

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: P776292

Luminaire Tested: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776292
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: HCDJBS3040CSD-HCD4TRH-4000lm-3500K
Description: 4 INCH ROUND MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

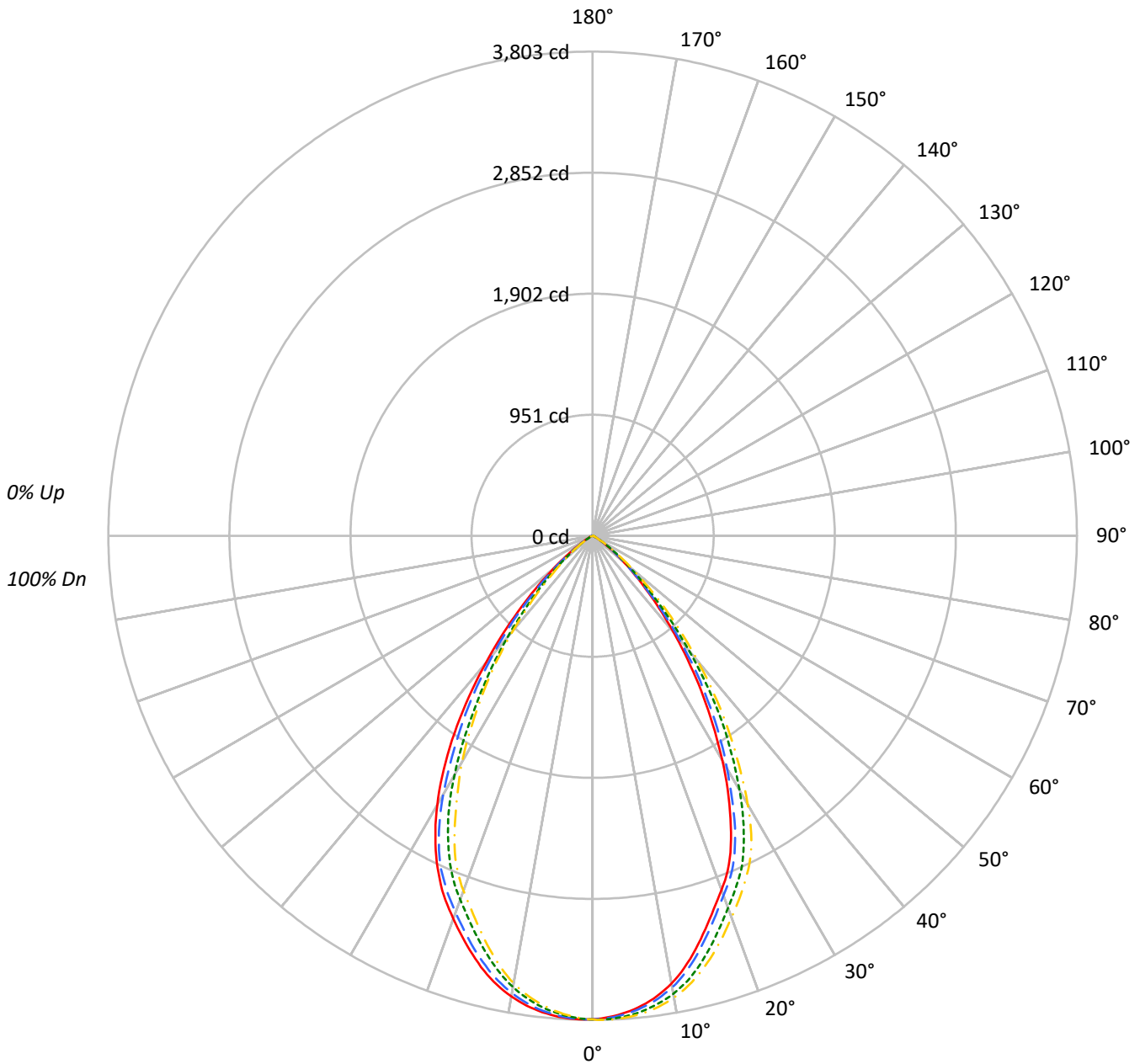
Lumens per Lamp: N/A
Luminaire Lumens: 4281.2 lumens
Efficiency: N/A
Efficacy: 111.2 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 0.98 / 0.98
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (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: P776292
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	113	110	107	105	111	108	105	103	104	102	100	100	99	97	97	95	94	92																			
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85																			
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78																			
4	95	87	81	76	93	85	80	75	83	78	75	81	77	74	79	76	73	71																			
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65																			
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60																			
7	80	70	63	58	78	69	63	58	68	62	58	66	61	58	65	61	57	56																			
8	75	65	58	54	74	64	58	54	63	58	54	62	57	53	61	57	53	52																			
9	71	61	54	50	70	60	54	50	59	54	50	58	53	50	58	53	49	48																			
10	68	57	51	47	67	57	51	47	56	50	46	55	50	46	54	50	46	45																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	478141	478141	478141	478141
5°	471680	476253	477163	473348
10°	456304	466770	469569	460023
15°	427310	445185	452495	435453
20°	396382	416619	428485	407297
25°	357106	387808	399944	372339
30°	296247	335527	354651	315371
35°	227932	270012	290415	240637
40°	161772	193577	215066	170791
45°	104865	124033	140728	106627
50°	60635	72148	78530	58149
55°	29840	36379	36817	26768
60°	12509	14221	14599	10395
65°	6522	6760	6998	5449
70°	3790	3937	4232	3201
75°	2334	2528	2528	1945
80°	1160	1739	1449	1160
85°	578	1155	578	578

