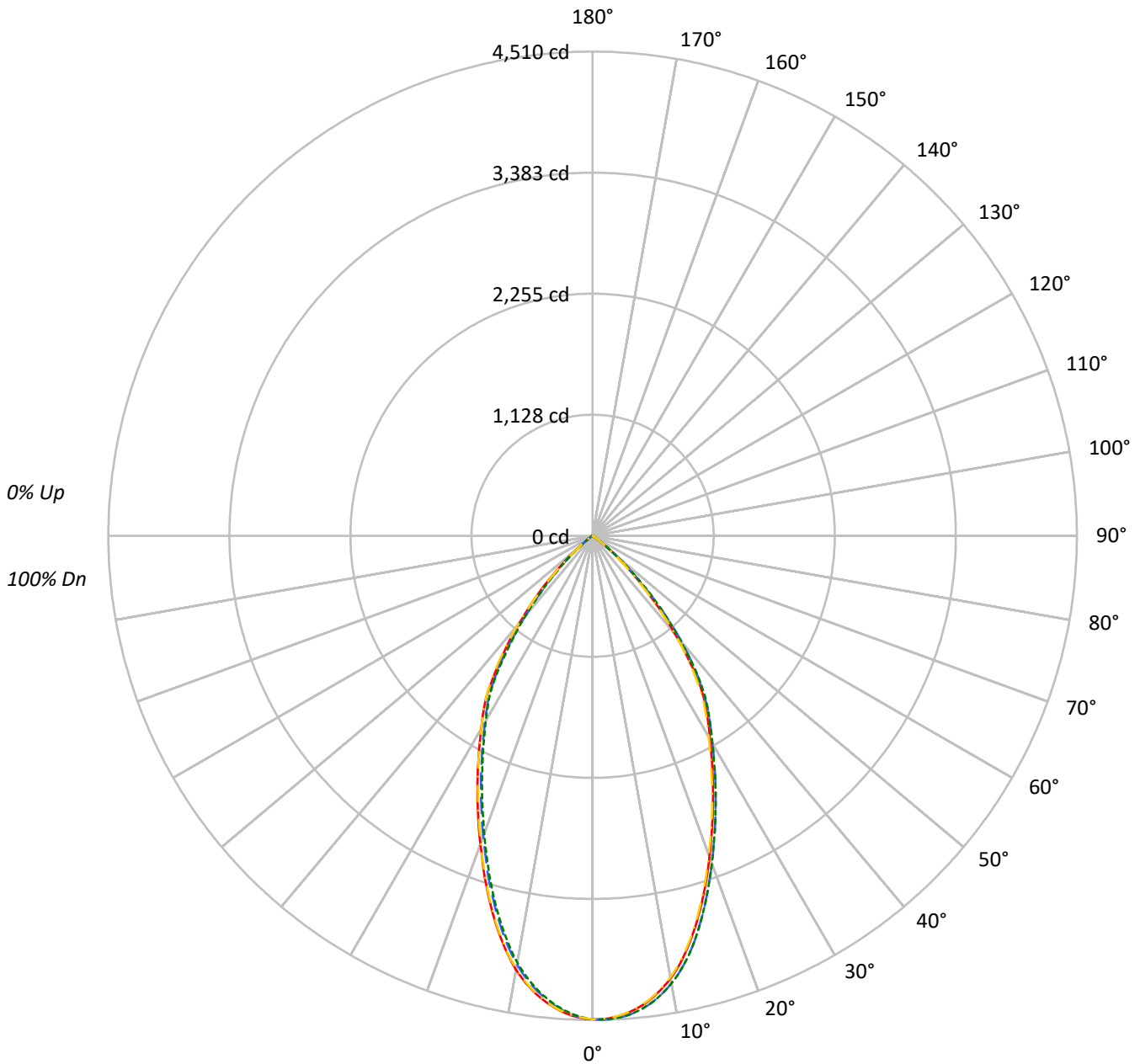
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	100	99	98	97	96	95	93
	1	113	110	108	106	111	108	106	104	104	102	101	100	99	98	97	96	95	93	93	92	91	90	89	88	86
	2	107	102	98	95	105	101	97	93	97	94	91	94	92	89	92	89	88	86	86	85	84	83	82	81	79
	3	102	95	90	85	100	93	89	85	91	87	83	88	85	82	86	83	81	79	79	78	77	76	75	73	73
	4	96	88	82	78	94	87	82	77	85	80	77	83	79	76	81	78	75	73	73	72	71	70	69	68	68
	5	91	82	76	71	89	81	75	71	79	74	70	78	73	70	76	72	69	68	68	67	66	65	64	63	63
	6	86	77	70	66	84	76	70	66	74	69	65	73	68	65	71	67	64	63	63	62	61	60	59	58	58
	7	81	72	65	61	80	71	65	61	70	64	60	68	64	60	67	63	60	58	58	57	56	55	54	53	53
	8	77	67	61	57	76	67	61	56	65	60	56	64	59	56	63	59	56	54	54	53	52	51	50	49	49
	9	73	63	57	53	72	63	57	53	62	56	52	61	56	52	60	55	52	51	51	50	49	48	47	46	46
	10	70	59	53	49	69	59	53	49	58	53	49	57	52	49	57	52	49	47	47	46	45	44	43	42	42

