

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: P776820

Luminaire Tested: HCDJBS4050CSD-HCD8TSQC-5000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776820
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: HCDJBS4050CSD-HCD8TSQC-5000lm-2700K
Description: 8 INCH SQUARE MEDIUM SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

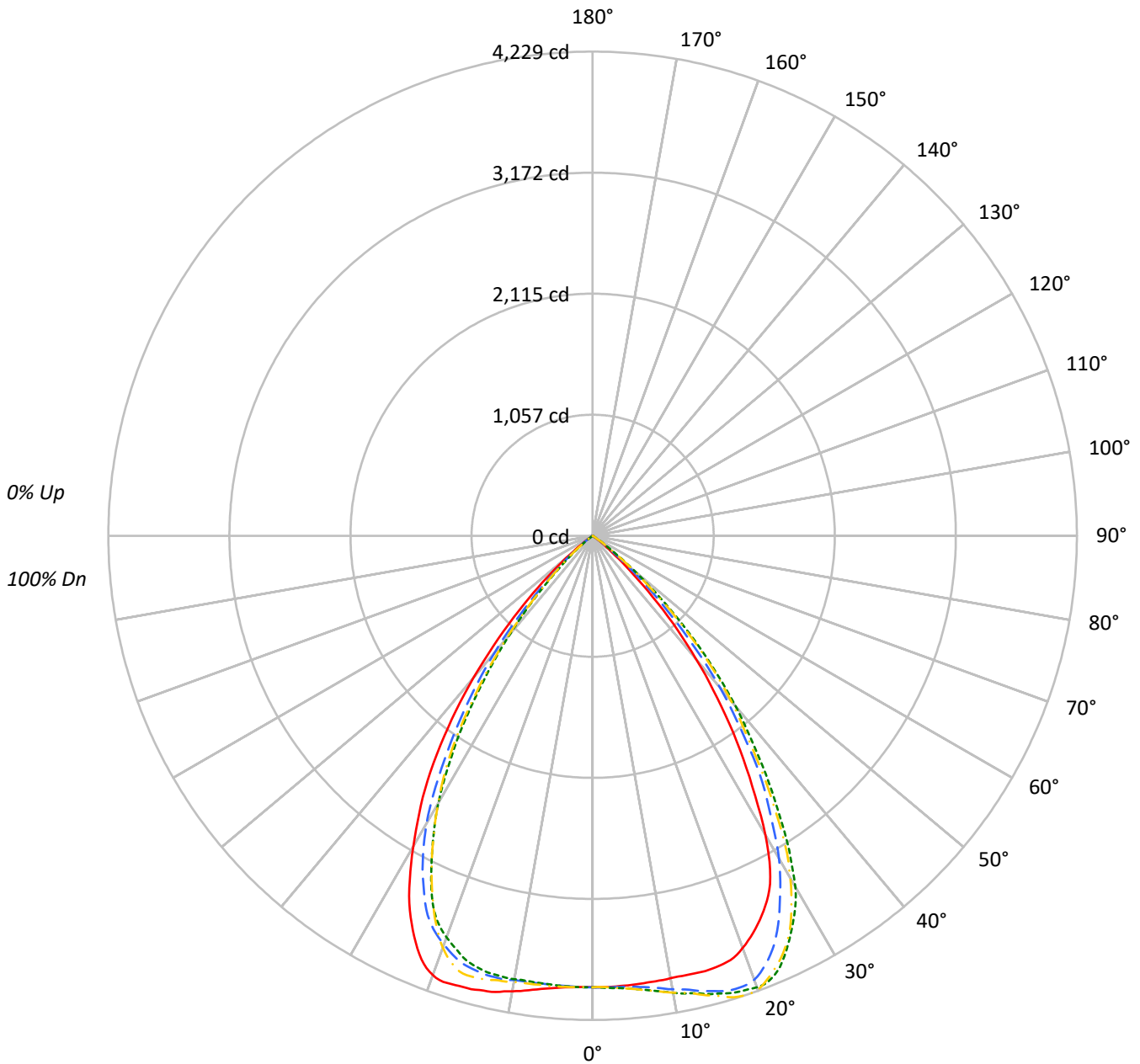
Lumens per Lamp: N/A
Luminaire Lumens: 5300.2 lumens
Efficiency: N/A
Efficacy: 110.4 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.07
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')
CIE Type: Direct

