

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: P776291

Luminaire Tested: HCDJBL3040CSD-HCD4TRH-4000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776291
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD4TRH-4000lm-3000K
Description: 4 INCH ROUND MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

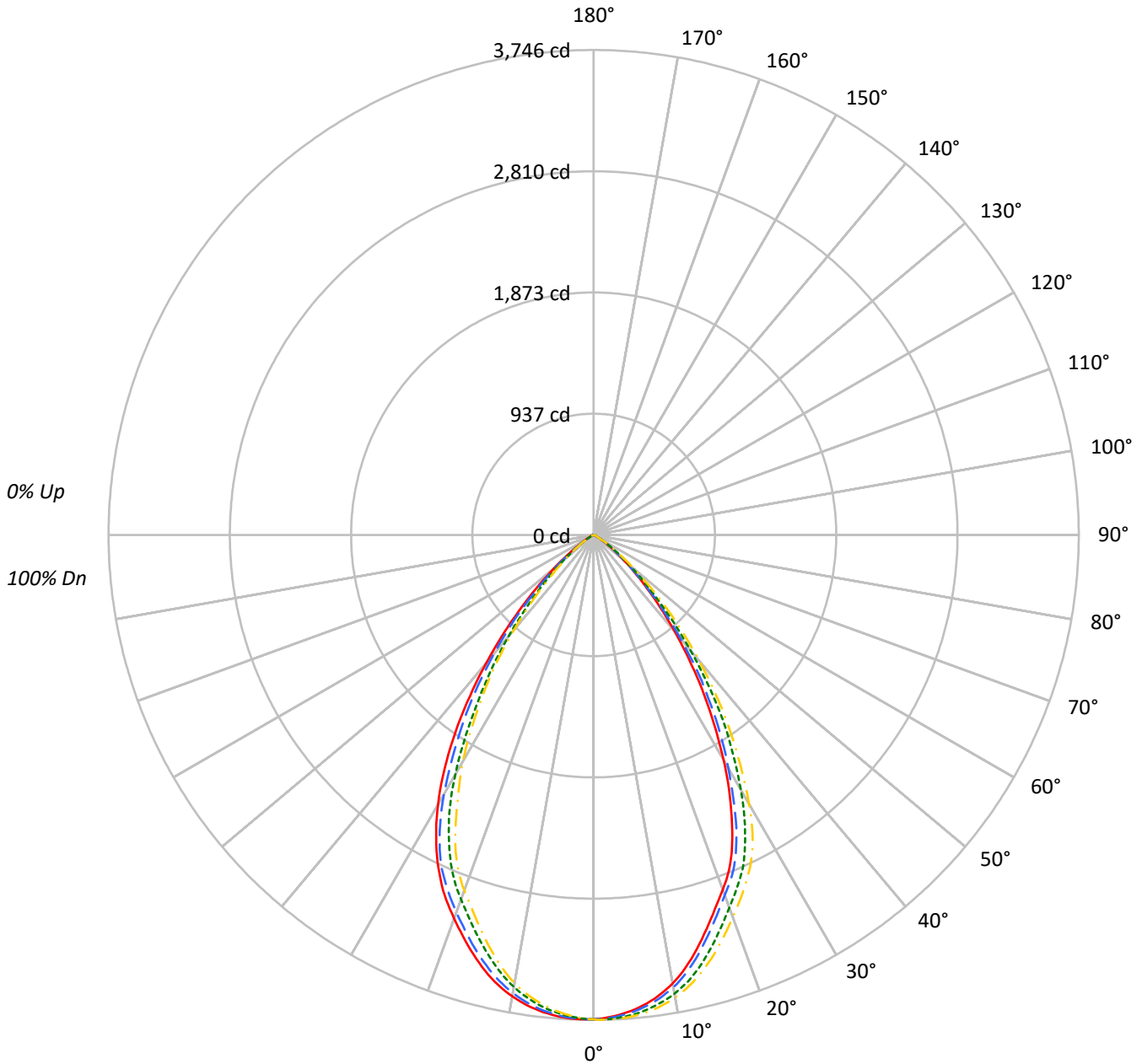
Lumens per Lamp: N/A
Luminaire Lumens: 4216.9 lumens
Efficiency: N/A
Efficacy: 109.5 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 0.98 / 0.98
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): 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	107	105	111	108	105	103	104	102	100	100	99	97	97	95	94	92					92			
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85					85			
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78					78			
4	95	87	81	76	93	85	80	75	83	78	75	81	77	74	79	76	73	71					71			
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65					65			
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60					60			
7	80	70	63	58	78	69	63	58	68	62	58	66	61	58	65	61	57	56					56			
8	75	65	58	54	74	64	58	54	63	58	54	62	57	53	61	57	53	52					52			
9	71	61	54	50	70	60	54	50	59	54	50	58	53	50	58	53	49	48					48			
10	68	57	51	47	67	57	51	47	56	50	46	55	50	46	54	50	46	45					45			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	470968	470968	470968	470968
5°	464606	469103	470000	466235
10°	449455	459767	462515	453109
15°	420900	438502	445694	428912
20°	390436	410364	422056	401190
25°	351746	381976	393945	366757
30°	291800	330499	349332	310634
35°	224521	265972	286052	237027
40°	159340	190669	211846	168228
45°	103281	122164	138610	105025
50°	59715	71071	77356	57268
55°	29379	35830	36247	26373
60°	12308	13994	14397	10244
65°	6402	6641	6879	5360
70°	3753	3900	4195	3164
75°	2285	2480	2480	1896
80°	1160	1667	1449	1160
85°	578	1155	578	578