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

	0°	90°	180°	270°
0°	246844	246844	246844	246844
5°	243979	245355	241833	240039
10°	232967	235600	228475	224673
15°	211914	215728	205194	199848
20°	185691	189425	178294	172215
25°	160576	163963	153360	147202
30°	138528	141167	131432	125918
35°	119049	121847	108489	102740
40°	85768	90949	76128	69473
45°	50788	56735	43330	37632
50°	21057	24613	14882	12409
55°	3575	4712	3575	2351
60°	1480	1392	1436	1173
65°	882	830	882	726
70°	577	577	577	513
75°	424	339	424	339
80°	253	253	253	253
85°	0	252	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 60378 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	412.6	9.8
10°-20°	1019.7	24.3
20°-30°	1186.3	28.3
30°-40°	1031.7	24.6
40°-50°	474.6	11.3
50°-60°	56.0	1.3
60°-70°	6.7	0.2
70°-80°	2.0	0.0
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°	2618.6	62.5
0°-40°	3650.3	87.1
0°-60°	4180.9	99.8
0°-90°	4189.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4189.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	4503	4503	4503	4503	4503	
5°	4434	4459	4395	4362	4434	415
15°	3734	3801	3616	3521	3734	1038
25°	2655	2711	2535	2434	2655	1219
35°	1779	1821	1621	1535	1779	1081
45°	655	732	559	485	655	514
55°	37	49	37	25	37	62
65°	7	6	7	6	7	7
75°	2	2	2	2	2	2
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°	4502.8	4502.8	4502.8	4502.8	4502.8	4502.8	4502.8	4502.8	4502.8	4502.8	4502.8
0.5°	4504.8	4507.9	4508.3	4504.8	4505.5	4503.2	4501.6	4502.4	4501.6	4502.0	4501.2
1°	4504.0	4508.3	4509.9	4507.9	4506.7	4503.2	4501.2	4499.6	4497.2	4496.8	4495.2
1.5°	4500.4	4506.7	4509.9	4509.1	4506.7	4502.0	4498.4	4494.8	4490.8	4488.8	4486.5
2°	4496.4	4504.4	4507.9	4508.7	4504.8	4499.6	4494.4	4488.1	4482.9	4479.3	4475.3
2.5°	4490.0	4499.6	4504.0	4506.7	4501.6	4494.4	4487.7	4479.3	4472.9	4467.8	4462.6
3°	4482.1	4493.2	4498.0	4503.6	4496.0	4488.5	4479.3	4469.8	4460.6	4454.3	4447.9
3.5°	4472.9	4484.9	4491.2	4498.4	4489.6	4480.9	4469.4	4458.2	4447.1	4438.4	4432.0
4°	4461.4	4474.9	4482.1	4491.2	4481.7	4471.0	4458.2	4443.9	4431.2	4421.3	4414.1
4.5°	4448.3	4463.4	4472.2	4482.1	4471.4	4459.0	4444.7	4428.8	4413.7	4402.2	4394.2
5°	4433.6	4450.3	4459.0	4472.2	4458.6	4445.9	4429.2	4411.7	4394.6	4381.1	4371.6
5.5°	4417.7	4435.6	4445.5	4459.4	4445.1	4430.0	4412.1	4393.4	4374.4	4358.9	4348.5
6°	4399.0	4418.5	4430.4	4445.9	4429.2	4412.9	4393.8	4371.2	4350.9	4334.2	4323.1