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



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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	85					85			
3	101	94	89	85	99	93	88	84	90	86	83	88	84	81	85	82	80	78					78			
4	95	87	81	77	93	86	80	76	84	79	75	82	78	74	80	76	74	72					72			
5	90	81	75	70	88	80	74	70	78	73	69	76	72	68	75	71	68	66					66			
6	85	75	69	64	83	74	68	64	73	67	63	71	67	63	70	66	62	61					61			
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58	56					56			
8	76	65	59	54	74	65	59	54	64	58	54	62	57	54	61	57	53	52					52			
9	71	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48					48			
10	68	57	51	47	67	57	51	47	56	50	47	55	50	46	54	50	46	45					45			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	94545	94545	94545	94545
5°	94785	95609	95445	94797
10°	95526	98676	98367	95760
15°	97450	102822	101760	96830
20°	97787	107088	104146	95185
25°	94413	105837	98908	88253
30°	83631	98073	86735	74613
35°	64188	80016	70935	55816
40°	44116	60813	50518	35145
45°	23202	39496	28916	16467
50°	7782	17842	11113	5334
55°	552	3867	1221	134
60°	86	110	86	67
65°	51	51	51	28
70°	35	35	35	35
75°	46	46	46	0
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 39913 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	378.6	7.1
10°-20°	1138.4	21.5
20°-30°	1660.0	31.3
30°-40°	1430.4	27.0
40°-50°	628.9	11.9
50°-60°	62.6	1.2
60°-70°	1.0	0.0
70°-80°	0.3	0.0
80°-90°	0.0	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°	3177.0	59.9
0°-40°	4607.3	86.9
0°-60°	5298.9	100.0
0°-90°	5300.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5300.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3943	3943	3943	3943	3943	
5°	3938	3972	3965	3938	3938	375
15°	3926	4142	4099	3901	3926	1107
25°	3568	4000	3738	3336	3568	1620
35°	2193	2734	2423	1907	2193	1360
45°	684	1165	853	486	684	547
55°	13	92	29	3	13	45
65°	1	1	1	0	1	1
75°	0	0	0	0	0	0
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°	3942.9	3942.9	3942.9	3942.9	3942.9	3942.9	3942.9	3942.9	3942.9	3942.9	3942.9
0.5°	3943.8	3945.7	3946.6	3943.4	3944.8	3942.5	3940.7	3941.6	3942.9	3944.3	3944.3
1°	3943.8	3946.1	3947.0	3945.7	3946.1	3943.8	3941.1	3942.0	3943.4	3944.3	3944.3
1.5°	3943.8	3945.7	3946.6	3947.0	3948.9	3946.1	3942.5	3943.4	3943.4	3943.8	3943.4
2°	3942.9	3944.3	3946.1	3948.4	3951.6	3949.3	3946.1	3945.7	3944.8	3943.8	3942.9
2.5°	3942.9	3944.3	3946.6	3948.4	3953.9	3953.9	3949.3	3948.4	3947.5	3944.3	3941.6
3°	3941.6	3943.8	3947.0	3949.8	3955.7	3955.2	3953.9	3953.4	3949.3	3944.8	3940.7
3.5°	3940.7	3942.9	3948.4	3952.5	3958.0	3958.4	3957.5	3957.1	3952.0	3946.1	3939.7
4°	3939.3	3941.6	3949.8	3955.7	3962.1	3963.0	3962.1	3962.5	3956.1	3947.0	3938.8
4.5°	3938.8	3941.6	3952.0	3959.8	3966.6	3968.4	3967.5	3967.1	3960.7	3948.9	3937.0