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 143913 cd/sqm



TEST NUMBER: P776292

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	354.5	8.3
10°-20°	946.4	22.1
20°-30°	1240.4	29.0
30°-40°	1038.8	24.3
40°-50°	526.7	12.3
50°-60°	143.9	3.4
60°-70°	24.2	0.6
70°-80°	5.6	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°	2541.3	59.4
0°-40°	3580.0	83.6
0°-60°	4250.7	99.3
0°-90°	4281.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4281.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3799	3799	3799	3799	3799	
5°	3734	3770	3777	3747	3734	351
15°	3280	3417	3473	3342	3280	919
25°	2572	2793	2880	2681	2572	1166
35°	1484	1758	1890	1566	1484	924
45°	589	697	791	599	589	464
55°	136	166	168	122	136	132
65°	22	23	24	18	22	24
75°	5	5	5	4	5	5
85°	0	1	0	0	0	0
90°	0	0	0	0	0	0



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CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3799.3	3799.3	3799.3	3799.3	3799.3	3799.3	3799.3	3799.3	3799.3	3799.3	3799.3
0.5°	3795.0	3795.4	3797.0	3799.7	3800.9	3802.1	3802.5	3802.1	3798.9	3798.1	3798.5
1°	3791.8	3792.2	3795.0	3798.1	3800.9	3802.5	3803.3	3802.9	3800.1	3798.5	3798.5
1.5°	3787.4	3789.0	3792.2	3796.2	3800.1	3802.5	3803.3	3803.3	3799.7	3798.1	3796.6
2°	3782.6	3785.0	3788.2	3793.4	3798.1	3801.3	3803.3	3802.9	3798.9	3796.6	3795.4
2.5°	3776.7	3779.5	3784.2	3789.4	3795.8	3800.1	3802.1	3801.3	3797.3	3794.2	3792.6
3°	3769.9	3773.5	3778.3	3785.0	3791.8	3797.0	3799.7	3799.7	3794.6	3791.4	3789.0
3.5°	3762.0	3766.3	3772.3	3778.7	3787.8	3793.8	3796.6	3796.2	3791.8	3787.8	3784.6
4°	3753.6	3758.4	3764.4	3771.9	3783.0	3789.4	3793.4	3792.6	3787.8	3783.4	3779.9
4.5°	3744.5	3749.2	3756.4	3764.8	3777.1	3784.6	3789.4	3788.6	3782.2	3777.9	3773.5
5°	3733.7	3740.1	3746.9	3755.6	3769.9	3779.1	3783.8	3783.0	3777.1	3771.9	3767.1
5.5°	3722.6	3728.6	3736.9	3746.5	3762.4	3772.3	3777.9	3776.7	3770.3	3764.8	3759.2
6°	3709.5	3716.6	3726.6	3736.5	3753.2	3764.8	3771.1	3770.3	3763.2	3757.2	3751.2
6.5°	3696.8	3705.1	3714.7	3726.2	3744.1	3756.8	3764.0	3762.4	3755.2	3748.1	3741.3
7°	3682.1	3690.8	3701.9	3714.7	3733.7	3747.7	3755.2	3754.4	3746.1	3738.9	3731.0
7.5°	3666.6	3675.3	3688.0	3701.9	3722.6	3737.7	3745.3	3744.5	3736.5	3728.2	3719.4