6.5°	4379.5	4401.0	4412.9	4430.0	4411.3	4394.2	4373.2	4348.5	4327.1	4309.6	4296.4
7°	4356.9	4379.9	4393.0	4412.9	4392.6	4374.0	4350.5	4324.7	4301.2	4282.5	4268.6
7.5°	4332.6	4357.7	4371.6	4393.0	4370.8	4349.7	4325.9	4299.6	4272.6	4252.3	4238.0
8°	4306.8	4332.6	4346.9	4371.6	4347.3	4324.3	4299.6	4270.6	4243.2	4221.3	4205.4
8.5°	4279.4	4307.2	4321.9	4348.1	4321.1	4298.8	4271.4	4240.0	4211.4	4188.3	4171.6
9°	4249.5	4279.0	4293.7	4321.5	4293.7	4270.2	4241.6	4208.2	4178.0	4152.9	4135.4
9.5°	4218.1	4248.3	4265.0	4293.7	4264.2	4239.2	4209.0	4176.0	4142.2	4116.4	4097.3
10°	4185.1	4215.7	4232.8	4263.9	4232.4	4206.6	4175.6	4138.2	4104.4	4077.4	4056.3
10.5°	4149.0	4183.2	4199.8	4232.4	4200.2	4173.2	4138.6	4100.5	4063.5	4033.3	4011.8
11°	4111.6	4146.6	4164.1	4199.5	4164.1	4135.8	4100.9	4059.1	4020.2	3986.0	3964.9
11.5°	4071.1	4106.8	4125.5	4163.7	4126.3	4096.9	4059.9	4016.2	3974.1	3939.9	3917.6
12°	4027.3	4065.9	4084.2	4124.7	4085.8	4054.8	4015.4	3969.3	3927.5	3892.6	3868.3
12.5°	3982.4	4021.4	4041.6	4083.4	4043.6	4010.6	3969.7	3923.2	3877.9	3841.7	3817.0
13°	3935.9	3976.0	3997.5	4040.4	3998.7	3965.3	3923.6	3874.7	3828.2	3790.0	3764.6
13.5°	3887.8	3929.1	3951.4	3995.9	3952.2	3917.2	3874.7	3824.6	3776.5	3737.1	3710.1
14°	3837.7	3880.6	3902.5	3950.6	3902.9	3868.7	3824.2	3772.5	3723.6	3685.1	3657.2
14.5°	3786.8	3830.2	3853.2	3899.7	3852.4	3816.6	3771.7	3719.6	3670.7	3628.6	3602.0
15°	3733.9	3778.9	3800.3	3851.6	3801.1	3764.2	3719.2	3666.4	3615.5	3574.5	3546.3
15.5°	3680.3	3725.6	3747.1	3799.5	3749.1	3711.3	3666.4	3612.3	3560.6	3518.9	3489.9
16°	3626.6	3672.3	3694.2	3746.3	3694.6	3657.2	3612.7	3556.7	3505.4	3463.6	3434.2
16.5°	3573.0	3618.7	3641.3	3693.0	3640.1	3603.2	3558.2	3502.6	3450.9	3406.8	3378.2
17°	3518.9	3563.8	3585.3	3638.9	3585.7	3547.9	3501.4	3446.5	3394.5	3349.9	3320.5
17.5°	3462.4	3508.6	3529.6	3582.9	3529.2	3490.7	3445.7	3391.7	3337.6	3293.9	3262.1
18°	3406.8	3452.1	3474.0	3527.2	3473.2	3434.6	3389.7	3335.2	3280.4	3235.9	3203.3
18.5°	3351.1	3396.8	3417.5	3470.4	3416.3	3379.0	3333.6	3276.8	3223.9	3178.2	3145.6
19°	3294.7	3341.2	3359.9	3413.1	3360.3	3322.9	3276.0	3220.3	3165.9	3120.2	3088.4
19.5°	3239.4	3284.7	3304.2	3356.3	3303.4	3266.5	3218.8	3165.5	3109.0	3066.5	3034.7
20°	3183.0	3227.9	3246.6	3299.9	3247.0	3209.2	3163.5	3107.8	3056.2	3012.8	2980.6
20.5°	3126.9	3173.0	3191.3	3242.2	3189.7	3152.4	3107.1	3055.0	3003.3	2959.2	2926.6
21°	3072.1	3117.8	3136.9	3187.8	3133.7	3097.1	3054.2	3002.1	2950.4	2905.5	2872.5

