

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: P776267

Luminaire Tested: HCDJBL3040CSD-HCD42TRH-4000lm-3500K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776267  
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: HCDJBL3040CSD-HCD42TRH-4000lm-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: 3991.3 lumens  
Efficiency: N/A  
Efficacy: 103.7 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

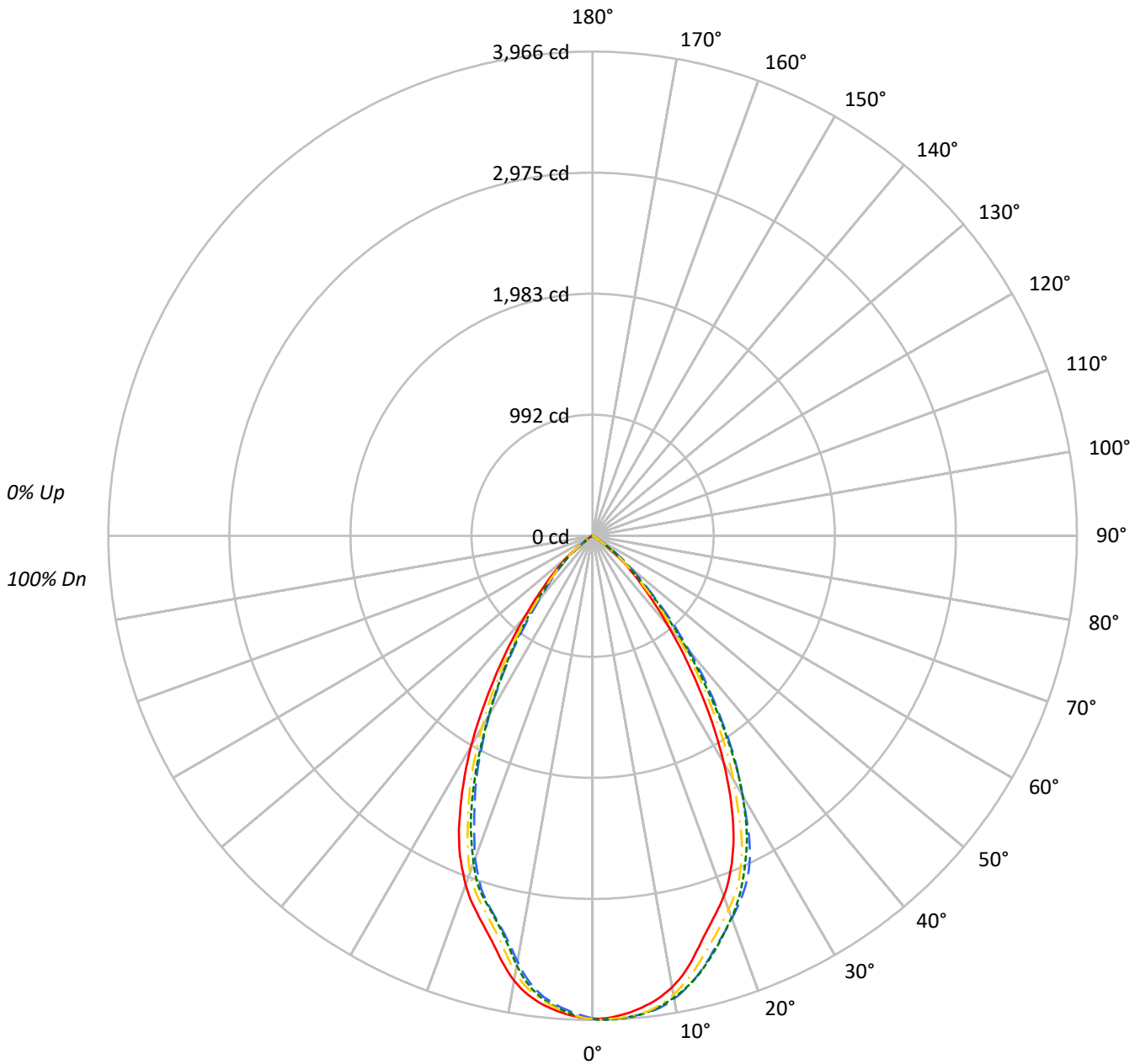
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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