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 141760 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	349.2	8.3
10°-20°	932.2	22.1
20°-30°	1221.8	29.0
30°-40°	1023.2	24.3
40°-50°	518.8	12.3
50°-60°	141.8	3.4
60°-70°	23.8	0.6
70°-80°	5.5	0.1
80°-90°	0.7	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°	2503.1	59.4
0°-40°	3526.3	83.6
0°-60°	4186.9	99.3
0°-90°	4216.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4216.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3742	3742	3742	3742	3742	
5°	3678	3713	3720	3691	3678	346
15°	3230	3366	3421	3292	3230	905
25°	2533	2751	2837	2641	2533	1148
35°	1461	1731	1862	1543	1461	910
45°	580	686	779	590	580	457
55°	134	163	165	120	134	130
65°	22	22	23	18	22	24
75°	5	5	5	4	5	5
85°	0	1	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°	3742.3	3742.3	3742.3	3742.3	3742.3	3742.3	3742.3	3742.3	3742.3	3742.3	3742.3
0.5°	3738.0	3738.4	3739.9	3742.7	3743.9	3745.0	3745.4	3745.0	3741.9	3741.1	3741.5
1°	3734.9	3735.2	3738.0	3741.1	3743.9	3745.4	3746.2	3745.8	3743.1	3741.5	3741.5
1.5°	3730.5	3732.1	3735.2	3739.2	3743.1	3745.4	3746.2	3746.2	3742.7	3741.1	3739.5
2°	3725.8	3728.2	3731.3	3736.4	3741.1	3744.2	3746.2	3745.8	3741.9	3739.5	3738.4
2.5°	3720.0	3722.7	3727.4	3732.5	3738.8	3743.1	3745.0	3744.2	3740.3	3737.2	3735.6
3°	3713.3	3716.8	3721.5	3728.2	3734.9	3739.9	3742.7	3742.7	3737.6	3734.5	3732.1
3.5°	3705.5	3709.8	3715.7	3721.9	3730.9	3736.8	3739.5	3739.2	3734.9	3730.9	3727.8
4°	3697.3	3702.0	3707.8	3715.3	3726.2	3732.5	3736.4	3735.6	3730.9	3726.6	3723.1
4.5°	3688.3	3693.0	3700.0	3708.2	3720.4	3727.8	3732.5	3731.7	3725.5	3721.1	3716.8
5°	3677.7	3683.9	3690.6	3699.2	3713.3	3722.3	3727.0	3726.2	3720.4	3715.3	3710.6
5.5°	3666.7	3672.6	3680.8	3690.2	3705.9	3715.7	3721.1	3720.0	3713.7	3708.2	3702.7
6°	3653.8	3660.8	3670.6	3680.4	3696.9	3708.2	3714.5	3713.7	3706.7	3700.8	3694.9
6.5°	3641.3	3649.5	3658.9	3670.2	3687.9	3700.4	3707.4	3705.9	3698.8	3691.8	3685.1
7°	3626.8	3635.4	3646.4	3658.9	3677.7	3691.4	3698.8	3698.0	3689.8	3682.8	3674.9
7.5°	3611.5	3620.1	3632.6	3646.4	3666.7	3681.6	3689.0	3688.3	3680.4	3672.2	3663.6
8°	3595.1	3604.8	3618.2	3633.0	3655.0	3670.6	3678.5	3676.9	3670.2	3661.2	3651.4
8.5°	3577.4	3587.6	3602.1	3618.2	3642.0	3658.5	3667.5	3666.7	3658.5	3649.1	3638.1
9°	3558.2	3569.2	3584.5	3602.5	3628.7	3646.0	3655.0	3654.2	3646.4	3636.2	3624.0
9.5°	3538.7	3550.0	3566.5	3585.7	3613.5	3631.9	3642.0	3641.3	3633.8	3622.5	3608.8
10°	3517.1	3529.7	3547.3	3567.6	3597.8	3617.0	3626.8	3627.2	3619.3	3608.0	3592.7
10.5°	3493.6	3507.0	3527.3	3548.1	3580.2	3600.1	3611.5	3612.7	3604.5	3591.5	3576.3
11°	3470.1	3483.9	3504.2	3527.7	3561.8	3582.9	3595.4	3595.8	3588.0	3575.1	3557.9
11.5°	3443.5	3459.2	3480.3	3505.4	3542.6	3564.9	3577.8	3579.0	3571.2	3557.1	3538.3
12°	3415.7	3431.8	3454.5	3481.9	3521.8	3544.5	3558.6	3560.6	3553.2	3538.3	3518.7
12.5°	3387.1	3403.6	3427.5	3456.0	3498.3	3523.4	3539.8	3542.2	3534.0	3518.3	3497.6
13°	3357.8	3375.0	3399.3	3430.6	3474.5	3501.9	3517.9	3521.1	3513.2	3496.8	3475.2
13.5°	3326.8	3344.1	3370.7	3401.6	3449.4	3477.2	3496.4	3499.9	3491.7	3474.8	3452.5
14°	3294.7	3313.5	3339.8	3372.6	3422.8	3452.9	3472.5	3476.4	3468.6	3452.1	3427.5
14.5°	3263.0	3280.6	3308.0	3342.1	3394.6	3427.1	3447.8	3453.7	3445.9	3428.2	3403.2
15°	3230.5	3249.3	3276.3	3312.3	3365.6	3400.4	3422.8	3427.9	3420.8	3402.8	3377.7
15.5°	3197.6	3216.8	3244.2	3281.0	3337.0	3372.6	3397.3	3403.6	3395.7	3378.1	3351.9
16°	3165.5	3184.3	3212.9	3249.3	3307.2	3345.2	3371.1	3377.7	3370.7	3351.9	3325.3
16.5°	3132.2	3151.8	3180.4	3218.8	3277.9	3317.0	3342.9	3352.7	3344.8	3326.0	3297.9
17°	3100.5	3118.9	3148.3	3186.3	3246.6	3288.5	3315.1	3325.3	3317.8	3299.4	3269.7
17.5°	3067.6	3086.8	3115.4	3154.9	3215.6	3258.3	3287.3	3297.1	3290.8	3271.2	3242.2
18°	3035.5	3055.1	3084.1	3123.6	3185.5	3229.3	3258.3	3268.9	3263.0	3243.8	3212.9
18.5°	3003.0	3022.6	3051.6	3091.5	3154.5	3199.6	3229.7	3242.2	3234.4	3216.0	3183.9
19°	2973.2	2992.0	3020.6	3060.6	3124.0	3169.0	3200.7	3211.7	3206.6	3187.8	3155.7
19.5°	2943.1	2961.9	2990.9	3030.0	3094.6	3139.7	3171.8	3183.5	3178.8	3160.0	3128.3
20°	2915.3	2932.9	2961.1	3000.6	3064.1	3109.9	3142.0	3156.1	3151.4	3132.6	3100.1
20.5°	2885.5	2903.9	2932.1	2970.9	3035.1	3080.1	3113.8	3127.9	3123.6	3105.2	3071.9
21°	2856.5	2874.6	2903.5	2941.5	3006.1	3051.6	3084.8	3098.5	3095.8	3077.4	3044.1