5°	3937.9	3941.6	3954.8	3965.3	3972.1	3973.5	3973.9	3973.9	3965.3	3950.7	3937.0
5.5°	3937.0	3943.4	3958.4	3971.6	3977.6	3979.4	3979.8	3981.6	3971.2	3953.0	3936.6
6°	3935.6	3944.3	3962.5	3977.6	3983.9	3985.7	3987.1	3988.9	3977.1	3956.1	3936.6
6.5°	3933.8	3945.7	3968.0	3984.8	3991.2	3992.1	3994.9	3996.7	3984.4	3960.7	3937.0
7°	3932.0	3947.0	3973.9	3993.0	3999.0	3999.0	4002.1	4005.3	3992.1	3964.8	3937.0
7.5°	3930.6	3948.9	3980.7	4002.6	4006.7	4006.7	4009.0	4013.1	3999.9	3969.8	3937.0
8°	3930.2	3951.6	3987.6	4012.2	4014.9	4014.9	4018.1	4023.1	4008.5	3974.4	3937.5
8.5°	3929.3	3956.1	3995.3	4022.2	4023.6	4024.5	4026.7	4032.2	4017.2	3978.9	3938.4
9°	3928.4	3961.2	4004.4	4033.6	4033.6	4033.6	4034.9	4042.2	4025.4	3983.9	3938.8
9.5°	3926.1	3965.3	4014.4	4044.1	4042.2	4043.1	4043.1	4051.3	4033.1	3988.5	3938.8
10°	3923.3	3969.4	4022.6	4055.4	4052.7	4053.6	4052.3	4059.1	4040.0	3993.0	3941.1
10.5°	3921.5	3972.5	4029.9	4065.5	4062.7	4063.6	4060.9	4066.4	4046.8	3999.4	3946.6
11°	3921.5	3976.6	4036.8	4073.2	4072.3	4072.8	4068.7	4073.2	4054.1	4008.5	3951.1
11.5°	3923.3	3982.6	4044.1	4080.5	4079.6	4080.5	4075.9	4081.0	4065.0	4016.7	3952.5
12°	3924.3	3990.3	4054.1	4088.7	4085.1	4088.7	4085.1	4092.3	4073.7	4024.5	3951.1
12.5°	3924.3	3998.0	4066.4	4097.8	4092.3	4097.4	4096.0	4103.3	4080.5	4025.8	3948.9
13°	3923.8	4002.6	4078.7	4109.2	4101.9	4107.8	4109.6	4111.9	4083.7	4028.1	3948.4
13.5°	3924.7	4005.3	4090.1	4119.7	4114.2	4119.7	4124.7	4116.9	4086.0	4032.7	3947.0
14°	3926.5	4007.6	4098.3	4127.0	4126.0	4132.9	4137.0	4120.1	4090.1	4037.2	3943.8
14.5°	3927.0	4010.8	4107.4	4131.1	4135.2	4142.9	4147.0	4125.1	4095.1	4040.4	3938.4
15°	3925.6	4013.1	4117.8	4134.7	4142.0	4149.7	4157.9	4132.9	4099.2	4042.7	3932.5
15.5°	3922.0	4013.1	4128.3	4142.0	4149.3	4154.7	4172.5	4139.3	4100.1	4043.1	3925.6
16°	3918.3	4009.4	4137.9	4148.4	4158.4	4162.0	4188.9	4143.4	4100.5	4045.0	3919.7
16.5°	3914.2	4004.0	4144.3	4151.1	4168.0	4170.7	4203.5	4144.7	4101.5	4046.3	3912.9
17°	3909.7	3997.6	4148.4	4151.1	4175.2	4176.6	4214.4	4142.9	4103.3	4047.7	3903.3
17.5°	3904.7	3992.1	4150.6	4149.7	4179.8	4179.3	4221.3	4141.1	4105.1	4045.9	3891.0
18°	3897.4	3986.2	4150.6	4147.9	4183.0	4178.9	4224.9	4139.7	4107.8	4037.7	3874.1
18.5°	3885.1	3980.3	4148.8	4145.6	4186.2	4178.9	4227.2	4137.4	4108.7	4024.5	3855.5
19°	3869.1	3972.5	4145.6	4143.8	4189.8	4180.7	4229.0	4134.7	4105.1	4004.0	3837.7
19.5°	3851.4	3962.5	4139.7	4141.5	4193.0	4183.9	4226.3	4127.4	4095.5	3982.1	3819.0
20°	3832.2	3949.3	4127.9	4137.9	4196.7	4187.1	4219.0	4115.6	4081.4	3958.0	3799.0
20.5°	3811.3	3934.7	4110.1	4131.1	4198.0	4188.0	4204.4	4101.9	4065.9	3931.5	3778.0
21°	3788.5	3919.2	4087.3	4119.7	4194.8	4184.4	4184.4	4086.0	4045.0	3900.6	3756.2