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

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

	0°	90°	180°	270°
0°	497799	497799	497799	497799
5°	493472	498942	491123	486903
10°	479690	490757	472879	456790
15°	448482	471673	437042	416131
20°	420770	445841	407364	381932
25°	379282	410734	358703	321905
30°	312116	356685	289315	247681
35°	232065	276864	210095	178600
40°	158535	193068	141630	121473
45°	101821	120634	90288	77278
50°	61301	69857	52589	42545
55°	23367	27624	16566	12901
60°	7903	9288	6595	5311
65°	3782	4020	3067	2472
70°	1766	2061	1472	1325
75°	972	1167	778	778
80°	580	580	290	290
85°	0	578	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 134214 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	366.4	9.2
10°-20°	955.2	23.9
20°-30°	1198.5	30.0
30°-40°	915.2	22.9
40°-50°	436.1	10.9
50°-60°	104.4	2.6
60°-70°	13.0	0.3
70°-80°	2.3	0.1
80°-90°	0.2	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°	2520.1	63.1
0°-40°	3435.3	86.1
0°-60°	3975.8	99.6
0°-90°	3991.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3991.3	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	3956	3956	3956	3956	3956	
5°	3906	3950	3888	3854	3906	368
15°	3442	3620	3354	3194	3442	968
25°	2731	2958	2583	2318	2731	1235
35°	1510	1802	1368	1162	1510	944
45°	572	678	507	434	572	453
55°	106	126	76	59	106	114
65°	13	14	10	8	13	14
75°	2	2	2	2	2	2
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°	3955.5	3955.5	3955.5	3955.5	3955.5	3955.5	3955.5	3955.5	3955.5	3955.5	3955.5
0.5°	3956.7	3955.9	3955.5	3954.7	3963.0	3962.3	3960.7	3957.9	3953.5	3946.8	3943.6
1°	3956.3	3958.3	3959.5	3958.7	3965.0	3964.6	3961.5	3957.1	3949.9	3940.4	3936.4
1.5°	3953.9	3958.3	3960.7	3961.5	3965.8	3965.0	3961.1	3955.5	3946.4	3932.1	3926.1
2°	3949.9	3957.9	3961.5	3963.0	3965.4	3965.0	3960.3	3953.1	3940.0	3923.3	3915.4
2.5°	3945.2	3955.5	3960.7	3963.0	3964.2	3963.8	3958.7	3949.9	3933.6	3913.4	3904.6
3°	3938.8	3951.9	3958.7	3962.6	3963.0	3962.6	3956.3	3946.0	3926.1	3903.1	3892.7
3.5°	3931.7	3949.1	3956.3	3961.1	3960.7	3960.7	3953.9	3941.6	3918.2	3891.5	3880.0
4°	3923.7	3944.4	3953.1	3959.5	3957.9	3958.7	3951.5	3936.4	3908.6	3880.0	3866.5
4.5°	3915.0	3938.8	3950.3	3956.3	3954.7	3955.5	3947.9	3930.5	3899.1	3866.9	3852.6
5°	3906.2	3932.9	3947.2	3953.5	3949.5	3951.5	3943.6	3922.9	3887.6	3853.0	3836.3
5.5°	3895.9	3926.9	3942.8	3950.3	3944.8	3946.8	3938.0	3914.2	3876.0	3838.3	3818.8
6°	3884.4	3919.7	3938.4	3946.4	3937.2	3940.4	3930.9	3905.0	3862.9	3822.0	3800.2
6.5°	3872.1	3911.8	3932.9	3940.4	3929.7	3932.1	3922.1	3893.9	3848.6	3803.7	3777.9
7°	3859.4	3903.1	3926.1	3934.0	3920.5	3922.9	3912.2	3881.6	3832.7	3783.5	3753.7
7.5°	3845.8	3892.3	3918.2	3926.5	3909.4	3911.4	3899.1	3866.9	3815.6	3760.0	3726.7
8°	3830.0	3880.0	3908.2	3917.4	3897.5	3898.7	3885.6	3851.4	3797.0	3735.0	3695.3
8.5°	3813.3	3866.1	3895.9	3906.2	3884.0	3884.8	3869.7	3834.7	3775.5	3706.8	3662.3
9°	3794.6	3851.0	3882.4	3893.5	3870.9	3868.5	3853.0	3816.4	3752.9	3675.8	3624.5
9.5°	3775.1	3834.7	3867.3	3880.0	3855.4	3853.0	3834.3	3797.0	3727.4	3641.2	3585.2
10°	3753.7	3816.4	3850.6	3864.9	3840.3	3834.7	3814.9	3774.7	3700.4	3603.9	3541.1
10.5°	3729.8	3796.6	3832.7	3849.4	3823.6	3816.4	3793.8	3751.3	3670.6	3563.8	3499.4
11°	3704.8	3776.3	3812.9	3832.3	3806.1	3796.6	3771.2	3725.1	3636.9	3523.6	3456.1
11.5°	3677.4	3754.1	3793.4	3814.5	3788.2	3775.5	3746.1	3698.0	3601.9	3482.7	3413.2
12°	3648.0	3730.2	3771.5	3796.6	3768.0	3753.7	3720.7	3669.4	3565.4	3441.8	3374.6
12.5°	3616.6	3704.0	3748.1	3775.9	3746.9	3729.0	3694.1	3638.5	3528.4	3404.8	3338.9
13°	3582.4	3676.6	3723.5	3755.3	3725.5	3704.8	3665.1	3605.9	3490.7	3369.5	3305.5
13.5°	3547.1	3647.6	3697.3	3732.6	3702.0	3677.8	3635.7	3572.9	3454.5	3334.9	3274.9
14°	3512.5	3618.2	3670.6	3709.6	3677.0	3650.4	3605.5	3538.7	3418.7	3302.3	3244.3
14.5°	3477.9	3587.2	3643.2	3685.3	3648.8	3621.4	3574.5	3504.2	3386.2	3272.1	3214.1
15°	3442.2	3554.2	3615.0	3658.3	3620.2	3592.4	3543.1	3471.6	3354.4	3241.2	3184.3
15.5°	3408.8	3522.8	3586.0	3632.5	3592.8	3563.0	3512.1	3439.8	3323.8	3212.2	3156.5
16°	3376.2	3491.1	3554.2	3603.5	3563.8	3534.4	3483.9	3408.8	3292.8	3182.8	3127.9
16.5°	3346.8	3460.1	3524.8	3575.7	3536.3	3505.0	3455.7	3378.6	3263.4	3154.1	3098.5
17°	3316.2	3429.1	3497.4	3547.1	3506.9	3477.2	3427.9	3348.0	3234.0	3125.1	3067.5
17.5°	3286.4	3400.5	3470.0	3519.3	3477.5	3448.5	3398.9	3318.6	3205.0	3093.8	3034.6
18°	3257.0	3372.3	3442.6	3491.5	3448.1	3419.1	3369.9	3290.0	3176.4	3060.4	2990.9
18.5°	3228.8	3343.7	3416.4	3463.2	3417.2	3390.9	3341.7	3261.4	3145.4	3018.3	2947.2
19°	3201.0	3316.6	3390.1	3435.4	3387.8	3361.9	3313.9	3233.6	3112.4	2976.6	2903.5
19.5°	3172.0	3288.4	3362.3	3406.0	3357.6	3334.5	3286.1	3205.0	3077.5	2934.4	2859.7
20°	3141.8	3261.4	3335.3	3377.8	3329.0	3305.5	3257.8	3175.2	3041.7	2892.3	2812.9
20.5°	3109.7	3234.4	3308.7	3350.0	3298.8	3275.7	3228.4	3143.8	3001.2	2850.2	2759.2
21°	3074.3	3207.0	3281.7	3321.0	3265.4	3245.9	3199.0	3110.0	2960.7	2797.8	2700.0