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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°	2911.1	2954.4	2971.9	3019.6	2973.1	2937.7	2896.0	2843.5	2790.2	2745.3	2711.9
23°	2858.6	2900.3	2918.6	2965.5	2919.8	2884.4	2843.1	2789.8	2738.5	2692.0	2660.6
23.5°	2807.3	2847.9	2865.8	2911.9	2866.9	2831.2	2789.0	2738.2	2686.5	2641.2	2609.4
24°	2754.8	2796.6	2812.9	2857.8	2813.7	2778.7	2736.6	2687.3	2635.6	2590.3	2557.7
24.5°	2705.2	2745.3	2760.4	2804.9	2762.0	2724.6	2685.3	2636.4	2584.7	2540.6	2508.0
25°	2654.7	2694.4	2709.5	2754.1	2710.7	2674.1	2633.6	2585.1	2535.4	2490.9	2458.7
25.5°	2605.0	2643.9	2659.0	2703.2	2659.0	2624.9	2583.5	2536.2	2486.9	2441.6	2411.0
26°	2556.1	2596.2	2609.4	2651.9	2609.0	2576.0	2534.6	2487.7	2438.4	2393.9	2363.3
26.5°	2508.4	2545.4	2560.5	2600.2	2559.7	2525.5	2485.7	2438.8	2389.9	2346.2	2314.0
27°	2459.9	2496.9	2510.8	2551.3	2510.4	2475.4	2436.8	2391.1	2342.6	2299.3	2267.5
27.5°	2412.2	2449.1	2462.3	2502.8	2461.5	2429.7	2389.5	2343.4	2295.7	2253.2	2221.4
28°	2365.7	2403.4	2414.6	2454.7	2413.0	2381.6	2341.8	2297.7	2250.0	2206.7	2176.4
28.5°	2319.2	2356.9	2367.7	2407.0	2366.5	2333.9	2295.7	2251.2	2203.9	2161.7	2131.5
29°	2275.0	2310.0	2321.5	2358.9	2320.0	2288.2	2251.6	2206.7	2160.9	2118.4	2087.8
29.5°	2231.7	2265.9	2275.4	2313.2	2275.0	2243.6	2206.7	2163.3	2117.6	2076.3	2046.1
30°	2188.4	2223.0	2232.5	2269.1	2230.1	2200.3	2163.3	2120.8	2076.3	2034.1	2005.1
30.5°	2146.2	2180.0	2190.0	2225.3	2187.2	2157.0	2121.2	2078.3	2034.5	1993.2	1965.0
31°	2105.3	2138.3	2147.8	2181.6	2145.8	2116.0	2079.5	2037.7	1993.6	1953.0	1924.4
31.5°	2063.9	2096.5	2106.1	2139.9	2104.5	2075.5	2038.9	1998.0	1954.2	1914.1	1886.3
32°	2025.4	2058.0	2066.3	2098.5	2064.7	2034.5	2000.3	1959.4	1915.3	1875.1	1846.9
32.5°	1986.8	2018.2	2026.6	2058.0	2024.2	1995.2	1960.2	1918.9	1876.3	1835.8	1808.7
33°	1948.3	1979.3	1987.6	2018.6	1986.4	1956.2	1920.8	1877.9	1834.2	1792.4	1764.2
33.5°	1907.7	1938.7	1946.3	1978.9	1946.3	1917.3	1878.7	1831.4	1786.9	1742.4	1711.7
34°	1867.6	1897.4	1901.8	1938.7	1906.9	1876.3	1834.2	1782.5	1735.6	1690.3	1660.1
34.5°	1822.7	1852.5	1853.7	1895.4	1865.2	1833.4	1785.7	1731.6	1678.3	1636.6	1603.6
35°	1778.9	1804.8	1805.6	1847.7	1820.7	1789.3	1737.2	1681.1	1621.1	1581.8	1548.8
35.5°	1730.4	1755.5	1757.5	1800.8	1774.9	1743.5	1687.9	1627.9	1561.1	1520.9	1495.1
36°	1678.7	1704.2	1708.6	1751.9	1727.2	1694.6	1638.6	1574.2	1505.0	1460.5	1441.0
36.5°	1621.9	1651.3	1659.7	1704.2	1674.8	1641.4	1586.5	1518.9	1449.4	1401.3	1382.6
37°	1560.3	1597.3	1610.4	1655.3	1621.1	1584.9	1533.3	1463.3	1396.1	1342.8	1326.1
37.5°	1496.3	1541.6	1559.9	1605.2	1564.3	1528.1	1478.8	1405.2	1342.0	1285.2	1266.9
38°	1434.3	1486.7	1507.0	1553.9	1505.8	1470.4	1423.5	1350.0	1288.8	1228.7	1208.9
38.5°	1375.4	1429.1	1453.0	1502.6	1445.8	1408.8	1366.3	1294.3	1233.1	1174.7	1147.3
39°	1316.6	1369.9	1398.5	1450.6	1386.2	1346.0	1309.4	1239.9	1178.3	1122.6	1091.2
39.5°	1257.4	1310.6	1343.6	1394.9	1328.5	1286.0	1249.8	1185.0	1121.4	1067.0	1032.8
40°	1198.5	1251.4	1288.8	1339.3	1270.9	1228.7	1189.8	1131.0	1063.8	1011.3	977.5
40.5°	1139.7	1192.6	1233.9	1283.6	1213.6	1171.1	1128.6	1076.9	1007.3	958.0	920.3
41°	1083.7	1133.3	1179.5	1228.0	1158.8	1115.1	1067.8	1022.4	954.9	904.8	865.8
41.5°	1026.0	1075.7	1121.8	1172.3	1103.9	1056.6	1008.1	967.2	902.8	852.3	810.6
42°	971.2	1021.6	1063.8	1113.9	1050.3	1001.8	950.1	911.1	852.3	800.2	757.3
42.5°	914.7	968.4	1006.5	1056.2	995.4	947.7	893.6	855.9	803.4	750.1	706.8
43°	860.2	914.3	948.1	1000.2	941.3	893.6	839.2	801.8	754.1	703.6	659.1
43.5°	805.4	858.3	889.3	943.7	887.7	838.4	785.1	747.7	704.0	654.3	611.0