8°	3649.9	3659.8	3673.3	3688.4	3710.7	3726.6	3734.5	3732.9	3726.2	3717.0	3707.1
8.5°	3632.0	3642.3	3657.0	3673.3	3697.6	3714.3	3723.4	3722.6	3714.3	3704.7	3693.6
9°	3612.5	3623.6	3639.1	3657.4	3684.0	3701.5	3710.7	3709.9	3701.9	3691.6	3679.3
9.5°	3592.6	3604.1	3620.8	3640.3	3668.5	3687.2	3697.6	3696.8	3689.2	3677.7	3663.8
10°	3570.7	3583.5	3601.4	3622.0	3652.6	3672.1	3682.1	3682.5	3674.5	3663.0	3647.5
10.5°	3546.9	3560.4	3581.1	3602.2	3634.8	3655.0	3666.6	3667.8	3659.4	3646.3	3630.8
11°	3523.0	3537.0	3557.6	3581.5	3616.1	3637.5	3650.3	3650.7	3642.7	3629.6	3612.1
11.5°	3496.0	3511.9	3533.4	3558.8	3596.6	3619.2	3632.4	3633.6	3625.6	3611.3	3592.2
12°	3467.8	3484.1	3507.1	3535.0	3575.5	3598.6	3612.9	3614.9	3607.3	3592.2	3572.3
12.5°	3438.8	3455.5	3479.7	3508.7	3551.7	3577.1	3593.8	3596.2	3587.8	3571.9	3550.9
13°	3408.9	3426.4	3451.1	3482.9	3527.4	3555.2	3571.5	3574.7	3566.8	3550.1	3528.2
13.5°	3377.5	3395.0	3422.1	3453.5	3502.0	3530.2	3549.7	3553.3	3544.9	3527.8	3505.2
14°	3344.9	3364.0	3390.7	3424.1	3474.9	3505.6	3525.4	3529.4	3521.5	3504.8	3479.7
14.5°	3312.7	3330.6	3358.5	3393.0	3446.3	3479.3	3500.4	3506.3	3498.4	3480.5	3455.1
15°	3279.7	3298.8	3326.3	3362.8	3416.9	3452.3	3474.9	3480.1	3473.0	3454.7	3429.2
15.5°	3246.4	3265.8	3293.7	3331.0	3387.9	3424.1	3449.1	3455.5	3447.5	3429.6	3403.0
16°	3213.8	3232.8	3261.9	3298.8	3357.7	3396.2	3422.5	3429.2	3422.1	3403.0	3376.0
16.5°	3180.0	3199.8	3228.9	3267.8	3327.8	3367.6	3393.8	3403.8	3395.8	3376.7	3348.1
17°	3147.8	3166.4	3196.3	3234.8	3296.0	3338.6	3365.6	3376.0	3368.4	3349.7	3319.5
17.5°	3114.4	3133.8	3162.9	3203.0	3264.6	3308.0	3337.4	3347.3	3341.0	3321.1	3291.7
18°	3081.8	3101.6	3131.1	3171.2	3234.0	3278.6	3308.0	3318.7	3312.7	3293.3	3261.9
18.5°	3048.8	3068.6	3098.1	3138.6	3202.6	3248.3	3279.0	3291.7	3283.7	3265.0	3232.4
19°	3018.6	3037.6	3066.7	3107.2	3171.6	3217.3	3249.5	3260.7	3255.5	3236.4	3203.8
19.5°	2987.9	3007.0	3036.4	3076.2	3141.8	3187.5	3220.1	3232.0	3227.3	3208.2	3176.0
20°	2959.7	2977.6	3006.2	3046.4	3110.8	3157.3	3189.9	3204.2	3199.4	3180.4	3147.4
20.5°	2929.5	2948.2	2976.8	3016.2	3081.4	3127.1	3161.3	3175.6	3171.2	3152.5	3118.7
21°	2900.1	2918.4	2947.8	2986.4	3052.0	3098.1	3131.9	3145.8	3143.0	3124.3	3090.5