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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°	2957.5	3114.0	3195.5	3230.8	3161.3	3143.0	3100.5	2996.4	2839.1	2633.3	2536.0
23°	2915.4	3080.3	3164.1	3196.3	3122.8	3108.1	3065.9	2954.3	2792.6	2582.4	2480.3
23.5°	2870.9	3044.5	3132.7	3162.1	3082.2	3067.5	3021.8	2912.2	2742.9	2532.4	2427.9
24°	2825.6	3005.2	3098.5	3125.9	3042.1	3024.6	2977.4	2870.1	2691.7	2481.1	2375.4
24.5°	2779.9	2963.8	3062.4	3085.8	3000.0	2981.3	2933.2	2830.3	2639.2	2432.3	2322.6
25°	2731.4	2920.1	3023.8	3046.5	2957.9	2938.4	2889.1	2781.5	2583.2	2381.4	2268.2
25.5°	2680.2	2874.4	2980.5	3002.8	2915.4	2895.1	2844.7	2731.4	2525.6	2327.4	2212.2
26°	2626.1	2826.4	2936.0	2958.3	2873.3	2852.2	2786.2	2678.6	2466.8	2271.7	2154.9
26.5°	2569.7	2775.5	2884.8	2913.4	2830.7	2801.3	2726.3	2621.8	2408.8	2213.3	2096.9
27°	2512.5	2723.1	2831.5	2867.7	2783.5	2748.9	2661.9	2561.0	2352.0	2151.4	2036.5
27.5°	2454.1	2667.5	2772.3	2822.0	2733.4	2695.3	2599.5	2501.0	2292.0	2089.8	1977.7
28°	2393.3	2609.1	2708.8	2770.4	2681.4	2639.6	2537.5	2437.4	2234.0	2027.8	1918.9
28.5°	2332.5	2545.9	2645.6	2718.7	2624.5	2581.2	2477.9	2370.7	2174.8	1966.6	1861.7
29°	2269.8	2480.7	2580.1	2665.1	2571.3	2518.9	2419.5	2305.1	2115.6	1905.0	1802.9
29.5°	2210.2	2414.4	2516.5	2609.1	2511.7	2457.7	2361.5	2241.6	2054.0	1846.6	1745.7
30°	2147.8	2348.4	2454.9	2549.5	2454.5	2392.9	2303.1	2175.6	1990.9	1789.4	1690.1
30.5°	2083.8	2282.5	2396.1	2487.5	2394.9	2327.4	2244.7	2111.6	1928.5	1731.4	1634.1
31°	2020.7	2218.9	2338.5	2425.5	2336.9	2265.4	2185.1	2046.5	1865.3	1675.0	1576.5
31.5°	1956.3	2154.9	2280.5	2358.4	2273.3	2202.2	2122.8	1983.7	1801.0	1617.0	1518.9
32°	1891.9	2092.6	2221.7	2294.8	2211.4	2142.2	2060.0	1920.1	1735.4	1557.4	1460.9
32.5°	1828.0	2029.4	2160.9	2229.2	2143.4	2080.3	1996.0	1857.4	1669.4	1497.4	1403.7
33°	1763.6	1967.0	2099.7	2165.3	2076.7	2018.3	1930.9	1795.4	1607.1	1437.4	1346.4
33.5°	1701.2	1903.5	2034.2	2102.1	2007.1	1957.5	1866.5	1733.8	1543.5	1377.0	1288.8
34°	1636.1	1839.5	1969.8	2039.3	1939.6	1895.5	1803.3	1672.2	1482.7	1315.9	1233.6
34.5°	1573.3	1774.7	1904.6	1976.2	1870.9	1831.9	1741.0	1611.4	1423.9	1258.6	1179.6
35°	1510.5	1711.6	1838.7	1913.4	1802.1	1768.0	1680.6	1553.4	1367.5	1201.4	1127.5
35.5°	1448.5	1649.2	1775.5	1850.2	1735.4	1703.6	1621.4	1495.4	1309.5	1147.0	1074.7
36°	1392.1	1588.4	1715.1	1786.6	1669.4	1640.4	1562.2	1437.8	1254.7	1092.6	1023.0
36.5°	1335.3	1529.6	1655.9	1721.1	1601.1	1576.9	1501.8	1382.2	1199.8	1041.3	973.4
37°	1278.5	1471.2	1595.2	1660.3	1536.4	1513.3	1442.2	1326.6	1147.4	992.1	923.3
37.5°	1222.1	1407.2	1536.7	1595.2	1472.8	1452.1	1380.2	1272.9	1095.4	943.6	876.8
38°	1165.3	1354.8	1477.2	1532.8	1412.8	1392.5	1320.2	1217.3	1047.3	896.3	830.4
38.5°	1111.6	1301.9	1415.2	1468.0	1348.4	1332.1	1261.8	1162.9	996.4	849.8	786.6
39°	1061.2	1249.5	1356.8	1410.0	1290.8	1272.9	1204.6	1109.3	950.3	806.1	746.1
39.5°	1012.3	1197.1	1298.4	1349.6	1233.2	1212.6	1149.0	1058.0	905.0	764.8	709.6
40°	965.0	1143.0	1239.6	1289.6	1175.2	1153.4	1093.8	1005.6	862.1	726.3	674.2
40.5°	917.4	1091.0	1181.2	1229.6	1117.2	1095.7	1041.7	955.1	818.4	689.7	640.4
41°	872.5	1037.3	1124.4	1169.6	1063.6	1039.7	992.1	907.4	777.9	656.3	610.2
41.5°	829.6	986.9	1071.9	1113.2	1008.7	983.7	942.4	862.1	739.4	623.8	582.8
42°	787.8	936.0	1019.9	1057.6	958.7	929.3	892.3	816.8	702.4	595.2	555.0
42.5°	748.1	888.0	969.0	1003.6	907.4	878.0	844.3	774.7	665.9	565.8	528.4
43°	710.8	842.3	920.1	949.5	858.6	828.4	797.0	733.4	631.3	538.3	503.0
43.5°	673.0	797.8	870.9	897.9	810.9	781.9	750.9	694.1	598.7	511.7	477.6