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CATALOG NUMBER: HCDJBL3040CSD-HCD62TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	655.1	702.8	723.1	778.8	731.8	683.3	634.4	592.7	558.9	516.8	481.8
45.5°	606.6	652.7	669.4	726.3	682.2	634.4	586.0	544.6	512.8	472.7	441.6
46°	561.3	603.8	618.5	673.8	635.2	586.3	540.2	498.1	468.7	431.3	404.3
46.5°	516.0	556.1	568.5	622.9	586.0	539.8	495.3	452.8	425.7	395.5	371.3
47°	472.3	510.4	519.2	572.4	537.9	497.7	452.0	414.2	386.4	360.2	338.7
47.5°	429.7	465.9	473.1	524.7	492.5	455.6	411.0	376.1	347.4	324.4	305.7
48°	390.0	422.2	428.9	477.0	449.6	414.2	374.5	337.9	308.1	289.0	272.7
48.5°	351.8	378.8	387.2	431.3	409.5	377.3	337.9	299.7	268.7	253.2	244.5
49°	315.6	338.7	347.4	390.0	368.9	340.3	301.7	261.6	234.9	224.2	217.8
49.5°	281.0	299.7	308.9	347.8	328.8	303.3	265.1	230.6	203.1	196.0	193.2
50°	246.9	262.8	272.7	309.3	288.6	266.7	234.1	201.9	174.5	171.3	170.1
50.5°	215.5	228.2	238.9	271.9	248.5	234.1	204.3	175.7	149.5	147.9	148.3
51°	185.6	196.8	207.5	238.1	215.1	202.7	177.7	151.5	127.6	127.6	128.4
51.5°	157.8	167.8	178.1	204.7	185.2	174.5	153.8	130.4	109.7	109.3	110.9
52°	132.0	142.3	150.7	175.3	157.0	147.5	131.6	110.5	93.8	93.0	94.6
52.5°	113.7	124.0	131.2	148.3	130.8	123.6	111.3	93.0	79.9	78.3	79.1
53°	95.4	105.7	111.7	129.2	108.1	102.2	92.6	77.9	68.0	65.6	65.6
53.5°	77.1	87.9	92.2	110.1	88.3	83.1	76.7	64.8	57.2	54.5	53.7
54°	59.2	69.6	72.7	91.0	71.2	67.2	62.8	53.3	47.7	48.1	47.3
54.5°	46.9	51.7	53.3	72.0	56.8	53.7	54.5	46.9	42.5	41.7	40.5
55°	37.4	40.5	41.7	52.9	49.3	46.9	46.1	40.5	37.4	35.0	33.8
55.5°	29.8	31.8	32.2	41.3	42.1	40.1	38.2	34.2	32.2	28.6	27.4
56°	25.0	25.8	25.4	31.8	34.6	33.4	30.2	28.2	27.0	22.3	20.7
56.5°	22.3	22.7	22.3	25.0	27.0	26.6	22.3	21.9	21.9	20.3	19.1
57°	20.7	20.7	20.3	21.5	19.9	19.9	20.3	20.3	20.3	19.1	17.9
57.5°	19.5	19.5	18.7	19.5	18.3	18.3	18.7	19.1	18.7	17.9	16.7
58°	17.9	17.9	17.5	17.9	17.1	17.1	17.5	17.9	17.5	16.7	15.5
58.5°	16.7	16.7	15.9	16.7	15.9	15.9	16.3	16.7	16.3	15.5	14.3
59°	15.5	15.5	15.1	15.5	14.7	14.7	15.1	15.5	15.1	14.3	13.5
59.5°	14.7	14.3	13.9	14.3	13.5	13.5	13.9	14.3	14.3	13.5	12.3
60°	13.5	13.5	13.1	13.5	12.7	12.7	13.1	13.1	13.1	12.3	11.5
60.5°	12.7	12.3	11.9	12.3	11.9	11.9	11.9	12.3	12.3	11.5	10.7
61°	11.5	11.5	11.1	11.5	10.7	11.1	11.1	11.5	11.5	10.7	9.9
61.5°	10.7	10.7	10.3	10.7	10.3	10.3	10.3	10.7	10.7	9.9	9.5
62°	9.9	9.9	9.5	9.9	9.5	9.5	9.9	9.9	9.9	9.5	8.7
62.5°	9.5	9.5	8.7	9.1	8.7	8.7	9.1	9.5	9.5	8.7	8.3
63°	8.7	8.7	8.3	8.7	8.3	8.3	8.3	8.7	8.7	8.3	7.6
63.5°	8.3	8.3	8.0	8.0	7.6	8.0	8.0	8.3	8.3	8.0	7.2
64°	8.0	7.6	7.2	7.6	7.2	7.2	7.6	8.0	8.0	7.6	6.8
64.5°	7.2	7.2	6.8	7.2	6.8	6.8	7.2	7.2	7.2	6.8	6.4
65°	6.8	6.8	6.4	6.8	6.4	6.4	6.8	6.8	6.8	6.4	6.0
65.5°	6.4	6.4	6.0	6.4	6.0	6.0	6.4	6.4	6.4	6.0	5.6
66°	6.0	6.0	5.6	6.0	5.6	5.6	6.0	6.0	6.0	5.6	5.2