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CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2794.3	2820.2	2854.8	2897.3	2961.7	3010.2	3045.6	3061.5	3056.3	3035.7	3000.3
23°	2755.8	2781.2	2818.6	2864.7	2931.5	2978.0	3016.6	3031.3	3024.9	3000.3	2968.5
23.5°	2712.8	2738.7	2780.0	2827.7	2900.9	2946.2	2985.6	2998.7	2988.7	2965.3	2936.7
24°	2667.1	2695.0	2737.9	2788.4	2870.3	2914.0	2954.2	2966.1	2952.6	2929.9	2904.5
24.5°	2619.0	2647.3	2693.8	2746.6	2832.5	2882.2	2923.1	2933.9	2916.4	2894.5	2872.7
25°	2571.7	2599.5	2648.0	2700.9	2792.8	2850.4	2892.1	2901.3	2880.2	2859.1	2833.3
25.5°	2520.4	2549.5	2599.5	2653.2	2751.0	2811.8	2860.7	2868.7	2844.0	2819.8	2793.2
26°	2470.7	2502.1	2549.5	2601.1	2706.5	2771.3	2823.8	2828.5	2802.7	2775.7	2751.0
26.5°	2418.7	2452.5	2496.2	2547.1	2661.6	2729.1	2784.4	2789.2	2761.0	2732.3	2706.5
27°	2367.8	2402.0	2441.7	2492.2	2615.1	2684.6	2743.1	2744.3	2717.2	2689.0	2660.4
27.5°	2314.5	2350.3	2383.7	2438.5	2568.1	2640.9	2699.7	2700.9	2673.1	2645.3	2611.9
28°	2262.0	2298.2	2328.0	2386.1	2518.8	2595.2	2652.0	2653.2	2628.6	2600.3	2562.2
28.5°	2206.8	2245.3	2272.0	2334.0	2466.4	2548.7	2601.9	2605.9	2584.8	2555.0	2510.9
29°	2151.9	2191.3	2215.9	2283.1	2414.3	2500.2	2550.6	2555.8	2537.9	2507.7	2458.0
29.5°	2095.9	2134.8	2162.6	2233.8	2360.6	2450.5	2495.4	2504.9	2490.2	2459.6	2403.2
30°	2038.6	2076.8	2110.2	2183.3	2308.9	2398.8	2437.7	2450.5	2440.5	2408.7	2344.7
30.5°	1979.8	2019.1	2057.7	2134.0	2250.1	2343.9	2377.3	2395.6	2390.4	2357.4	2286.3
31°	1922.5	1961.5	2005.6	2080.8	2194.8	2287.5	2319.3	2338.8	2337.6	2305.8	2227.8
31.5°	1865.7	1903.0	1953.5	2028.7	2140.0	2227.8	2257.7	2280.7	2284.3	2250.5	2167.8
32°	1809.2	1845.8	1900.7	1972.6	2088.7	2169.4	2198.0	2221.5	2229.4	2194.8	2109.8
32.5°	1755.6	1788.6	1847.0	1917.4	2032.3	2111.0	2139.2	2163.8	2176.2	2139.2	2051.7
33°	1701.9	1734.1	1793.7	1859.7	1977.8	2050.1	2081.9	2105.8	2119.7	2084.7	1994.1
33.5°	1647.0	1679.6	1738.9	1801.3	1924.1	1988.9	2024.7	2047.8	2064.5	2027.1	1938.0
34°	1593.4	1624.4	1682.4	1742.0	1871.6	1925.3	1968.2	1990.5	2006.4	1967.8	1882.4
34.5°	1538.9	1568.3	1626.0	1686.0	1813.6	1862.1	1912.2	1934.5	1949.6	1911.0	1827.5
35°	1483.6	1511.5	1570.7	1630.7	1757.5	1798.9	1854.9	1879.2	1890.3	1852.2	1771.9
35.5°	1432.8	1458.2	1516.2	1577.5	1699.5	1738.1	1798.5	1824.3	1833.1	1791.3	1717.0
36°	1381.1	1406.1	1462.6	1525.4	1644.6	1677.6	1741.6	1768.3	1772.3	1731.7	1662.1
36.5°	1328.6	1354.4	1425.6	1472.9	1581.8	1618.8	1684.8	1713.8	1712.6	1671.3	1606.1
37°	1276.5	1302.4	1370.7	1412.9	1523.4	1560.4	1626.4	1657.0	1652.2	1612.4	1549.2
37.5°	1224.4	1250.7	1316.3	1362.8	1463.0	1504.3	1567.5	1600.9	1595.0	1553.6	1492.4
38°	1172.4	1199.0	1261.8	1312.3	1405.7	1449.8	1509.5	1544.1	1536.1	1495.6	1434.7
38.5°	1123.5	1151.3	1206.9	1262.2	1345.3	1394.2	1452.6	1487.2	1478.5	1438.3	1378.7
39°	1076.6	1104.4	1156.5	1212.1	1289.2	1340.5	1396.2	1430.4	1422.4	1382.7	1323.8
39.5°	1030.0	1056.3	1106.0	1158.4	1231.6	1285.7	1340.9	1375.1	1366.4	1326.6	1270.2
40°	984.7	1008.6	1055.9	1104.8	1178.3	1233.6	1285.7	1319.1	1309.1	1271.7	1215.7
40.5°	939.4	964.0	1007.4	1053.1	1122.3	1179.5	1232.4	1264.2	1253.9	1216.9	1165.6
41°	896.1	919.1	958.5	1002.2	1071.0	1128.2	1180.7	1212.1	1198.6	1160.4	1112.7