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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°	3714.7	3862.3	4005.8	4072.3	4152.9	4166.6	4118.8	4036.3	3954.3	3797.2	3678.7
23°	3687.4	3836.3	3974.8	4055.4	4131.1	4155.2	4093.7	4015.4	3916.5	3758.0	3647.3
23.5°	3659.1	3806.3	3939.7	4034.0	4104.6	4140.6	4066.8	3992.1	3876.0	3717.0	3612.2
24°	3630.4	3772.1	3901.5	4011.3	4072.8	4120.6	4038.6	3964.8	3830.9	3673.3	3571.7
24.5°	3600.4	3732.9	3858.2	3985.3	4036.8	4096.4	4009.0	3933.4	3785.8	3626.8	3527.0
25°	3568.5	3691.0	3812.7	3953.9	4000.3	4065.9	3975.7	3896.0	3738.4	3576.2	3476.0
25.5°	3534.3	3646.4	3762.5	3917.9	3961.6	4030.8	3939.7	3854.6	3691.5	3526.1	3425.5
26°	3498.3	3599.0	3710.6	3876.0	3921.5	3990.8	3898.7	3808.1	3639.1	3469.7	3374.4
26.5°	3457.4	3549.4	3656.0	3829.5	3878.7	3945.2	3855.5	3756.6	3585.4	3412.7	3323.4
27°	3412.3	3494.2	3599.9	3776.2	3836.8	3895.1	3806.3	3699.7	3530.2	3356.2	3272.4
27.5°	3359.0	3436.4	3544.8	3716.5	3794.4	3843.6	3755.3	3640.9	3465.1	3299.7	3211.8
28°	3301.1	3375.8	3489.2	3650.5	3750.2	3783.5	3698.3	3579.4	3400.0	3243.3	3152.2
28.5°	3237.8	3313.4	3435.0	3580.8	3704.7	3721.6	3638.2	3521.1	3334.8	3183.1	3091.6
29°	3169.5	3251.9	3377.2	3511.1	3656.4	3657.3	3578.5	3454.6	3269.7	3121.2	3028.3
29.5°	3096.1	3188.1	3318.0	3441.4	3602.7	3590.4	3519.3	3387.7	3204.1	3058.8	2964.5
30°	3020.5	3125.3	3255.6	3370.3	3542.1	3518.4	3451.9	3320.7	3132.6	2991.8	2898.4
30.5°	2937.2	3063.3	3187.2	3301.1	3466.0	3446.4	3384.5	3254.2	3062.4	2924.9	2829.7
31°	2852.4	3002.7	3114.4	3231.4	3389.9	3374.4	3317.5	3177.7	2995.0	2854.7	2752.7
31.5°	2765.4	2938.5	3040.1	3162.6	3313.9	3302.5	3250.1	3100.2	2925.3	2784.1	2671.6
32°	2682.1	2867.0	2966.3	3095.7	3237.8	3230.1	3165.8	3020.5	2857.0	2713.0	2589.1
32.5°	2596.9	2791.4	2894.3	3026.0	3155.3	3161.3	3079.3	2942.6	2790.0	2642.9	2508.5
33°	2515.3	2711.7	2825.6	2953.6	3068.3	3087.0	2990.0	2865.6	2722.6	2570.9	2424.2
33.5°	2433.8	2627.0	2757.7	2880.2	2982.7	3012.8	2902.1	2784.6	2650.6	2496.2	2343.6
34°	2354.1	2538.6	2691.2	2806.0	2897.5	2929.0	2819.2	2703.0	2578.2	2418.3	2261.2
34.5°	2273.9	2454.8	2620.1	2728.1	2814.6	2840.1	2735.8	2622.9	2503.1	2335.0	2182.4
35°	2192.8	2371.4	2544.5	2649.3	2733.5	2746.8	2652.9	2546.3	2423.3	2251.2	2100.8
35.5°	2115.9	2290.3	2464.8	2570.9	2652.5	2654.7	2565.9	2467.1	2340.0	2167.3	2023.4
36°	2031.6	2211.1	2379.6	2491.2	2570.5	2560.4	2480.7	2390.1	2257.5	2084.9	1942.8
36.5°	1947.3	2130.4	2289.9	2410.1	2486.2	2468.9	2392.4	2310.4	2176.9	2007.9	1863.5
37°	1866.2	2048.0	2204.7	2327.2	2403.7	2378.7	2308.5	2232.9	2098.6	1931.8	1783.3
37.5°	1787.0	1969.2	2123.6	2249.8	2322.7	2296.7	2228.8	2157.3	2022.9	1854.9	1704.5
38°	1710.9	1891.3	2044.8	2170.5	2243.0	2220.6	2155.0	2084.9	1943.2	1777.0	1628.0
38.5°	1640.3	1812.0	1969.2	2094.0	2165.5	2148.2	2084.4	2007.0	1861.7	1699.1	1553.3
39°	1563.8	1731.4	1891.3	2015.7	2091.7	2079.0	2016.1	1928.6	1779.2	1621.6	1480.4
39.5°	1486.8	1652.2	1811.6	1930.9	2018.4	2009.7	1946.4	1844.8	1695.4	1540.5	1406.2
40°	1409.4	1574.3	1729.1	1839.4	1942.8	1942.3	1875.8	1763.8	1613.9	1459.0	1330.6
40.5°	1332.4	1496.8	1648.1	1751.0	1865.8	1870.3	1802.5	1682.2	1529.6	1375.7	1253.6
41°	1255.4	1418.9	1563.3	1668.1	1785.6	1797.5	1728.2	1604.8	1450.8	1293.7	1176.1