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CATALOG NUMBER: HCDJBL3040CSD-HCD42TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	572.1	674.2	729.4	754.1	677.8	653.2	623.4	585.2	507.3	437.0	407.2
45.5°	541.1	636.5	685.3	711.2	637.3	615.0	586.8	551.8	479.5	413.6	385.0
46°	510.5	599.9	643.2	669.0	597.1	578.9	551.4	520.5	452.5	390.5	365.1
46.5°	481.9	566.9	606.7	630.5	560.6	544.3	518.9	490.3	426.7	368.7	345.3
47°	454.5	534.4	571.3	592.8	524.8	510.9	487.9	460.9	400.9	348.0	325.0
47.5°	428.3	503.4	537.1	557.4	492.6	479.9	459.3	433.1	377.8	327.8	305.1
48°	402.9	473.6	505.4	524.0	461.7	450.5	431.5	406.8	356.0	307.1	285.3
48.5°	377.8	445.4	476.0	491.5	431.9	422.3	405.2	381.8	334.5	286.8	263.0
49°	354.8	418.0	447.4	462.5	404.8	395.7	380.2	359.6	312.7	263.4	238.4
49.5°	334.5	392.1	420.3	432.7	378.6	373.5	358.4	337.3	290.8	238.0	213.3
50°	313.1	367.9	394.1	406.4	356.8	351.2	336.5	315.5	268.6	213.0	188.3
50.5°	292.8	345.3	369.5	379.0	334.9	328.6	314.3	293.2	242.4	187.9	166.1
51°	271.4	323.0	346.4	355.6	312.7	306.3	292.4	271.0	216.1	164.5	144.6
51.5°	247.5	301.9	324.6	332.9	290.8	284.1	270.2	245.5	190.7	143.4	125.5
52°	222.1	280.1	302.3	311.1	268.6	261.4	244.3	219.3	166.9	125.5	110.1
52.5°	197.5	256.3	280.1	290.4	244.3	236.4	217.7	193.1	145.4	109.7	96.5
53°	172.8	230.0	255.9	267.4	218.1	209.8	191.5	168.9	126.7	96.5	85.0
53.5°	150.6	204.2	229.2	243.1	193.1	183.9	167.7	146.6	110.8	85.0	75.1
54°	135.9	178.8	201.8	216.1	168.1	160.5	145.0	127.9	97.3	75.5	66.7
54.5°	121.2	156.1	176.4	190.7	145.4	139.1	125.5	111.6	85.8	66.7	59.6
55°	106.5	135.1	153.8	164.9	125.9	120.4	109.3	97.7	75.5	59.6	53.2
55.5°	91.8	121.6	134.7	143.8	108.9	104.5	95.7	85.4	67.1	53.2	47.7
56°	77.5	107.7	120.4	129.5	94.6	90.6	83.8	75.5	59.6	47.7	42.9
56.5°	68.3	93.8	106.5	115.2	82.6	79.9	73.9	66.7	53.2	42.9	38.5
57°	60.4	80.3	92.6	100.9	72.7	70.3	65.2	59.2	47.7	38.9	35.4
57.5°	54.0	71.1	78.7	87.0	64.0	62.0	58.0	52.8	42.9	35.8	32.6
58°	48.1	63.2	69.5	72.7	56.8	55.2	51.6	47.3	38.5	32.6	29.4
58.5°	43.3	56.0	61.6	64.0	50.5	49.3	46.1	42.1	35.4	29.4	26.6
59°	38.9	50.1	54.8	56.8	44.9	43.7	41.3	38.1	32.6	26.6	23.4
59.5°	35.0	44.9	48.9	50.5	40.1	39.3	38.1	35.0	29.4	23.4	21.5
60°	31.4	40.1	43.7	44.9	36.9	36.2	35.0	32.2	26.2	21.5	19.5
60.5°	28.6	36.2	39.3	40.1	33.8	33.0	31.8	29.0	23.4	19.5	17.5
61°	25.8	32.6	35.4	36.2	30.6	29.8	28.6	25.8	21.1	17.5	16.3
61.5°	23.4	29.4	31.8	32.6	27.4	26.6	25.4	23.0	19.1	16.3	14.7
62°	21.1	26.6	28.6	29.4	23.8	23.4	22.2	20.7	17.5	14.7	13.5
62.5°	19.5	24.2	26.2	26.6	21.9	21.5	20.3	19.1	15.9	13.5	12.3
63°	17.5	21.9	23.8	24.2	19.9	19.5	18.3	17.1	14.7	12.3	11.1
63.5°	15.9	19.9	21.5	21.9	17.9	17.5	16.7	15.5	13.1	11.1	10.3
64°	14.7	18.3	19.5	19.9	16.3	15.9	15.1	14.3	12.3	10.3	9.5
64.5°	13.5	16.7	17.9	17.9	14.7	14.7	13.9	13.1	11.1	9.5	8.7
65°	12.7	15.1	16.3	16.3	13.5	13.5	12.7	11.9	10.3	8.7	7.9
65.5°	11.5	13.9	14.7	15.1	12.3	12.3	11.5	10.7	9.5	7.9	7.2
66°	10.3	12.7	13.5	13.9	11.5	11.1	10.7	9.9	8.3	7.2	6.8