41.5°	853.9	877.8	911.2	953.3	1019.3	1076.6	1128.6	1159.2	1144.1	1106.8	1062.2
42°	813.4	836.0	865.5	905.6	970.0	1027.3	1078.1	1107.6	1089.3	1054.3	1011.4
42.5°	772.4	795.5	821.3	859.1	921.5	977.2	1028.4	1055.1	1036.8	1002.6	961.7
43°	733.5	755.7	777.2	813.0	874.2	929.1	979.2	1005.0	985.1	953.3	912.4
43.5°	695.7	718.0	735.9	766.9	826.9	881.8	931.1	956.1	934.2	902.4	863.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	589.2	609.8	619.4	636.5	696.9	749.0	793.9	808.6	790.7	762.5	723.1
45.5°	556.6	576.4	583.2	596.7	657.5	706.0	750.6	761.3	745.8	718.8	679.0
46°	524.4	544.2	548.2	557.0	618.6	665.9	709.6	716.8	702.5	675.0	636.9
46.5°	493.8	513.2	514.0	520.0	581.6	626.9	667.5	671.1	659.9	632.5	595.9
47°	463.1	482.2	482.2	485.8	546.2	588.8	626.9	628.9	618.2	593.5	555.8
47.5°	435.7	453.2	451.6	453.2	512.0	552.2	587.2	587.6	578.0	555.4	518.4
48°	408.3	425.8	422.6	423.0	479.4	517.6	549.8	548.6	539.5	515.6	482.6
48.5°	382.0	399.1	395.6	396.0	448.8	484.6	512.4	510.4	502.5	479.8	448.4
49°	356.6	373.3	368.9	370.5	419.8	452.4	476.7	474.7	467.1	446.0	415.4
49.5°	332.7	348.6	344.7	346.3	392.0	422.2	442.9	441.3	432.5	413.0	387.6
50°	309.7	324.8	322.0	324.4	368.5	393.6	410.3	409.5	401.1	385.6	360.2
50.5°	287.8	302.1	300.5	303.3	344.7	368.5	382.8	382.0	374.1	358.2	332.7
51°	266.8	280.3	280.3	283.8	321.2	343.5	355.4	354.6	346.7	330.4	305.3
51.5°	246.5	259.6	260.4	264.8	297.4	318.8	328.0	327.6	319.2	302.9	277.9
52°	227.8	240.1	241.7	246.9	273.9	293.8	300.5	300.1	291.8	275.5	254.4
52.5°	209.5	221.4	223.8	229.0	253.6	268.7	273.1	273.1	264.8	250.9	232.6
53°	192.4	203.1	206.3	211.9	233.8	247.7	250.9	250.5	242.5	229.4	212.7
53.5°	176.1	186.1	190.0	195.6	215.9	227.4	230.2	228.6	221.8	209.5	193.6
54°	161.0	170.1	174.5	179.7	198.4	207.5	210.7	208.7	202.4	191.2	176.5
54.5°	147.9	155.8	159.8	165.0	181.3	189.2	192.0	190.0	183.7	173.3	160.2
55°	136.0	142.3	146.3	151.1	165.8	172.5	174.5	173.3	167.8	157.8	146.7
55.5°	124.4	130.8	134.4	139.1	151.1	156.6	158.6	157.8	152.7	144.3	133.6
56°	112.5	119.3	122.4	126.8	137.6	142.3	144.3	143.5	139.1	131.6	120.1
56.5°	100.6	107.7	110.5	114.5	124.8	129.2	131.2	130.0	126.0	117.7	107.3
57°	88.7	95.8	98.6	102.2	111.7	116.1	118.1	116.5	113.3	105.7	95.8
57.5°	79.9	84.3	86.7	89.8	99.4	103.4	105.0	104.6	101.0	94.2	85.5
58°	72.4	75.9	77.9	80.3	88.7	91.8	93.4	93.0	90.2	84.3	76.3
58.5°	65.6	68.8	70.0	71.6	79.1	81.9	83.1	83.1	80.7	75.5	68.4
59°	59.6	62.4	63.2	64.4	70.4	72.4	73.9	73.9	72.0	68.0	61.6
59.5°	54.5	56.8	56.8	58.0	62.8	64.8	66.0	66.0	64.4	60.8	55.3
60°	49.7	51.7	52.1	52.5	56.5	58.0	58.8	59.2	58.0	54.9	50.1
60.5°	45.3	47.3	47.3	47.3	50.9	52.1	52.9	53.7	52.5	50.1	45.7
61°	41.3	43.3	43.3	42.9	46.1	47.3	47.7	48.5	47.3	45.3	41.3
61.5°	38.2	39.8	39.8	39.4	41.7	42.9	43.3	44.1	42.9	41.3	38.2
62°	35.0	36.6	36.2	36.2	38.2	39.0	39.4	40.2	39.4	37.8	35.4
62.5°	32.6	33.8	33.4	33.0	35.4	36.2	36.2	36.6	35.8	35.0	33.0
63°	29.8	31.4	31.0	30.2	32.6	33.4	33.8	34.2	33.4	32.6	30.2
63.5°	27.4	29.0	28.2	27.8	29.8	30.6	31.0	31.4	31.0	29.8	27.8
64°	25.4	26.6	26.2	25.8	27.4	27.8	28.6	29.0	28.6	27.4	25.0
64.5°	23.5	24.6	24.3	23.9	24.6	25.0	26.2	26.6	26.2	24.6	23.1
65°	21.9	23.1	22.7	21.9	22.7	23.1	23.5	23.9	23.5	23.1	21.5
65.5°	20.3	21.1	21.1	20.3	21.1	21.5	21.9	22.3	21.9	21.5	19.9
66°	18.7	19.9	19.5	19.1	19.5	19.9	20.3	20.7	20.3	19.9	18.7