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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°	2752.4	2777.8	2811.9	2853.8	2917.2	2965.0	2999.9	3015.5	3010.4	2990.1	2955.2
23°	2714.4	2739.5	2776.3	2821.7	2887.5	2933.3	2971.3	2985.8	2979.5	2955.2	2923.9
23.5°	2672.1	2697.6	2738.3	2785.3	2857.3	2902.0	2940.7	2953.7	2943.9	2920.8	2892.6
24°	2627.1	2654.5	2696.8	2746.5	2827.2	2870.3	2909.8	2921.5	2908.2	2885.9	2860.9
24.5°	2579.7	2607.5	2653.3	2705.4	2790.0	2838.9	2879.3	2889.8	2872.6	2851.1	2829.5
25°	2533.1	2560.5	2608.3	2660.4	2750.8	2807.6	2848.7	2857.7	2837.0	2816.2	2790.8
25.5°	2482.6	2511.2	2560.5	2613.4	2709.7	2769.6	2817.8	2825.6	2801.3	2777.4	2751.2
26°	2433.6	2464.6	2511.2	2562.1	2665.8	2729.7	2781.4	2786.1	2760.6	2734.0	2709.7
26.5°	2382.3	2415.6	2458.7	2508.8	2621.6	2688.2	2742.6	2747.3	2719.5	2691.3	2665.8
27°	2332.2	2365.9	2405.1	2454.8	2575.8	2644.3	2701.9	2703.0	2676.4	2648.6	2620.4
27.5°	2279.8	2315.0	2347.9	2401.9	2529.6	2601.2	2659.2	2660.4	2633.0	2605.5	2572.7
28°	2228.1	2263.7	2293.1	2350.2	2481.0	2556.2	2612.2	2613.4	2589.1	2561.3	2523.7
28.5°	2173.6	2211.6	2237.9	2298.9	2429.3	2510.4	2562.9	2566.8	2546.0	2516.7	2473.2
29°	2119.6	2158.4	2182.6	2248.8	2378.0	2462.6	2512.4	2517.4	2499.8	2470.1	2421.1
29.5°	2064.4	2102.8	2130.2	2200.3	2325.2	2413.7	2457.9	2467.3	2452.8	2422.7	2367.1
30°	2008.0	2045.6	2078.5	2150.5	2274.3	2362.8	2401.1	2413.7	2403.9	2372.6	2309.5
30.5°	1950.0	1988.8	2026.8	2102.0	2216.3	2308.7	2341.6	2359.6	2354.5	2322.0	2252.0
31°	1893.7	1932.0	1975.5	2049.5	2161.9	2253.1	2284.5	2303.6	2302.5	2271.1	2194.4
31.5°	1837.7	1874.5	1924.2	1998.2	2107.9	2194.4	2223.8	2246.5	2250.0	2216.7	2135.3
32°	1782.1	1818.1	1872.1	1943.0	2057.3	2136.8	2165.0	2188.1	2196.0	2161.9	2078.1
32.5°	1729.2	1761.7	1819.3	1888.6	2001.7	2079.3	2107.1	2131.3	2143.5	2107.1	2020.9
33°	1676.3	1708.1	1766.8	1831.8	1948.1	2019.4	2050.7	2074.2	2087.9	2053.4	1964.1
33.5°	1622.3	1654.4	1712.8	1774.2	1895.2	1959.1	1994.3	2017.0	2033.5	1996.6	1908.9
34°	1569.4	1600.0	1657.1	1715.9	1843.5	1896.4	1938.7	1960.6	1976.3	1938.3	1854.1
34.5°	1515.8	1544.8	1601.5	1660.7	1786.4	1834.1	1883.5	1905.4	1920.3	1882.3	1800.1
35°	1461.4	1488.8	1547.1	1606.2	1731.2	1771.9	1827.1	1851.0	1861.9	1824.4	1745.3
35.5°	1411.2	1436.3	1493.5	1553.8	1674.0	1712.0	1771.5	1796.9	1805.6	1764.4	1691.2
36°	1360.3	1385.0	1440.6	1502.5	1619.9	1652.5	1715.5	1741.7	1745.6	1705.7	1637.2
36.5°	1308.6	1334.1	1404.2	1450.8	1558.1	1594.5	1659.5	1688.1	1686.9	1646.2	1582.0
37°	1257.4	1282.8	1350.2	1391.7	1500.5	1536.9	1601.9	1632.1	1627.4	1588.2	1526.0
37.5°	1206.1	1231.9	1296.5	1342.3	1441.0	1481.7	1544.0	1576.9	1571.0	1530.3	1470.0
38°	1154.8	1181.0	1242.9	1292.6	1384.6	1428.1	1486.8	1520.9	1513.0	1473.1	1413.2
38.5°	1106.6	1134.0	1188.8	1243.3	1325.1	1373.3	1430.8	1464.9	1456.3	1416.7	1358.0
39°	1060.4	1087.8	1139.1	1193.9	1269.9	1320.4	1375.2	1408.9	1401.1	1361.9	1303.9
39.5°	1014.6	1040.4	1089.4	1141.1	1213.1	1266.4	1320.8	1354.5	1345.8	1306.7	1251.1
40°	969.9	993.4	1040.0	1088.2	1160.6	1215.1	1266.4	1299.2	1289.5	1252.7	1197.4
40.5°	925.3	949.6	992.3	1037.3	1105.4	1161.8	1213.9	1245.2	1235.0	1198.6	1148.1
41°	882.6	905.3	944.1	987.2	1054.9	1111.3	1163.0	1193.9	1180.6	1143.0	1096.0