TEST NUMBER: P776367

CATALOG NUMBER: HCDJBL3040CSD-HCD62TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	5.2	4.8	4.8	4.8	4.8	4.8	4.8	5.2	5.2	4.8	4.4
68°	4.8	4.8	4.4	4.4	4.4	4.4	4.4	4.8	4.8	4.4	4.4
68.5°	4.4	4.4	4.0	4.4	4.0	4.0	4.4	4.4	4.4	4.4	4.0
69°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.4	4.0	3.6
69.5°	4.0	4.0	3.6	3.6	3.6	3.6	4.0	4.0	4.0	3.6	3.6
70°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.2
70.5°	3.6	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.2	3.2
71°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.8
71.5°	3.2	2.8	2.8	2.8	2.8	2.8	2.8	3.2	3.2	2.8	2.8
72°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.4
72.5°	2.8	2.8	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.4	2.4
73°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
73.5°	2.4	2.4	2.4	2.4	2.0	2.4	2.4	2.4	2.4	2.4	2.0
74°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.0	2.0
74.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	2.0	2.0	1.6	2.0	1.6	2.0	2.0	2.0	2.0	2.0	1.6
75.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0	2.0	1.6	1.6
76°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
76.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.2
77°	1.6	1.2	1.2	1.6	1.2	1.2	1.6	1.6	1.6	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
78°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
78.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
79°	1.2	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8
79.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
81°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
81.5°	0.8	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4
82°	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4
85°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.4	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: P776367

CATALOG NUMBER: HCDJBL3040CSD-HCD62TRH-4000lm-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: P776367

CATALOG NUMBER: HCDJBL3040CSD-HCD62TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4502.8	4502.8	4502.8	4502.8	4502.8	4502.8
0.5°	4493.2	4496.4	4496.4	4498.4	4501.6	4504.8
1°	4484.9	4489.6	4490.4	4494.0	4498.4	4504.0
1.5°	4474.1	4479.7	4481.7	4486.9	4494.0	4500.4
2°	4461.0	4469.0	4472.2	4478.9	4487.7	4496.4
2.5°	4446.3	4455.5	4459.4	4469.0	4480.1	4490.0
3°	4429.6	4440.4	4445.9	4456.6	4470.2	4482.1
3.5°	4410.9	4424.5	4430.4	4443.1	4458.2	4472.9
4°	4391.1	4404.6	4413.3	4427.2	4444.7	4461.4
4.5°	4368.8	4384.7	4393.8	4409.7	4429.6	4448.3
5°	4345.3	4362.0	4372.8	4390.3	4412.9	4433.6
5.5°	4319.1	4338.6	4349.7	4369.2	4394.6	4417.7
6°	4292.5	4313.5	4325.9	4346.5	4374.8	4399.0
6.5°	4263.5	4285.3	4300.0	4322.7	4352.5	4379.5
7°	4233.2	4256.3	4272.2	4296.8	4328.2	4356.9
7.5°	4201.4	4224.9	4242.0	4268.2	4302.0	4332.6
8°	4166.1	4191.9	4209.8	4238.4	4273.8	4306.8
8.5°	4129.1	4156.9	4176.8	4205.8	4244.4	4279.4
9°	4090.5	4118.8	4139.8	4171.6	4211.8	4249.5
9.5°	4049.2	4079.8	4101.7	4135.8	4178.4	4218.1
10°	4005.1	4036.1	4059.1	4097.7	4143.8	4185.1
10.5°	3957.4	3991.9	4016.6	4056.7	4105.6	4149.0
11°	3908.1	3945.8	3971.3	4012.2	4065.1	4111.6
11.5°	3859.2	3895.3	3925.6	3966.9	4021.4	4071.1
12°	3807.9	3845.7	3873.9	3920.8	3976.0	4027.3
12.5°	3755.4	3793.2	3823.0	3871.5	3929.5	3982.4
13°	3702.1	3740.7	3773.3	3822.2	3882.2	3935.9
13.5°	3647.7	3686.6	3720.8	3769.3	3831.3	3887.8
14°	3592.8	3633.4	3665.6	3716.1	3780.5	3837.7
14.5°	3536.0	3578.1	3610.7	3664.4	3727.6	3786.8
15°	3481.5	3521.3	3555.5	3609.1	3674.7	3733.9
15.5°	3424.3	3464.8	3500.6	3554.3	3620.7	3680.3
16°	3366.6	3408.0	3443.8	3496.6	3565.8	3626.6
16.5°	3309.8	3351.5	3387.7	3442.6	3510.9	3573.0
17°	3251.8	3294.7	3330.5	3386.5	3456.5	3518.9
17.5°	3194.9	3236.6	3273.2	3329.7	3400.4	3462.4
18°	3134.5	3178.2	3214.4	3271.2	3344.0	3406.8
18.5°	3078.4	3119.4	3156.7	3213.6	3287.5	3351.1
19°	3022.8	3062.9	3099.1	3159.1	3230.7	3294.7
19.5°	2967.1	3007.7	3044.2	3104.3	3175.8	3239.4
20°	2911.5	2952.0	2990.6	3048.2	3120.2	3183.0
20.5°	2856.2	2898.0	2936.1	2993.4	3065.7	3126.9
21°	2807.3	2841.9	2880.5	2938.1	3009.7	3072.1