41.5°	1181.6	1341.0	1478.6	1589.7	1705.9	1725.5	1653.5	1527.8	1373.4	1213.9	1098.7
42°	1109.6	1263.6	1393.4	1511.9	1624.4	1651.2	1576.5	1453.1	1295.9	1134.2	1020.8
42.5°	1039.0	1184.8	1308.7	1434.0	1544.6	1576.5	1499.6	1376.6	1219.4	1058.2	944.7
43°	965.2	1105.5	1224.0	1356.5	1467.7	1498.2	1420.3	1300.5	1142.0	984.8	870.9
43.5°	892.8	1024.5	1145.6	1278.2	1389.3	1418.5	1340.6	1223.5	1065.4	912.9	798.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	684.2	796.2	921.5	1052.2	1164.7	1177.0	1109.2	1003.0	852.7	707.0	598.1
45.5°	618.6	727.5	854.5	979.8	1088.7	1097.3	1032.2	932.4	785.8	644.1	539.3
46°	555.7	663.2	787.1	908.8	1012.2	1018.5	957.0	862.3	723.8	584.9	484.7
46.5°	495.6	600.8	722.0	837.2	939.3	941.5	883.7	792.1	661.0	527.9	440.5
47°	439.1	542.1	659.1	768.9	867.3	865.0	811.3	724.3	602.2	477.4	396.3
47.5°	386.7	487.4	598.5	701.5	797.6	792.6	739.3	658.2	544.3	434.1	351.7
48°	339.8	437.3	539.3	638.6	728.8	723.8	672.8	595.8	490.1	390.4	307.5
48.5°	299.7	390.4	484.2	579.4	659.6	656.9	607.7	535.7	441.8	347.1	273.3
49°	265.1	347.1	433.6	522.5	593.5	592.2	545.7	484.7	394.0	303.8	242.3
49.5°	235.0	307.5	385.8	466.4	530.2	531.6	493.8	433.6	345.7	267.4	214.5
50°	208.6	271.5	341.2	411.3	478.3	480.1	441.4	382.6	297.9	235.0	188.6
50.5°	183.6	237.8	300.2	359.9	426.4	429.1	389.5	331.6	258.7	204.1	162.6
51°	159.9	206.3	261.5	312.0	374.9	377.6	337.5	280.6	223.7	175.4	138.5
51.5°	138.9	179.5	226.8	269.2	323.0	326.6	285.2	242.3	192.2	148.0	117.1
52°	118.0	153.1	194.5	231.4	271.9	275.1	245.1	206.8	162.6	123.0	95.7
52.5°	97.0	131.2	164.9	196.3	233.2	233.7	208.2	175.4	134.8	100.7	77.4
53°	76.1	109.3	141.2	165.4	197.7	197.7	175.4	146.2	110.2	81.5	59.7
53.5°	55.1	87.0	118.0	141.2	166.3	165.4	145.3	119.8	89.7	62.9	41.5
54°	32.3	65.1	94.7	117.5	136.7	135.3	118.9	97.5	69.7	44.2	23.7
54.5°	16.4	41.9	71.5	93.4	110.2	110.2	96.1	79.3	49.2	25.5	6.4
55°	13.2	22.3	48.3	69.7	92.5	89.7	77.9	60.6	29.2	7.3	4.6
55.5°	10.0	18.7	26.4	45.6	75.2	69.7	59.7	42.4	9.6	5.0	3.6
56°	6.8	14.6	11.8	23.7	57.4	49.7	41.9	24.1	5.5	4.1	3.2
56.5°	4.1	10.9	9.1	10.0	40.1	29.2	23.7	5.9	4.6	3.6	2.7
57°	3.6	7.3	7.3	7.7	22.3	9.1	5.9	4.6	3.6	3.2	2.3
57.5°	3.2	3.6	5.5	6.4	5.0	5.0	4.6	4.1	3.2	2.7	2.3
58°	2.7	3.2	3.2	4.6	4.1	4.1	3.6	3.6	2.7	2.3	1.8
58.5°	2.7	2.7	2.7	3.2	3.2	3.2	3.2	3.2	2.7	2.3	1.8
59°	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.7	2.3	1.8	1.8
59.5°	2.3	2.3	2.3	2.3	2.7	2.7	2.7	2.3	2.3	1.8	1.4
60°	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.4
60.5°	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	1.8	1.4	1.4
61°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.4	1.4
61.5°	1.4	1.8	1.4	1.4	1.8	1.8	1.8	1.8	1.4	1.4	1.4
62°	1.4	1.4	1.4	1.4	1.4	1.8	1.8	1.8	1.4	1.4	0.9
62.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9
63°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9	0.9
63.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9	0.9
64°	0.9	1.4	0.9	0.9	1.4	1.4	1.4	1.4	0.9	0.9	0.9
64.5°	0.9	0.9	0.9	0.9	0.9	1.4	1.4	1.4	0.9	0.9	0.9
65°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
65.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
66°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5