41.5°	841.1	864.6	897.5	939.0	1004.0	1060.4	1111.7	1141.8	1127.0	1090.1	1046.3
42°	801.2	823.5	852.5	892.0	955.4	1011.8	1062.0	1090.9	1072.9	1038.5	996.2
42.5°	760.8	783.5	809.0	846.2	907.7	962.5	1013.0	1039.2	1021.2	987.6	947.2
43°	722.5	744.4	765.5	800.8	861.1	915.1	964.5	989.9	970.3	939.0	898.7
43.5°	685.3	707.2	724.8	755.3	814.5	868.5	917.1	941.7	920.2	888.9	850.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	580.3	600.7	610.1	626.9	686.4	737.7	782.0	796.5	778.8	751.0	712.3
45.5°	548.2	567.8	574.4	587.8	647.7	695.4	739.3	749.9	734.6	708.0	668.8
46°	516.5	536.1	540.0	548.6	609.3	655.9	699.0	706.0	691.9	664.9	627.3
46.5°	486.3	505.5	506.3	512.2	572.9	617.5	657.5	661.0	650.0	623.0	587.0
47°	456.2	475.0	475.0	478.5	538.0	579.9	617.5	619.5	608.9	584.6	547.4
47.5°	429.2	446.4	444.8	446.4	504.3	543.9	578.4	578.7	569.4	547.0	510.6
48°	402.1	419.4	416.2	416.6	472.2	509.8	541.5	540.4	531.4	507.9	475.4
48.5°	376.3	393.1	389.6	390.0	442.1	477.3	504.7	502.8	495.0	472.6	441.7
49°	351.2	367.7	363.4	364.9	413.5	445.6	469.5	467.5	460.1	439.3	409.2
49.5°	327.7	343.4	339.5	341.1	386.1	415.9	436.2	434.6	426.0	406.8	381.8
50°	305.0	319.9	317.2	319.5	363.0	387.7	404.1	403.3	395.1	379.8	354.8
50.5°	283.5	297.6	296.0	298.8	339.5	363.0	377.1	376.3	368.5	352.8	327.7
51°	262.7	276.1	276.1	279.6	316.4	338.3	350.1	349.3	341.5	325.4	300.7
51.5°	242.8	255.7	256.5	260.8	292.9	314.0	323.1	322.7	314.4	298.4	273.7
52°	224.4	236.5	238.1	243.2	269.8	289.4	296.0	295.6	287.4	271.4	250.6
52.5°	206.4	218.1	220.5	225.5	249.8	264.7	269.0	269.0	260.8	247.1	229.1
53°	189.5	200.1	203.2	208.7	230.2	244.0	247.1	246.7	238.9	225.9	209.5
53.5°	173.5	183.3	187.2	192.7	212.6	224.0	226.7	225.2	218.5	206.4	190.7
54°	158.6	167.6	171.9	177.0	195.4	204.4	207.5	205.6	199.3	188.3	173.9
54.5°	145.7	153.5	157.4	162.5	178.6	186.4	189.1	187.2	180.9	170.7	157.8
55°	133.9	140.2	144.1	148.8	163.3	169.9	171.9	170.7	165.2	155.5	144.5
55.5°	122.6	128.8	132.4	137.1	148.8	154.3	156.2	155.5	150.4	142.1	131.6
56°	110.8	117.5	120.6	124.9	135.5	140.2	142.1	141.4	137.1	129.6	118.3
56.5°	99.1	106.1	108.9	112.8	123.0	127.3	129.2	128.0	124.1	115.9	105.7
57°	87.3	94.4	97.1	100.6	110.0	114.3	116.3	114.7	111.6	104.2	94.4
57.5°	78.7	83.0	85.4	88.5	97.9	101.8	103.4	103.0	99.5	92.8	84.2
58°	71.3	74.8	76.7	79.1	87.3	90.5	92.0	91.6	88.9	83.0	75.2
58.5°	64.6	67.7	68.9	70.5	77.9	80.7	81.8	81.8	79.5	74.4	67.4
59°	58.7	61.5	62.3	63.4	69.3	71.3	72.8	72.8	70.9	67.0	60.7
59.5°	53.6	56.0	56.0	57.2	61.9	63.8	65.0	65.0	63.4	59.9	54.4
60°	48.9	50.9	51.3	51.7	55.6	57.2	58.0	58.3	57.2	54.0	49.3
60.5°	44.6	46.6	46.6	46.6	50.1	51.3	52.1	52.9	51.7	49.3	45.0
61°	40.7	42.7	42.7	42.3	45.4	46.6	47.0	47.8	46.6	44.6	40.7
61.5°	37.6	39.2	39.2	38.8	41.1	42.3	42.7	43.5	42.3	40.7	37.6
62°	34.5	36.0	35.6	35.6	37.6	38.4	38.8	39.5	38.8	37.2	34.9
62.5°	32.1	33.3	32.9	32.5	34.9	35.6	35.6	36.0	35.2	34.5	32.5
63°	29.4	30.9	30.5	29.8	32.1	32.9	33.3	33.7	32.9	32.1	29.8
63.5°	27.0	28.6	27.8	27.4	29.4	30.2	30.5	30.9	30.5	29.4	27.4
64°	25.1	26.2	25.8	25.5	27.0	27.4	28.2	28.6	28.2	27.0	24.7
64.5°	23.1	24.3	23.9	23.5	24.3	24.7	25.8	26.2	25.8	24.3	22.7
65°	21.5	22.7	22.3	21.5	22.3	22.7	23.1	23.5	23.1	22.7	21.1
65.5°	20.0	20.8	20.8	20.0	20.8	21.1	21.5	21.9	21.5	21.1	19.6
66°	18.4	19.6	19.2	18.8	19.2	19.6	20.0	20.4	20.0	19.6	18.4