TEST NUMBER: P776267

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	7.9	9.5	10.3	10.3	8.7	8.7	7.9	7.5	6.4	5.6	5.2
68°	7.2	8.7	9.5	9.5	7.9	7.9	7.5	7.2	6.0	5.2	4.8
68.5°	6.4	7.9	8.7	8.7	7.2	7.2	6.8	6.4	5.6	4.8	4.4
69°	6.0	7.5	7.9	7.9	6.8	6.8	6.4	6.0	5.2	4.4	4.0
69.5°	5.6	6.8	7.2	7.5	6.4	6.0	5.6	5.6	4.4	4.0	3.6
70°	4.8	6.4	6.8	6.8	5.6	5.6	5.2	4.8	4.0	3.6	3.2
70.5°	4.4	5.6	6.0	6.4	5.2	5.2	4.8	4.4	4.0	3.2	3.2
71°	4.0	5.2	5.6	5.6	4.8	4.8	4.4	4.0	3.6	3.2	2.8
71.5°	3.6	4.8	5.2	5.2	4.4	4.4	4.0	4.0	3.2	2.8	2.8
72°	3.6	4.4	4.8	4.8	4.0	4.0	3.6	3.6	2.8	2.4	2.4
72.5°	3.2	4.0	4.4	4.4	3.6	3.6	3.6	3.2	2.8	2.4	2.0
73°	2.8	3.6	4.0	4.0	3.6	3.2	3.2	2.8	2.4	2.0	2.0
73.5°	2.8	3.2	3.6	3.6	3.2	3.2	2.8	2.8	2.0	2.0	2.0
74°	2.4	3.2	3.2	3.6	2.8	2.8	2.8	2.4	2.0	1.6	1.6
74.5°	2.0	2.8	3.2	3.2	2.8	2.4	2.4	2.4	2.0	1.6	1.6
75°	2.0	2.4	2.8	2.8	2.4	2.4	2.4	2.0	1.6	1.2	1.2
75.5°	1.6	2.4	2.4	2.8	2.4	2.0	2.0	2.0	1.6	1.2	1.2
76°	1.6	2.0	2.4	2.4	2.0	2.0	2.0	1.6	1.2	1.2	1.2
76.5°	1.6	2.0	2.0	2.4	2.0	2.0	1.6	1.6	1.2	0.8	0.8
77°	1.2	1.6	2.0	2.0	1.6	1.6	1.6	1.2	1.2	0.8	0.8
77.5°	1.2	1.6	1.6	2.0	1.6	1.6	1.2	1.2	0.8	0.8	0.8
78°	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.2	0.8	0.8	0.8
78.5°	0.8	1.2	1.6	1.6	1.2	1.2	1.2	0.8	0.8	0.8	0.8
79°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.4	0.4
79.5°	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.4	0.4
80°	0.8	0.8	1.2	1.2	0.8	0.8	0.8	0.8	0.4	0.4	0.4
80.5°	0.4	0.8	0.8	1.2	0.8	0.8	0.8	0.8	0.4	0.4	0.4
81°	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4
81.5°	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.0	0.4
82.5°	0.4	0.4	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.0	0.0
83°	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4	0.0	0.0	0.0
83.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0
84°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0
84.5°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0
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	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.4	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: P776267