TEST NUMBER: P776820

CATALOG NUMBER: HCDJBLS4050CSD-HCD8TSQC-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.5
68°	0.9	0.9	0.5	0.5	0.9	0.9	0.9	0.9	0.5	0.5	0.5
68.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.9	0.9	0.5	0.5	0.5
69°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
69.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
71°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
71.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
72°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
73°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
73.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0
74°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0
74.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0
75°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0
75.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	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: P776820

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQC-5000lm-2700K

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: P776820

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQC-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3942.9	3942.9	3942.9	3942.9	3942.9	3942.9
0.5°	3942.0	3944.8	3942.0	3940.7	3941.6	3943.8
1°	3942.0	3944.3	3942.9	3941.1	3942.9	3943.8
1.5°	3941.6	3944.3	3943.4	3942.0	3942.9	3943.8
2°	3940.7	3943.8	3943.8	3943.4	3943.4	3942.9
2.5°	3938.8	3942.9	3944.8	3944.8	3943.8	3942.9
3°	3937.5	3942.0	3945.7	3947.0	3944.8	3941.6
3.5°	3935.6	3941.6	3947.0	3947.5	3944.8	3940.7
4°	3933.8	3941.1	3947.5	3949.3	3944.8	3939.3
4.5°	3931.5	3939.3	3948.4	3949.8	3944.3	3938.8
5°	3929.7	3938.4	3948.4	3949.8	3943.8	3937.9
5.5°	3928.4	3937.0	3947.5	3949.8	3942.0	3937.0
6°	3926.5	3935.6	3947.0	3948.9	3941.6	3935.6
6.5°	3923.3	3934.3	3947.0	3948.9	3940.7	3933.8
7°	3921.1	3933.4	3947.5	3949.3	3939.7	3932.0
7.5°	3917.9	3932.0	3949.3	3951.1	3939.3	3930.6
8°	3914.7	3931.5	3949.3	3952.0	3939.7	3930.2
8.5°	3911.0	3930.2	3948.9	3952.0	3939.3	3929.3
9°	3906.5	3928.8	3949.3	3952.0	3937.5	3928.4
9.5°	3902.8	3930.2	3953.0	3953.0	3936.1	3926.1
10°	3901.5	3932.9	3958.0	3957.5	3936.1	3923.3
10.5°	3902.4	3934.7	3962.5	3963.0	3938.4	3921.5
11°	3901.5	3933.8	3965.7	3966.6	3941.6	3921.5
11.5°	3898.7	3931.1	3967.1	3968.9	3942.0	3923.3
12°	3895.1	3927.9	3969.4	3969.8	3940.2	3924.3
12.5°	3894.6	3926.5	3974.8	3975.3	3938.4	3924.3
13°	3894.6	3925.6	3982.1	3982.1	3937.5	3923.8
13.5°	3893.7	3923.3	3988.5	3987.1	3937.5	3924.7
14°	3891.0	3917.9	3990.8	3990.3	3934.7	3926.5
14.5°	3886.0	3909.2	3992.1	3991.2	3929.3	3927.0
15°	3881.4	3900.6	3992.6	3992.1	3922.0	3925.6
15.5°	3876.0	3891.9	3992.6	3992.6	3915.6	3922.0
16°	3870.5	3882.3	3990.3	3992.1	3908.3	3918.3
16.5°	3865.0	3870.5	3983.0	3988.0	3901.0	3914.2
17°	3854.6	3854.1	3969.4	3978.0	3891.0	3909.7
17.5°	3839.5	3834.5	3949.3	3962.5	3877.3	3904.7
18°	3820.9	3813.6	3924.3	3942.0	3861.4	3897.4
18.5°	3799.0	3794.0	3896.5	3918.8	3843.2	3885.1
19°	3777.1	3773.5	3865.0	3891.9	3825.0	3869.1
19.5°	3753.9	3752.5	3830.0	3861.8	3807.2	3851.4
20°	3728.4	3730.2	3791.2	3826.8	3789.0	3832.2
20.5°	3702.4	3707.9	3748.9	3789.0	3769.8	3811.3
21°	3673.7	3682.8	3702.4	3745.7	3750.2	3788.5