TEST NUMBER: P776291

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	14.9	15.7	15.3	14.9	15.3	15.7	16.1	16.1	16.1	15.7	14.5
68°	13.7	14.5	14.5	14.1	14.1	14.5	14.9	14.9	14.9	14.5	13.7
68.5°	12.9	13.7	13.7	13.3	13.3	13.3	13.7	14.1	13.7	13.7	12.5
69°	12.1	12.5	12.5	12.1	12.5	12.5	12.9	12.9	12.9	12.5	11.7
69.5°	11.0	11.7	11.7	11.4	11.7	11.7	12.1	12.1	12.1	11.7	11.0
70°	10.2	11.0	11.0	10.6	10.6	11.0	11.4	11.4	11.4	11.0	10.2
70.5°	9.4	10.2	10.2	9.8	10.2	10.2	10.6	10.6	10.6	10.2	9.4
71°	9.0	9.4	9.4	9.0	9.4	9.4	9.8	9.8	9.8	9.4	9.0
71.5°	8.2	8.6	8.6	8.6	8.6	8.6	9.0	9.0	9.0	8.6	8.2
72°	7.4	8.2	8.2	7.8	8.2	8.2	8.2	8.6	8.2	8.2	7.8
72.5°	7.0	7.4	7.4	7.4	7.4	7.8	7.8	7.8	7.8	7.4	7.0
73°	6.3	7.0	7.0	6.7	7.0	7.0	7.4	7.4	7.0	7.0	6.7
73.5°	5.9	6.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7	6.3	6.3
74°	5.5	5.9	5.9	5.9	6.3	6.3	6.3	6.3	6.3	5.9	5.9
74.5°	5.1	5.5	5.5	5.5	5.5	5.9	5.9	5.9	5.9	5.5	5.1
75°	4.7	5.1	5.1	5.1	5.1	5.5	5.5	5.5	5.1	5.1	4.7
75.5°	4.3	4.7	4.7	4.7	4.7	5.1	5.1	5.1	4.7	4.7	4.3
76°	3.9	4.3	4.3	4.3	4.3	4.7	4.7	4.3	4.3	4.3	3.9
76.5°	3.5	3.9	3.9	3.9	4.3	4.3	4.3	4.3	3.9	3.9	3.9
77°	3.1	3.5	3.5	3.5	3.9	3.9	3.9	3.9	3.9	3.5	3.5
77.5°	2.7	3.1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.1	3.1
78°	2.7	2.7	3.1	3.1	3.1	3.5	3.1	3.1	3.1	3.1	2.7
78.5°	2.3	2.7	2.7	2.7	3.1	3.1	3.1	2.7	2.7	2.7	2.7
79°	2.0	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3
79.5°	2.0	2.0	2.3	2.3	2.3	2.7	2.3	2.3	2.3	2.0	2.3
80°	1.6	2.0	2.0	2.0	2.3	2.3	2.3	2.0	2.0	2.0	2.0
80.5°	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.6
81°	1.2	1.6	1.6	2.0	2.0	2.0	2.0	1.6	1.6	1.6	1.6
81.5°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.6
82°	0.8	1.2	1.2	1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.2
82.5°	0.8	0.8	1.2	1.2	1.2	1.6	1.2	1.2	1.2	0.8	1.2
83°	0.4	0.8	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8
83.5°	0.4	0.8	0.8	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.8
84°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.8
84.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.8
85°	0.4	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4
85.5°	0.0	0.4	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4	0.4
86°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
86.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4
87°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.4	0.4	0.4	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: P776291
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3000K