TEST NUMBER: P776367

CATALOG NUMBER: HCDJBL3040CSD-HCD62TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2650.3	2684.1	2723.0	2781.5	2850.3	2911.1
23°	2599.0	2632.8	2670.6	2728.2	2797.8	2858.6
23.5°	2548.5	2581.9	2620.9	2678.5	2746.9	2807.3
24°	2500.0	2532.6	2571.2	2626.8	2696.4	2754.8
24.5°	2449.5	2483.3	2521.1	2578.3	2645.1	2705.2
25°	2402.2	2433.6	2472.2	2527.1	2595.8	2654.7
25.5°	2353.3	2386.3	2424.9	2479.8	2546.9	2605.0
26°	2306.0	2339.0	2377.6	2432.1	2498.8	2556.1
26.5°	2259.9	2292.9	2331.1	2385.1	2450.7	2508.4
27°	2213.4	2246.4	2284.2	2338.6	2403.4	2459.9
27.5°	2167.7	2201.5	2238.1	2292.1	2356.5	2412.2
28°	2124.0	2156.2	2193.1	2245.2	2310.4	2365.7
28.5°	2081.4	2112.4	2149.8	2201.5	2265.1	2319.2
29°	2040.1	2070.7	2107.7	2159.4	2221.4	2275.0
29.5°	1997.6	2029.4	2064.7	2116.4	2177.6	2231.7
30°	1957.0	1989.2	2024.6	2075.1	2136.3	2188.4
30.5°	1918.1	1949.5	1984.4	2033.7	2095.0	2146.2
31°	1879.9	1910.5	1946.3	1995.2	2054.4	2105.3
31.5°	1840.9	1871.9	1908.1	1956.6	2013.9	2063.9
32°	1801.6	1833.8	1868.8	1917.7	1975.3	2025.4
32.5°	1758.6	1795.6	1830.6	1879.9	1937.5	1986.8
33°	1710.5	1750.7	1787.7	1837.4	1899.4	1948.3
33.5°	1658.1	1701.0	1740.0	1790.8	1857.2	1907.7
34°	1601.2	1648.5	1688.7	1741.6	1811.1	1867.6
34.5°	1544.8	1592.1	1632.6	1693.5	1764.2	1822.7
35°	1489.5	1535.2	1575.8	1641.0	1714.9	1778.9
35.5°	1433.9	1475.2	1518.9	1589.7	1664.0	1730.4
36°	1377.0	1409.6	1463.7	1536.0	1611.2	1678.7
36.5°	1317.8	1354.0	1428.7	1481.2	1557.5	1621.9
37°	1259.0	1299.1	1370.3	1426.7	1502.6	1560.3
37.5°	1201.3	1244.3	1311.4	1369.5	1445.0	1496.3
38°	1141.3	1189.0	1252.6	1312.2	1384.6	1434.3
38.5°	1083.3	1135.3	1193.8	1255.0	1324.2	1375.4
39°	1027.6	1080.5	1138.5	1197.7	1263.7	1316.6
39.5°	973.1	1025.6	1080.9	1140.5	1203.3	1257.4
40°	918.3	970.8	1023.6	1084.0	1142.5	1198.5
40.5°	865.8	917.1	967.2	1028.4	1081.7	1139.7
41°	813.3	864.2	911.5	972.7	1020.8	1083.7
41.5°	760.1	811.3	858.3	915.5	960.0	1026.0
42°	708.0	762.8	806.6	861.8	903.6	971.2
42.5°	660.3	712.4	757.3	805.8	847.1	914.7
43°	611.4	667.4	708.0	750.9	795.0	860.2
43.5°	565.7	620.1	658.3	694.9	741.4	805.4