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRH-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: P776267

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3955.5	3955.5	3955.5	3955.5	3955.5	3955.5
0.5°	3941.2	3955.1	3955.5	3955.1	3954.7	3956.7
1°	3932.1	3949.1	3949.9	3950.3	3950.7	3956.3
1.5°	3921.7	3941.6	3942.0	3943.6	3946.0	3953.9
2°	3910.6	3932.1	3933.6	3935.2	3938.8	3949.9
2.5°	3898.3	3921.7	3922.9	3925.7	3930.1	3945.2
3°	3884.8	3909.8	3911.8	3915.0	3920.9	3938.8
3.5°	3871.3	3897.5	3899.5	3903.5	3911.0	3931.7
4°	3856.2	3884.0	3886.0	3891.1	3899.9	3923.7
4.5°	3841.1	3869.7	3871.3	3877.6	3888.0	3915.0
5°	3822.8	3854.2	3857.0	3863.7	3876.0	3906.2
5.5°	3803.3	3837.5	3840.7	3849.0	3862.9	3895.9
6°	3782.3	3819.6	3823.6	3833.1	3848.6	3884.4
6.5°	3756.1	3799.4	3803.3	3815.6	3833.1	3872.1
7°	3729.4	3776.3	3782.3	3797.0	3816.8	3859.4
7.5°	3696.5	3751.7	3758.0	3776.7	3799.8	3845.8
8°	3663.9	3721.9	3732.2	3753.7	3779.9	3830.0
8.5°	3624.9	3690.1	3702.4	3727.8	3758.0	3813.3
9°	3584.8	3654.7	3669.4	3699.6	3735.0	3794.6
9.5°	3540.7	3616.2	3632.5	3668.3	3709.6	3775.1
10°	3496.6	3574.5	3593.6	3633.3	3681.8	3753.7
10.5°	3452.5	3530.0	3551.8	3595.5	3649.6	3729.8
11°	3409.6	3485.1	3508.9	3555.8	3615.8	3704.8
11.5°	3366.7	3439.8	3462.8	3513.7	3580.1	3677.4
12°	3332.5	3396.9	3421.1	3471.2	3541.1	3648.0
12.5°	3298.8	3357.2	3379.0	3428.7	3500.6	3616.6
13°	3267.0	3320.2	3342.9	3390.9	3462.1	3582.4
13.5°	3236.8	3286.1	3309.1	3353.6	3424.3	3547.1
14°	3205.8	3253.9	3276.9	3320.6	3387.8	3512.5
14.5°	3179.6	3224.5	3247.5	3289.6	3353.6	3477.9
15°	3149.8	3193.9	3217.7	3258.6	3321.0	3442.2
15.5°	3123.6	3165.7	3189.1	3228.4	3290.0	3408.8
16°	3096.9	3139.1	3160.1	3198.6	3258.6	3376.2
16.5°	3066.7	3111.6	3133.1	3170.4	3228.0	3346.8
17°	3034.6	3085.8	3105.3	3141.4	3200.6	3316.2
17.5°	2992.4	3056.8	3077.5	3112.8	3171.2	3286.4
18°	2950.7	3023.0	3044.9	3084.2	3142.6	3257.0
18.5°	2909.0	2985.3	3009.5	3051.2	3112.4	3228.8
19°	2867.3	2944.4	2972.6	3017.1	3081.0	3201.0
19.5°	2825.2	2899.5	2930.9	2977.0	3046.5	3172.0
20°	2774.3	2851.8	2885.6	2935.2	3009.9	3141.8
20.5°	2719.5	2802.5	2839.1	2889.5	2969.8	3109.7
21°	2665.5	2753.7	2788.2	2839.9	2926.5	3074.3