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: P776291

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3742.3	3742.3	3742.3	3742.3	3742.3	3742.3
0.5°	3741.5	3741.1	3741.5	3740.7	3739.9	3738.0
1°	3740.7	3738.8	3738.0	3736.8	3736.0	3734.9
1.5°	3738.8	3735.6	3733.7	3732.5	3732.1	3730.5
2°	3736.0	3731.7	3729.4	3727.8	3727.0	3725.8
2.5°	3732.1	3727.0	3723.1	3720.8	3720.4	3720.0
3°	3728.2	3721.1	3716.8	3713.7	3712.9	3713.3
3.5°	3723.5	3714.9	3709.0	3705.9	3705.1	3705.5
4°	3717.6	3707.4	3700.8	3696.5	3696.1	3697.3
4.5°	3711.0	3699.6	3691.8	3687.5	3686.3	3688.3
5°	3703.5	3690.6	3682.0	3676.9	3675.3	3677.7
5.5°	3694.9	3680.8	3670.2	3665.5	3664.4	3666.7
6°	3685.9	3670.2	3658.9	3652.6	3651.8	3653.8
6.5°	3675.7	3658.1	3646.4	3640.1	3638.5	3641.3
7°	3664.4	3645.6	3632.3	3625.6	3623.3	3626.8
7.5°	3651.8	3631.9	3617.8	3610.3	3608.0	3611.5
8°	3638.9	3617.0	3602.5	3593.9	3591.5	3595.1
8.5°	3624.4	3600.5	3585.3	3576.7	3573.9	3577.4
9°	3609.2	3583.3	3567.3	3557.5	3554.3	3558.2
9.5°	3592.3	3565.3	3548.5	3536.7	3534.4	3538.7
10°	3575.1	3545.7	3527.3	3516.0	3512.0	3517.1
10.5°	3556.3	3524.6	3505.4	3493.2	3489.7	3493.6
11°	3536.3	3503.0	3482.3	3468.2	3463.5	3470.1
11.5°	3515.6	3480.3	3456.8	3441.6	3438.0	3443.5
12°	3494.4	3455.7	3430.6	3414.1	3409.8	3415.7
12.5°	3470.9	3430.2	3403.2	3385.6	3380.1	3387.1
13°	3447.4	3404.0	3375.0	3355.8	3349.9	3357.8
13.5°	3422.4	3377.3	3346.8	3325.3	3319.8	3326.8
14°	3396.9	3349.5	3316.3	3294.7	3288.1	3294.7
14.5°	3369.5	3321.0	3286.9	3264.2	3256.3	3263.0
15°	3343.7	3292.0	3254.8	3231.7	3223.1	3230.5
15.5°	3315.5	3262.2	3225.0	3200.0	3190.6	3197.6
16°	3287.7	3232.9	3193.3	3167.1	3158.1	3165.5
16.5°	3258.7	3203.5	3164.3	3135.3	3126.3	3132.2
17°	3230.5	3172.2	3132.6	3102.1	3093.8	3100.5
17.5°	3201.1	3143.2	3101.7	3071.1	3060.9	3067.6
18°	3171.4	3112.6	3070.0	3039.0	3029.2	3035.5
18.5°	3142.0	3082.5	3040.6	3008.1	2998.3	3003.0
19°	3113.4	3052.7	3010.8	2979.5	2968.5	2973.2
19.5°	3084.8	3024.9	2981.9	2950.5	2938.8	2943.1
20°	3057.0	2995.6	2952.5	2921.2	2909.4	2915.3
20.5°	3027.7	2966.2	2923.1	2892.2	2879.6	2885.5
21°	3000.6	2936.4	2891.4	2860.1	2849.9	2856.5