TEST NUMBER: P776292

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	15.1	15.9	15.5	15.1	15.5	15.9	16.3	16.3	16.3	15.9	14.7
68°	13.9	14.7	14.7	14.3	14.3	14.7	15.1	15.1	15.1	14.7	13.9
68.5°	13.1	13.9	13.9	13.5	13.5	13.5	13.9	14.3	13.9	13.9	12.7
69°	12.3	12.7	12.7	12.3	12.7	12.7	13.1	13.1	13.1	12.7	11.9
69.5°	11.1	11.9	11.9	11.5	11.9	11.9	12.3	12.3	12.3	11.9	11.1
70°	10.3	11.1	11.1	10.7	10.7	11.1	11.5	11.5	11.5	11.1	10.3
70.5°	9.5	10.3	10.3	9.9	10.3	10.3	10.7	10.7	10.7	10.3	9.5
71°	9.1	9.5	9.5	9.1	9.5	9.5	9.9	9.9	9.9	9.5	9.1
71.5°	8.3	8.7	8.7	8.7	8.7	8.7	9.1	9.1	9.1	8.7	8.3
72°	7.6	8.3	8.3	8.0	8.3	8.3	8.3	8.7	8.3	8.3	8.0
72.5°	7.2	7.6	7.6	7.6	7.6	8.0	8.0	8.0	8.0	7.6	7.2
73°	6.4	7.2	7.2	6.8	7.2	7.2	7.6	7.6	7.2	7.2	6.8
73.5°	6.0	6.4	6.4	6.4	6.8	6.8	6.8	6.8	6.8	6.4	6.4
74°	5.6	6.0	6.0	6.0	6.4	6.4	6.4	6.4	6.4	6.0	6.0
74.5°	5.2	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0	5.6	5.2
75°	4.8	5.2	5.2	5.2	5.2	5.6	5.6	5.6	5.2	5.2	4.8
75.5°	4.4	4.8	4.8	4.8	4.8	5.2	5.2	5.2	4.8	4.8	4.4
76°	4.0	4.4	4.4	4.4	4.4	4.8	4.8	4.4	4.4	4.4	4.0
76.5°	3.6	4.0	4.0	4.0	4.4	4.4	4.4	4.4	4.0	4.0	4.0
77°	3.2	3.6	3.6	3.6	4.0	4.0	4.0	4.0	4.0	3.6	3.6
77.5°	2.8	3.2	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.2	3.2
78°	2.8	2.8	3.2	3.2	3.2	3.6	3.2	3.2	3.2	3.2	2.8
78.5°	2.4	2.8	2.8	2.8	3.2	3.2	3.2	2.8	2.8	2.8	2.8
79°	2.0	2.4	2.4	2.8	2.8	2.8	2.8	2.8	2.8	2.4	2.4
79.5°	2.0	2.0	2.4	2.4	2.4	2.8	2.4	2.4	2.4	2.0	2.4
80°	1.6	2.0	2.0	2.0	2.4	2.4	2.4	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: P776292
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-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: P776292

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3799.3	3799.3	3799.3	3799.3	3799.3	3799.3
0.5°	3798.5	3798.1	3798.5	3797.7	3797.0	3795.0
1°	3797.7	3795.8	3795.0	3793.8	3793.0	3791.8
1.5°	3795.8	3792.6	3790.6	3789.4	3789.0	3787.4
2°	3793.0	3788.6	3786.2	3784.6	3783.8	3782.6
2.5°	3789.0	3783.8	3779.9	3777.5	3777.1	3776.7
3°	3785.0	3777.9	3773.5	3770.3	3769.5	3769.9
3.5°	3780.3	3771.5	3765.5	3762.4	3761.6	3762.0
4°	3774.3	3764.0	3757.2	3752.8	3752.4	3753.6
4.5°	3767.5	3756.0	3748.1	3743.7	3742.5	3744.5
5°	3760.0	3746.9	3738.1	3732.9	3731.4	3733.7
5.5°	3751.2	3736.9	3726.2	3721.4	3720.2	3722.6
6°	3742.1	3726.2	3714.7	3708.3	3707.5	3709.5
6.5°	3731.8	3713.9	3701.9	3695.6	3694.0	3696.8
7°	3720.2	3701.1	3687.6	3680.9	3678.5	3682.1
7.5°	3707.5	3687.2	3672.9	3665.4	3663.0	3666.6
8°	3694.4	3672.1	3657.4	3648.7	3646.3	3649.9
8.5°	3679.7	3655.4	3639.9	3631.2	3628.4	3632.0
9°	3664.2	3637.9	3621.6	3611.7	3608.5	3612.5
9.5°	3647.1	3619.6	3602.6	3590.6	3588.2	3592.6
10°	3629.6	3599.8	3581.1	3569.6	3565.6	3570.7
10.5°	3610.5	3578.3	3558.8	3546.5	3542.9	3546.9
11°	3590.2	3556.4	3535.4	3521.1	3516.3	3523.0
11.5°	3569.2	3533.4	3509.5	3494.0	3490.4	3496.0
12°	3547.7	3508.3	3482.9	3466.2	3461.8	3467.8
12.5°	3523.8	3482.5	3455.1	3437.2	3431.6	3438.8
13°	3500.0	3455.9	3426.4	3407.0	3401.0	3408.9
13.5°	3474.5	3428.8	3397.8	3376.0	3370.4	3377.5
14°	3448.7	3400.6	3366.8	3344.9	3338.2	3344.9
14.5°	3420.9	3371.6	3337.0	3313.9	3306.0	3312.7
15°	3394.6	3342.2	3304.4	3280.9	3272.2	3279.7
15.5°	3366.0	3311.9	3274.2	3248.7	3239.2	3246.4
16°	3337.8	3282.1	3242.0	3215.3	3206.2	3213.8
16.5°	3308.4	3252.3	3212.6	3183.1	3174.0	3180.0
17°	3279.7	3220.5	3180.4	3149.4	3141.0	3147.8
17.5°	3249.9	3191.1	3149.0	3117.9	3107.6	3114.4
18°	3219.7	3160.1	3116.8	3085.3	3075.4	3081.8
18.5°	3189.9	3129.5	3086.9	3053.9	3044.0	3048.8
19°	3160.9	3099.3	3056.7	3024.9	3013.8	3018.6
19.5°	3131.9	3071.0	3027.3	2995.5	2983.6	2987.9
20°	3103.6	3041.2	2997.5	2965.7	2953.8	2959.7
20.5°	3073.8	3011.4	2967.7	2936.3	2923.5	2929.5
21°	3046.4	2981.2	2935.5	2903.7	2893.3	2900.1