TEST NUMBER: P776267

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2499.0	2605.9	2626.1	2675.8	2779.1	2957.5
23°	2440.6	2553.4	2568.5	2619.0	2727.1	2915.4
23.5°	2386.6	2499.0	2511.3	2564.6	2673.0	2870.9
24°	2325.4	2440.2	2455.3	2509.3	2620.2	2825.6
24.5°	2269.8	2382.2	2396.1	2453.7	2565.7	2779.9
25°	2211.0	2318.2	2338.9	2400.5	2514.5	2731.4
25.5°	2153.4	2258.2	2281.7	2344.9	2461.7	2680.2
26°	2095.0	2197.5	2222.9	2290.0	2409.6	2626.1
26.5°	2038.1	2136.7	2166.5	2232.4	2356.0	2569.7
27°	1978.9	2072.3	2106.1	2174.4	2299.6	2512.5
27.5°	1921.7	2010.7	2046.9	2115.6	2242.7	2454.1
28°	1862.5	1948.3	1987.3	2051.6	2183.9	2393.3
28.5°	1803.7	1885.2	1928.9	1994.4	2123.6	2332.5
29°	1741.8	1824.4	1868.5	1933.6	2062.8	2269.8
29.5°	1680.2	1763.2	1810.1	1874.8	1998.4	2210.2
30°	1621.4	1704.4	1750.9	1817.6	1937.2	2147.8
30.5°	1560.2	1646.4	1689.7	1758.8	1873.7	2083.8
31°	1503.4	1590.4	1629.7	1701.2	1810.9	2020.7
31.5°	1446.6	1534.4	1569.3	1643.6	1748.5	1956.3
32°	1391.7	1479.9	1511.3	1586.0	1688.5	1891.9
32.5°	1338.5	1423.1	1453.7	1528.4	1629.3	1828.0
33°	1284.1	1370.7	1400.1	1469.2	1569.3	1763.6
33.5°	1232.8	1318.2	1346.0	1406.0	1509.7	1701.2
34°	1180.4	1265.8	1292.0	1351.6	1450.1	1636.1
34.5°	1130.7	1213.3	1238.0	1297.2	1391.3	1573.3
35°	1081.8	1162.5	1184.3	1242.7	1332.5	1510.5
35.5°	1033.4	1115.6	1133.1	1188.3	1273.7	1448.5
36°	986.9	1068.7	1083.8	1134.7	1214.9	1392.1
36.5°	942.8	1025.4	1035.0	1081.8	1156.5	1335.3
37°	899.5	979.7	988.5	1029.0	1100.9	1278.5
37.5°	858.6	936.4	942.4	977.0	1048.1	1222.1
38°	818.0	893.9	898.7	926.5	996.4	1165.3
38.5°	778.7	852.6	856.2	877.2	948.7	1111.6
39°	742.2	814.9	814.9	828.8	902.3	1061.2
39.5°	704.4	775.1	776.3	784.3	856.6	1012.3
40°	670.2	739.4	737.4	741.4	812.1	965.0
40.5°	636.1	702.8	700.8	702.4	769.2	917.4
41°	603.9	669.0	665.1	665.5	729.4	872.5
41.5°	574.1	634.9	630.9	632.5	691.3	829.6
42°	544.7	603.5	599.1	601.1	656.3	787.8
42.5°	517.3	572.5	568.5	572.1	621.8	748.1
43°	489.1	542.7	539.1	544.3	590.0	710.8
43.5°	463.6	514.1	511.3	518.5	559.8	673.0