TEST NUMBER: P776820

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQC-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3586.7	3589.9	3553.9	3603.1	3681.0	3714.7
23°	3555.3	3548.5	3499.3	3550.3	3651.9	3687.4
23.5°	3522.9	3502.0	3445.1	3495.6	3619.1	3659.1
24°	3489.2	3450.1	3388.6	3440.0	3579.4	3630.4
24.5°	3456.4	3395.4	3330.7	3382.6	3533.9	3600.4
25°	3414.1	3335.7	3270.6	3324.8	3482.0	3568.5
25.5°	3371.7	3274.7	3214.1	3266.5	3426.8	3534.3
26°	3329.8	3213.2	3157.2	3205.9	3368.1	3498.3
26.5°	3287.0	3150.8	3094.3	3145.8	3307.5	3457.4
27°	3227.3	3086.6	3032.8	3084.3	3244.6	3412.3
27.5°	3162.6	3023.2	2971.8	3021.0	3181.3	3359.0
28°	3088.4	2960.8	2908.5	2956.3	3117.5	3301.1
28.5°	3014.6	2898.4	2842.9	2893.9	3053.8	3237.8
29°	2939.4	2833.3	2775.4	2830.6	2988.6	3169.5
29.5°	2864.7	2768.2	2708.5	2765.0	2918.9	3096.1
30°	2785.9	2694.8	2643.8	2699.8	2848.3	3020.5
30.5°	2705.3	2619.2	2578.7	2632.0	2774.1	2937.2
31°	2624.2	2541.8	2513.1	2567.3	2697.6	2852.4
31.5°	2542.7	2464.3	2447.5	2502.1	2616.9	2765.4
32°	2461.6	2381.4	2379.6	2434.7	2536.3	2682.1
32.5°	2380.1	2302.6	2311.7	2362.8	2454.3	2596.9
33°	2298.5	2225.2	2238.4	2287.6	2372.3	2515.3
33.5°	2221.1	2149.1	2157.3	2210.2	2289.9	2433.8
34°	2142.7	2071.7	2072.1	2129.1	2216.1	2354.1
34.5°	2063.5	1992.4	1984.2	2045.3	2138.2	2273.9
35°	1981.0	1906.8	1902.7	1960.5	2059.4	2192.8
35.5°	1898.1	1822.5	1820.2	1876.7	1976.9	2115.9
36°	1818.0	1739.2	1741.9	1795.2	1895.4	2031.6
36.5°	1739.2	1654.4	1660.3	1715.5	1807.0	1947.3
37°	1664.9	1578.8	1580.2	1638.0	1726.4	1866.2
37.5°	1592.9	1503.2	1500.5	1558.3	1647.6	1787.0
38°	1518.2	1427.1	1420.3	1478.6	1572.4	1710.9
38.5°	1440.3	1351.5	1340.6	1398.9	1496.8	1640.3
39°	1359.3	1275.9	1260.4	1319.2	1421.2	1563.8
39.5°	1282.7	1199.4	1184.3	1239.5	1345.6	1486.8
40°	1207.1	1122.8	1108.3	1165.2	1270.0	1409.4
40.5°	1137.0	1052.2	1032.2	1091.0	1193.4	1332.4
41°	1066.4	983.0	963.0	1017.6	1122.4	1255.4
41.5°	997.6	913.8	890.5	945.6	1049.0	1181.6
42°	925.6	847.3	826.3	876.4	979.4	1109.6
42.5°	855.5	782.1	762.5	809.4	910.1	1039.0
43°	786.2	717.4	702.9	746.1	844.1	965.2
43.5°	719.7	653.7	645.9	686.0	777.1	892.8