TEST NUMBER: P776292

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2955.7	2882.6	2828.9	2797.5	2787.2	2794.3
23°	2925.1	2844.8	2790.0	2755.8	2747.0	2755.8
23.5°	2894.1	2807.5	2748.6	2712.4	2704.5	2712.8
24°	2863.5	2766.9	2705.3	2666.7	2658.0	2667.1
24.5°	2826.5	2725.2	2661.2	2616.6	2609.1	2619.0
25°	2788.4	2681.4	2616.2	2565.0	2559.8	2571.7
25.5°	2746.6	2636.9	2569.7	2511.3	2505.7	2520.4
26°	2704.1	2592.0	2522.0	2457.2	2452.9	2470.7
26.5°	2656.4	2545.5	2471.9	2404.7	2396.8	2418.7
27°	2607.5	2498.2	2421.0	2353.1	2340.3	2367.8
27.5°	2554.2	2447.7	2368.6	2301.4	2284.3	2314.5
28°	2499.8	2396.0	2314.5	2251.3	2229.8	2262.0
28.5°	2441.7	2342.7	2259.2	2202.0	2174.6	2206.8
29°	2381.7	2286.7	2204.0	2152.3	2123.3	2151.9
29.5°	2320.9	2229.4	2147.9	2101.4	2068.8	2095.9
30°	2261.2	2170.2	2092.7	2050.1	2017.1	2038.6
30.5°	2199.6	2111.0	2036.6	1995.7	1965.9	1979.8
31°	2141.6	2050.5	1984.1	1940.8	1913.4	1922.5
31.5°	2084.7	1988.9	1929.3	1883.6	1860.1	1865.7
32°	2028.7	1928.1	1875.2	1824.7	1806.8	1809.2
32.5°	1973.8	1866.5	1820.8	1766.7	1752.4	1755.6
33°	1916.6	1804.5	1764.7	1710.2	1697.5	1701.9
33.5°	1860.9	1742.0	1706.7	1654.2	1642.7	1647.0
34°	1804.9	1683.2	1650.2	1598.5	1587.4	1593.4
34.5°	1748.4	1624.4	1591.8	1542.9	1530.5	1538.9
35°	1690.8	1566.3	1533.7	1490.8	1476.9	1483.6
35.5°	1633.1	1511.9	1474.5	1439.9	1423.6	1432.8
36°	1575.1	1457.4	1409.7	1387.4	1373.5	1381.1
36.5°	1517.4	1404.1	1354.8	1335.4	1323.4	1328.6
37°	1459.8	1350.9	1299.6	1282.9	1273.3	1276.5
37.5°	1403.3	1298.0	1244.7	1230.8	1223.6	1224.4
38°	1348.5	1244.7	1189.5	1178.3	1173.6	1172.4
38.5°	1294.8	1191.8	1135.0	1125.8	1124.7	1123.5
39°	1241.5	1140.2	1084.5	1074.6	1076.2	1076.6
39.5°	1189.9	1088.9	1033.2	1023.3	1025.7	1030.0
40°	1138.2	1039.6	982.7	972.8	976.8	984.7
40.5°	1087.7	990.3	934.2	923.5	929.5	939.4
41°	1038.0	941.4	886.9	875.0	883.3	896.1
41.5°	989.1	893.7	840.0	828.5	838.0	853.9
42°	940.6	848.8	795.5	783.2	793.1	813.4
42.5°	894.1	803.0	752.6	738.6	751.0	772.4
43°	848.4	759.7	710.8	695.3	709.2	733.5
43.5°	803.4	717.2	670.3	652.4	669.1	695.7