TEST NUMBER: P776267

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	390.9	434.2	433.8	444.2	478.7	572.1
45.5°	369.5	409.2	409.6	421.5	453.7	541.1
46°	349.6	385.4	386.6	398.5	429.5	510.5
46.5°	329.8	363.1	364.7	376.6	406.0	481.9
47°	309.9	342.5	344.5	356.0	383.4	454.5
47.5°	289.6	323.0	324.6	336.1	361.1	428.3
48°	270.6	303.1	305.5	317.0	340.5	402.9
48.5°	247.1	284.5	287.2	298.4	321.0	377.8
49°	222.5	263.8	267.4	279.7	301.5	354.8
49.5°	197.5	241.6	245.9	259.8	282.1	334.5
50°	173.6	217.3	222.5	237.6	261.8	313.1
50.5°	151.8	192.3	198.6	213.7	238.4	292.8
51°	131.1	168.1	174.4	190.3	214.1	271.4
51.5°	114.4	146.6	152.2	166.9	190.3	247.5
52°	99.7	131.9	137.5	145.4	166.5	222.1
52.5°	87.8	117.6	122.4	131.1	145.0	197.5
53°	77.1	103.7	107.3	116.8	131.1	172.8
53.5°	68.3	89.4	92.6	102.9	116.8	150.6
54°	60.8	75.1	77.5	88.6	102.5	135.9
54.5°	54.4	66.0	68.3	74.3	88.2	121.2
55°	48.5	58.8	60.8	66.0	74.3	106.5
55.5°	43.7	52.4	54.0	58.4	65.6	91.8
56°	39.3	46.9	48.5	52.0	58.4	77.5
56.5°	36.2	42.1	43.3	46.5	52.0	68.3
57°	33.0	38.1	38.9	41.7	46.5	60.4
57.5°	29.8	34.2	35.0	37.3	41.7	54.0
58°	26.6	31.0	31.8	33.8	37.3	48.1
58.5°	23.8	27.8	28.6	30.6	33.8	43.3
59°	21.5	25.4	25.8	27.8	30.6	38.9
59.5°	19.5	23.0	23.4	25.0	27.4	35.0
60°	17.9	21.1	21.5	22.6	25.0	31.4
60.5°	16.3	19.1	19.5	20.7	22.6	28.6
61°	14.7	17.1	17.5	18.7	20.7	25.8
61.5°	13.5	15.9	16.3	17.1	18.7	23.4
62°	12.3	14.7	15.1	15.5	17.1	21.1
62.5°	11.1	13.5	13.9	14.3	15.5	19.5
63°	10.3	12.3	12.7	13.1	14.3	17.5
63.5°	9.5	11.1	11.5	11.9	13.1	15.9
64°	8.7	9.9	10.3	10.7	11.9	14.7
64.5°	7.9	9.1	9.5	9.9	10.7	13.5
65°	7.2	8.3	8.7	9.1	9.9	12.7
65.5°	6.8	7.9	7.9	8.3	9.1	11.5
66°	6.0	7.2	7.2	7.5	8.3	10.3



TEST NUMBER: P776267

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRH-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	4.8	5.6	5.6	6.0	6.4	7.9
68°	4.4	5.2	5.2	5.6	6.0	7.2
68.5°	4.0	4.8	4.8	5.2	5.6	6.4
69°	3.6	4.4	4.4	4.4	4.8	6.0
69.5°	3.2	4.0	4.0	4.4	4.4	5.6
70°	3.2	3.6	3.6	4.0	4.0	4.8
70.5°	2.8	3.2	3.2	3.6	3.6	4.4
71°	2.8	3.2	3.2	3.2	3.6	4.0
71.5°	2.4	2.8	2.8	2.8	3.2	3.6
72°	2.0	2.4	2.4	2.8	2.8	3.6
72.5°	2.0	2.4	2.4	2.4	2.8	3.2
73°	2.0	2.0	2.0	2.4	2.4	2.8
73.5°	1.6	2.0	2.0	2.0	2.0	2.8
74°	1.6	1.6	1.6	2.0	2.0	2.4
74.5°	1.2	1.6	1.6	1.6	1.6	2.0
75°	1.2	1.6	1.6	1.6	1.6	2.0
75.5°	1.2	1.2	1.2	1.6	1.6	1.6
76°	1.2	1.2	1.2	1.2	1.2	1.6
76.5°	0.8	1.2	1.2	1.2	1.2	1.6
77°	0.8	0.8	1.2	1.2	1.2	1.2
77.5°	0.8	0.8	0.8	0.8	0.8	1.2
78°	0.8	0.8	0.8	0.8	0.8	1.2
78.5°	0.8	0.8	0.8	0.8	0.8	0.8
79°	0.4	0.8	0.8	0.8	0.8	0.8
79.5°	0.4	0.4	0.4	0.4	0.4	0.8
80°	0.4	0.4	0.4	0.4	0.4	0.8
80.5°	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.0	0.4	0.4	0.4	0.4	0.4
83°	0.0	0.4	0.4	0.4	0.0	0.4
83.5°	0.0	0.0	0.0	0.0	0.0	0.4
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: P776267

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRH-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°	3036.9	3177.6	3254.3	3292.0	3232.8	3212.6	3167.7	3073.9	2920.1	2742.5	2644.0
22°	2998.4	3146.6	3224.9	3262.2	3197.1	3179.6	3135.1	3038.5	2879.6	2686.5	2590.0



44°	637.7	754.1	821.6	848.6	766.0	737.0	705.6	655.5	567.3	486.7	453.7
44.5°	604.3	713.1	775.1	800.6	721.5	693.7	663.9	620.2	536.7	461.3	430.3



66.5°	9.1	11.5	12.7	12.7	10.3	10.3	9.5	9.1	7.9	6.8	6.0
67°	8.3	10.3	11.5	11.5	9.5	9.1	8.7	8.3	7.2	6.0	5.6



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°	2610.6	2704.8	2735.8	2786.2	2880.0	3036.9
22°	2556.6	2655.1	2681.4	2730.2	2830.3	2998.4



44°	439.0	486.3	484.3	492.3	531.2	637.7
44.5°	414.8	459.7	458.5	468.4	505.0	604.3

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66.5°	5.6	6.4	6.8	7.2	7.5	9.1
67°	5.2	6.0	6.0	6.4	7.2	8.3

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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)