TEST NUMBER: P776367

CATALOG NUMBER: HCDJBL3040CSD-HCD62TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	440.5	485.4	514.8	541.4	595.5	655.1
45.5°	403.1	443.2	469.5	495.3	549.0	606.6
46°	369.7	401.5	425.7	450.8	505.3	561.3
46.5°	336.3	361.3	383.2	409.1	462.7	516.0
47°	302.9	324.4	343.5	369.7	421.8	472.3
47.5°	269.5	289.4	305.7	331.9	382.0	429.7
48°	241.3	255.6	270.3	296.6	344.3	390.0
48.5°	214.7	224.6	236.9	263.6	308.1	351.8
49°	188.8	196.4	205.5	233.3	273.5	315.6
49.5°	165.8	170.1	176.9	205.5	241.7	281.0
50°	144.7	145.5	151.5	178.9	211.5	246.9
50.5°	124.8	129.6	134.8	155.0	184.1	215.5
51°	106.9	113.3	118.1	133.2	159.0	185.6
51.5°	90.2	97.4	101.4	116.5	135.6	157.8
52°	75.9	81.5	84.7	100.2	118.1	132.0
52.5°	62.8	65.2	68.0	83.5	100.6	113.7
53°	51.3	54.5	57.2	67.2	83.5	95.4
53.5°	44.9	44.5	47.3	55.3	66.4	77.1
54°	39.0	36.6	39.0	44.5	53.3	59.2
54.5°	32.6	29.8	31.8	35.8	42.5	46.9
55°	26.2	24.6	25.8	28.6	33.8	37.4
55.5°	19.9	21.1	21.9	23.9	27.0	29.8
56°	18.3	19.1	19.9	21.1	23.5	25.0
56.5°	17.1	17.9	18.3	19.5	21.1	22.3
57°	15.9	16.7	17.1	18.3	19.5	20.7
57.5°	15.1	15.5	15.9	16.7	18.3	19.5
58°	13.9	14.7	15.1	15.5	17.1	17.9
58.5°	12.7	13.5	13.9	14.7	15.9	16.7
59°	11.9	12.7	13.1	13.5	14.7	15.5
59.5°	11.1	11.5	11.9	12.7	13.9	14.7
60°	10.3	10.7	11.1	11.5	12.7	13.5
60.5°	9.5	9.9	10.3	10.7	11.9	12.7
61°	9.1	9.5	9.5	9.9	10.7	11.5
61.5°	8.3	8.7	9.1	9.5	10.3	10.7
62°	8.0	8.3	8.3	8.7	9.5	9.9
62.5°	7.6	7.6	8.0	8.3	8.7	9.5
63°	7.2	7.2	7.6	7.6	8.3	8.7
63.5°	6.8	6.8	6.8	7.2	8.0	8.3
64°	6.4	6.4	6.4	6.8	7.6	8.0
64.5°	6.0	6.0	6.0	6.4	6.8	7.2
65°	5.6	5.6	5.6	6.0	6.4	6.8
65.5°	5.2	5.2	5.6	5.6	6.0	6.4
66°	4.8	5.2	5.2	5.2	5.6	6.0



TEST NUMBER: P776367

CATALOG NUMBER: HCDJBL3040CSD-HCD62TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	4.0	4.0	4.4	4.4	4.8	5.2
68°	4.0	4.0	4.0	4.0	4.4	4.8
68.5°	3.6	3.6	3.6	4.0	4.4	4.4
69°	3.2	3.6	3.6	3.6	4.0	4.0
69.5°	3.2	3.2	3.2	3.6	3.6	4.0
70°	2.8	3.2	3.2	3.2	3.6	3.6
70.5°	2.8	2.8	2.8	3.2	3.2	3.6
71°	2.8	2.8	2.8	2.8	3.2	3.2
71.5°	2.4	2.4	2.4	2.8	2.8	3.2
72°	2.4	2.4	2.4	2.4	2.8	2.8
72.5°	2.0	2.4	2.4	2.4	2.4	2.8
73°	2.0	2.0	2.0	2.4	2.4	2.4
73.5°	2.0	2.0	2.0	2.0	2.4	2.4
74°	2.0	2.0	2.0	2.0	2.0	2.0
74.5°	1.6	1.6	1.6	2.0	2.0	2.0
75°	1.6	1.6	1.6	1.6	1.6	2.0
75.5°	1.6	1.6	1.6	1.6	1.6	1.6
76°	1.2	1.6	1.6	1.6	1.6	1.6
76.5°	1.2	1.2	1.2	1.2	1.6	1.6
77°	1.2	1.2	1.2	1.2	1.2	1.6
77.5°	1.2	1.2	1.2	1.2	1.2	1.2
78°	1.2	1.2	1.2	1.2	1.2	1.2
78.5°	0.8	0.8	0.8	0.8	1.2	1.2
79°	0.8	0.8	0.8	0.8	0.8	1.2
79.5°	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8
80.5°	0.8	0.8	0.8	0.8	0.8	0.8
81°	0.4	0.8	0.8	0.8	0.8	0.8
81.5°	0.4	0.4	0.4	0.4	0.4	0.8
82°	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.0	0.4
85°	0.0	0.0	0.4	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: P776367

CATALOG NUMBER: HCDJBL3040CSD-HCD62TRH-4000lm-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°	3018.4	3060.9	3081.6	3132.9	3079.2	3043.8	3001.3	2949.2	2897.2	2851.8	2818.8
22°	2963.5	3006.5	3025.2	3076.0	3026.4	2991.0	2948.8	2896.4	2844.3	2797.4	2765.2



44°	754.5	805.4	834.0	887.7	834.4	783.1	733.0	694.5	654.3	607.4	566.1
44.5°	705.2	753.7	778.0	832.0	782.3	732.6	683.3	642.0	605.8	560.5	522.7



66.5°	5.6	5.6	5.2	5.6	5.2	5.2	5.6	5.6	5.6	5.6	5.2
67°	5.2	5.2	5.2	5.2	4.8	5.2	5.2	5.2	5.6	5.2	4.8



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°	2755.2	2789.0	2828.4	2886.0	2956.4	3018.4
22°	2702.0	2735.8	2773.9	2832.0	2903.5	2963.5



44°	521.2	574.0	609.4	642.4	690.5	754.5
44.5°	480.2	528.7	561.7	589.5	642.0	705.2

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66.5°	4.4	4.8	4.8	5.2	5.6	5.6
67°	4.4	4.4	4.4	4.8	5.2	5.2

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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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Scaled Data Report



(END OF REPORT)