TEST NUMBER: P776292

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	676.2	599.1	558.2	536.7	556.2	589.2
45.5°	636.5	562.1	524.4	501.7	521.2	556.6
46°	597.1	527.1	491.8	468.3	487.8	524.4
46.5°	558.6	493.8	460.0	436.9	456.4	493.8
47°	521.6	461.5	430.5	408.7	427.0	463.1
47.5°	485.0	429.7	402.3	382.4	398.7	435.7
48°	450.4	400.7	375.7	357.0	372.9	408.3
48.5°	418.6	373.3	350.2	333.5	348.2	382.0
49°	387.2	346.7	325.6	311.3	324.8	356.6
49.5°	360.2	321.6	302.5	291.4	304.1	332.7
50°	333.1	297.0	280.7	271.9	283.1	309.7
50.5°	306.1	273.9	259.6	252.8	264.0	287.8
51°	279.1	252.4	239.7	234.9	245.3	266.8
51.5°	256.4	231.8	221.0	218.3	227.4	246.5
52°	235.3	212.7	203.1	202.0	210.3	227.8
52.5°	214.7	193.6	186.4	186.1	194.4	209.5
53°	196.4	176.1	170.5	170.5	178.9	192.4
53.5°	178.9	160.2	155.8	156.6	164.2	176.1
54°	162.6	145.9	141.9	143.5	150.3	161.0
54.5°	148.3	134.0	130.4	132.0	139.1	147.9
55°	135.2	122.0	118.9	120.5	127.2	136.0
55.5°	122.0	109.7	106.9	108.9	115.3	124.4
56°	108.9	97.8	95.4	97.4	103.4	112.5
56.5°	97.4	85.9	83.9	85.9	91.4	100.6
57°	86.7	76.3	74.7	76.7	81.9	88.7
57.5°	77.1	68.4	67.2	69.2	73.9	79.9
58°	68.8	61.6	60.4	62.4	67.2	72.4
58.5°	62.0	55.3	54.9	56.5	60.8	65.6
59°	55.7	50.1	49.7	51.7	55.7	59.6
59.5°	50.5	45.3	44.9	46.9	50.5	54.5
60°	45.7	41.3	40.9	42.9	46.5	49.7
60.5°	41.7	37.8	37.4	39.4	42.5	45.3
61°	38.2	34.6	34.2	36.2	39.0	41.3
61.5°	35.4	31.8	31.4	33.4	36.2	38.2
62°	32.6	29.0	29.0	30.6	33.4	35.0
62.5°	30.2	26.6	26.6	28.2	30.6	32.6
63°	27.4	24.6	24.6	26.2	28.2	29.8
63.5°	25.0	22.7	23.1	24.3	26.2	27.4
64°	23.1	21.1	21.1	22.3	24.3	25.4
64.5°	21.5	19.5	19.5	20.7	22.3	23.5
65°	19.9	18.3	18.3	19.1	20.7	21.9
65.5°	18.3	16.7	17.1	17.9	19.5	20.3
66°	17.1	15.5	15.9	16.7	17.9	18.7



TEST NUMBER: P776292

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	13.5	12.7	12.7	13.5	14.3	15.1
68°	12.7	11.9	11.9	12.7	13.5	13.9
68.5°	11.9	11.1	11.1	11.5	12.3	13.1
69°	11.1	10.3	10.3	10.7	11.5	12.3
69.5°	10.3	9.5	9.5	9.9	10.7	11.1
70°	9.5	8.7	8.7	9.5	9.9	10.3
70.5°	9.1	8.3	8.3	8.7	9.1	9.5
71°	8.3	7.6	7.6	8.0	8.3	9.1
71.5°	8.0	7.2	7.2	7.6	8.0	8.3
72°	7.2	6.8	6.8	7.2	7.2	7.6
72.5°	6.8	6.0	6.0	6.4	6.8	7.2
73°	6.4	5.6	5.6	6.0	6.4	6.4
73.5°	6.0	5.2	5.2	5.6	5.6	6.0
74°	5.6	4.8	4.8	5.2	5.2	5.6
74.5°	5.2	4.4	4.4	4.8	4.8	5.2
75°	4.8	4.0	4.0	4.4	4.4	4.8
75.5°	4.4	4.0	4.0	4.0	4.0	4.4
76°	4.0	3.6	3.6	3.6	3.6	4.0
76.5°	3.6	3.2	3.2	3.2	3.2	3.6
77°	3.2	2.8	2.8	2.8	3.2	3.2
77.5°	3.2	2.8	2.8	2.8	2.8	2.8
78°	2.8	2.4	2.4	2.4	2.4	2.8
78.5°	2.4	2.4	2.4	2.4	2.4	2.4
79°	2.4	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: P776292

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-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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Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

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Scaled Data Report





21.5°	2867.1	2887.8	2918.0	2956.9	3022.9	3068.6	3102.8	3117.5	3114.8	3095.7	3061.9
22°	2832.9	2856.8	2887.4	2927.9	2992.3	3040.0	3073.4	3089.3	3086.1	3066.3	3032.5



44°	658.7	680.2	695.7	722.7	782.4	836.0	884.1	905.6	885.3	853.5	815.8
44.5°	623.7	644.4	656.7	679.0	739.4	790.7	838.4	855.9	837.2	808.2	769.2



66.5°	17.5	18.3	18.3	17.5	17.9	18.3	18.7	19.1	18.7	18.3	17.1
67°	16.3	17.1	16.7	16.3	16.7	17.1	17.5	17.5	17.5	17.1	15.9



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°	3017.4	2949.8	2902.1	2869.1	2860.7	2867.1
22°	2986.4	2916.4	2866.3	2834.5	2825.0	2832.9



44°	760.1	676.6	631.7	613.0	630.5	658.7
44.5°	718.4	637.3	593.9	574.1	593.1	623.7



66.5°	15.9	14.7	14.7	15.5	16.7	17.5
67°	14.7	13.5	13.9	14.7	15.5	16.3

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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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(END OF REPORT)