TEST NUMBER: P776291

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2911.4	2839.3	2786.5	2755.5	2745.3	2752.4
23°	2881.2	2802.1	2748.1	2714.4	2705.8	2714.4
23.5°	2850.7	2765.3	2707.4	2671.7	2663.9	2672.1
24°	2820.5	2725.4	2664.7	2626.7	2618.1	2627.1
24.5°	2784.1	2684.3	2621.2	2577.4	2569.9	2579.7
25°	2746.5	2641.2	2577.0	2526.4	2521.4	2533.1
25.5°	2705.4	2597.3	2531.1	2473.6	2468.1	2482.6
26°	2663.5	2553.1	2484.2	2420.3	2416.0	2433.6
26.5°	2616.5	2507.3	2434.8	2368.6	2360.8	2382.3
27°	2568.3	2460.7	2384.7	2317.7	2305.2	2332.2
27.5°	2515.9	2410.9	2333.0	2266.8	2250.0	2279.8
28°	2462.2	2360.0	2279.8	2217.5	2196.3	2228.1
28.5°	2405.1	2307.6	2225.3	2168.9	2141.9	2173.6
29°	2345.9	2252.3	2170.9	2120.0	2091.4	2119.6
29.5°	2286.0	2196.0	2115.7	2069.9	2037.8	2064.4
30°	2227.3	2137.6	2061.3	2019.4	1986.9	2008.0
30.5°	2166.6	2079.3	2006.0	1965.7	1936.3	1950.0
31°	2109.4	2019.7	1954.4	1911.7	1884.7	1893.7
31.5°	2053.4	1959.1	1900.3	1855.3	1832.2	1837.7
32°	1998.2	1899.1	1847.1	1797.3	1779.7	1782.1
32.5°	1944.2	1838.4	1793.4	1740.2	1726.1	1729.2
33°	1887.8	1777.4	1738.2	1684.6	1672.0	1676.3
33.5°	1833.0	1715.9	1681.0	1629.3	1618.0	1622.3
34°	1777.8	1657.9	1625.4	1574.5	1563.6	1569.4
34.5°	1722.2	1600.0	1567.9	1519.7	1507.6	1515.8
35°	1665.4	1542.8	1510.7	1468.4	1454.7	1461.4
35.5°	1608.6	1489.2	1452.4	1418.3	1402.2	1411.2
36°	1551.4	1435.5	1388.5	1366.6	1352.9	1360.3
36.5°	1494.6	1383.0	1334.5	1315.3	1303.6	1308.6
37°	1437.9	1330.6	1280.1	1263.6	1254.2	1257.4
37.5°	1382.3	1278.5	1226.0	1212.3	1205.3	1206.1
38°	1328.2	1226.0	1171.6	1160.6	1155.9	1154.8
38.5°	1275.4	1173.9	1117.9	1108.9	1107.8	1106.6
39°	1222.9	1123.0	1068.2	1058.4	1060.0	1060.4
39.5°	1172.0	1072.5	1017.7	1007.9	1010.3	1014.6
40°	1121.1	1024.0	968.0	958.2	962.1	969.9
40.5°	1071.4	975.4	920.2	909.6	915.5	925.3
41°	1022.4	927.3	873.6	861.9	870.1	882.6
41.5°	974.2	880.3	827.4	816.0	825.4	841.1
42°	926.5	836.0	783.5	771.4	781.2	801.2
42.5°	880.7	791.0	741.3	727.5	739.7	760.8
43°	835.6	748.3	700.1	684.9	698.6	722.5
43.5°	791.4	706.4	660.2	642.6	659.0	685.3



TEST NUMBER: P776291

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	666.1	590.1	549.8	528.6	547.8	580.3
45.5°	626.9	553.7	516.5	494.2	513.4	548.2
46°	588.1	519.2	484.4	461.3	480.5	516.5
46.5°	550.2	486.3	453.1	430.3	449.5	486.3
47°	513.7	454.6	424.1	402.5	420.6	456.2
47.5°	477.7	423.3	396.3	376.7	392.8	429.2
48°	443.7	394.7	370.0	351.6	367.3	402.1
48.5°	412.3	367.7	345.0	328.5	343.0	376.3
49°	381.4	341.5	320.7	306.6	319.9	351.2
49.5°	354.8	316.8	298.0	287.0	299.6	327.7
50°	328.1	292.5	276.5	267.8	278.8	305.0
50.5°	301.5	269.8	255.7	249.0	260.0	283.5
51°	274.9	248.7	236.1	231.4	241.6	262.7
51.5°	252.6	228.3	217.7	215.0	224.0	242.8
52°	231.8	209.5	200.1	198.9	207.1	224.4
52.5°	211.5	190.7	183.6	183.3	191.5	206.4
53°	193.4	173.5	168.0	168.0	176.2	189.5
53.5°	176.2	157.8	153.5	154.3	161.7	173.5
54°	160.2	143.7	139.8	141.4	148.0	158.6
54.5°	146.1	132.0	128.4	130.0	137.1	145.7
55°	133.1	120.2	117.1	118.6	125.3	133.9
55.5°	120.2	108.1	105.3	107.3	113.6	122.6
56°	107.3	96.3	94.0	95.9	101.8	110.8
56.5°	95.9	84.6	82.6	84.6	90.1	99.1
57°	85.4	75.2	73.6	75.6	80.7	87.3
57.5°	76.0	67.4	66.2	68.1	72.8	78.7
58°	67.7	60.7	59.5	61.5	66.2	71.3
58.5°	61.1	54.4	54.0	55.6	59.9	64.6
59°	54.8	49.3	48.9	50.9	54.8	58.7
59.5°	49.7	44.6	44.2	46.2	49.7	53.6
60°	45.0	40.7	40.3	42.3	45.8	48.9
60.5°	41.1	37.2	36.8	38.8	41.9	44.6
61°	37.6	34.1	33.7	35.6	38.4	40.7
61.5°	34.9	31.3	30.9	32.9	35.6	37.6
62°	32.1	28.6	28.6	30.2	32.9	34.5
62.5°	29.8	26.2	26.2	27.8	30.2	32.1
63°	27.0	24.3	24.3	25.8	27.8	29.4
63.5°	24.7	22.3	22.7	23.9	25.8	27.0
64°	22.7	20.8	20.8	21.9	23.9	25.1
64.5°	21.1	19.2	19.2	20.4	21.9	23.1
65°	19.6	18.0	18.0	18.8	20.4	21.5
65.5°	18.0	16.4	16.8	17.6	19.2	20.0
66°	16.8	15.3	15.7	16.4	17.6	18.4