TEST NUMBER: P776820

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQC-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	534.8	485.6	492.4	522.9	584.9	684.2
45.5°	484.7	435.9	447.3	475.6	527.5	618.6
46°	435.0	389.5	405.0	430.5	472.8	555.7
46.5°	385.4	347.1	364.0	388.1	420.4	495.6
47°	335.7	308.8	327.1	348.9	373.1	439.1
47.5°	286.1	273.8	291.5	310.7	330.2	386.7
48°	255.1	242.3	258.7	276.0	292.0	339.8
48.5°	228.2	214.5	227.8	243.7	258.3	299.7
49°	204.1	189.5	198.1	213.6	228.7	265.1
49.5°	180.8	165.4	170.8	185.8	201.3	235.0
50°	159.0	143.0	148.0	158.5	176.7	208.6
50.5°	136.7	121.2	125.3	136.2	153.5	183.6
51°	115.2	98.8	102.0	113.9	133.0	159.9
51.5°	95.7	77.0	79.3	91.6	112.1	138.9
52°	77.4	54.7	56.5	69.7	91.6	118.0
52.5°	59.7	31.4	33.7	47.4	70.6	97.0
53°	41.9	15.0	16.4	26.0	46.9	76.1
53.5°	23.7	11.8	13.2	11.4	26.4	55.1
54°	6.4	8.7	9.6	9.6	12.3	32.3
54.5°	4.6	5.9	6.4	7.3	10.0	16.4
55°	3.6	3.2	3.2	5.5	7.7	13.2
55.5°	3.2	2.7	2.7	3.2	5.9	10.0
56°	2.7	2.3	2.7	3.2	3.6	6.8
56.5°	2.3	2.3	2.3	2.7	3.2	4.1
57°	2.3	1.8	2.3	2.3	2.7	3.6
57.5°	1.8	1.8	1.8	2.3	2.7	3.2
58°	1.8	1.8	1.8	2.3	2.3	2.7
58.5°	1.8	1.4	1.8	1.8	2.3	2.7
59°	1.4	1.4	1.4	1.8	2.3	2.3
59.5°	1.4	1.4	1.4	1.8	1.8	2.3
60°	1.4	1.4	1.4	1.4	1.8	1.8
60.5°	1.4	1.4	1.4	1.4	1.8	1.8
61°	1.4	0.9	1.4	1.4	1.4	1.8
61.5°	0.9	0.9	0.9	1.4	1.4	1.4
62°	0.9	0.9	0.9	1.4	1.4	1.4
62.5°	0.9	0.9	0.9	0.9	1.4	1.4
63°	0.9	0.9	0.9	0.9	1.4	1.4
63.5°	0.9	0.9	0.9	0.9	0.9	1.4
64°	0.9	0.9	0.9	0.9	0.9	0.9
64.5°	0.9	0.9	0.9	0.9	0.9	0.9
65°	0.9	0.5	0.9	0.9	0.9	0.9
65.5°	0.5	0.5	0.5	0.9	0.9	0.9
66°	0.5	0.5	0.5	0.9	0.9	0.9



TEST NUMBER: P776820

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQC-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	0.5	0.5	0.5	0.5	0.5	0.9
68°	0.5	0.5	0.5	0.5	0.5	0.9
68.5°	0.5	0.5	0.5	0.5	0.5	0.5
69°	0.5	0.5	0.5	0.5	0.5	0.5
69.5°	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5
70.5°	0.5	0.5	0.5	0.5	0.5	0.5
71°	0.5	0.5	0.5	0.5	0.5	0.5
71.5°	0.5	0.5	0.5	0.5	0.5	0.5
72°	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5
73°	0.5	0.5	0.5	0.5	0.5	0.5
73.5°	0.0	0.0	0.5	0.5	0.5	0.5
74°	0.0	0.0	0.0	0.5	0.5	0.5
74.5°	0.0	0.0	0.0	0.5	0.5	0.5
75°	0.0	0.0	0.0	0.0	0.5	0.5
75.5°	0.0	0.0	0.0	0.0	0.0	0.5
76°	0.0	0.0	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
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: P776820
CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQC-5000lm-2700K

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°	3764.8	3903.3	4061.8	4103.7	4185.3	4179.3	4163.9	4071.4	4019.9	3867.8	3732.5
22°	3740.7	3884.6	4034.9	4088.2	4170.7	4173.4	4142.0	4055.0	3988.9	3833.6	3707.4



44°	821.3	945.6	1068.2	1199.8	1314.6	1338.8	1262.2	1148.4	992.6	841.8	728.4
44.5°	752.1	868.7	993.9	1124.2	1240.4	1258.1	1184.3	1073.2	921.5	772.1	661.4



66.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.5
67°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.5



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°	3645.9	3655.0	3656.0	3699.7	3728.8	3764.8
22°	3615.9	3624.5	3604.9	3652.3	3706.1	3740.7



44°	656.9	594.0	591.7	629.1	709.7	821.3
44.5°	595.4	538.9	540.7	574.4	646.4	752.1

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66.5°	0.5	0.5	0.5	0.9	0.9	0.9
67°	0.5	0.5	0.5	0.5	0.9	0.9

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)