TEST NUMBER: P776291

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	13.3	12.5	12.5	13.3	14.1	14.9
68°	12.5	11.7	11.7	12.5	13.3	13.7
68.5°	11.7	11.0	11.0	11.4	12.1	12.9
69°	11.0	10.2	10.2	10.6	11.4	12.1
69.5°	10.2	9.4	9.4	9.8	10.6	11.0
70°	9.4	8.6	8.6	9.4	9.8	10.2
70.5°	9.0	8.2	8.2	8.6	9.0	9.4
71°	8.2	7.4	7.4	7.8	8.2	9.0
71.5°	7.8	7.0	7.0	7.4	7.8	8.2
72°	7.0	6.7	6.7	7.0	7.0	7.4
72.5°	6.7	5.9	5.9	6.3	6.7	7.0
73°	6.3	5.5	5.5	5.9	6.3	6.3
73.5°	5.9	5.1	5.1	5.5	5.5	5.9
74°	5.5	4.7	4.7	5.1	5.1	5.5
74.5°	5.1	4.3	4.3	4.7	4.7	5.1
75°	4.7	3.9	3.9	4.3	4.3	4.7
75.5°	4.3	3.9	3.9	3.9	3.9	4.3
76°	3.9	3.5	3.5	3.5	3.5	3.9
76.5°	3.5	3.1	3.1	3.1	3.1	3.5
77°	3.1	2.7	2.7	2.7	3.1	3.1
77.5°	3.1	2.7	2.7	2.7	2.7	2.7
78°	2.7	2.3	2.3	2.3	2.3	2.7
78.5°	2.3	2.3	2.3	2.3	2.3	2.3
79°	2.3	2.0	2.0	2.0	2.0	2.0
79.5°	2.0	2.0	2.0	2.0	1.6	2.0
80°	2.0	1.6	1.6	1.6	1.6	1.6
80.5°	1.6	1.6	1.6	1.6	1.2	1.6
81°	1.6	1.2	1.2	1.2	1.2	1.2
81.5°	1.2	1.2	1.2	1.2	1.2	1.2
82°	1.2	1.2	1.2	0.8	0.8	0.8
82.5°	1.2	0.8	0.8	0.8	0.8	0.8
83°	0.8	0.8	0.8	0.8	0.8	0.4
83.5°	0.8	0.8	0.8	0.8	0.4	0.4
84°	0.8	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.4	0.4
85.5°	0.4	0.4	0.4	0.4	0.0	0.0
86°	0.4	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: P776291

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3000K

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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Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report





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

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Scaled Data Report





21.5°	2824.0	2844.4	2874.2	2912.5	2977.5	3022.6	3056.2	3070.7	3068.0	3049.2	3015.9
22°	2790.4	2813.9	2844.0	2884.0	2947.4	2994.4	3027.3	3042.9	3039.8	3020.2	2986.9



44°	648.8	670.0	685.3	711.9	770.6	823.5	870.9	892.0	872.0	840.7	803.5
44.5°	614.4	634.7	646.9	668.8	728.3	778.8	825.8	843.1	824.7	796.1	757.7



66.5°	17.2	18.0	18.0	17.2	17.6	18.0	18.4	18.8	18.4	18.0	16.8
67°	16.1	16.8	16.4	16.1	16.4	16.8	17.2	17.2	17.2	16.8	15.7



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°	2972.1	2905.5	2858.5	2826.0	2817.8	2824.0
22°	2941.5	2872.6	2823.3	2791.9	2782.5	2790.4



44°	748.7	666.5	622.2	603.8	621.0	648.8
44.5°	707.6	627.7	585.0	565.4	584.2	614.4



66.5°	15.7	14.5	14.5	15.3	16.4	17.2
67°	14.5	13.3	13.7	14.5	15.3	16.1

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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)