

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: P776287

Luminaire Tested: HCDJBL3040CSD-HCD4TRC-4000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776287
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-HCD4TRC-4000lm-3500K
Description: 4 INCH ROUND MEDIUM SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

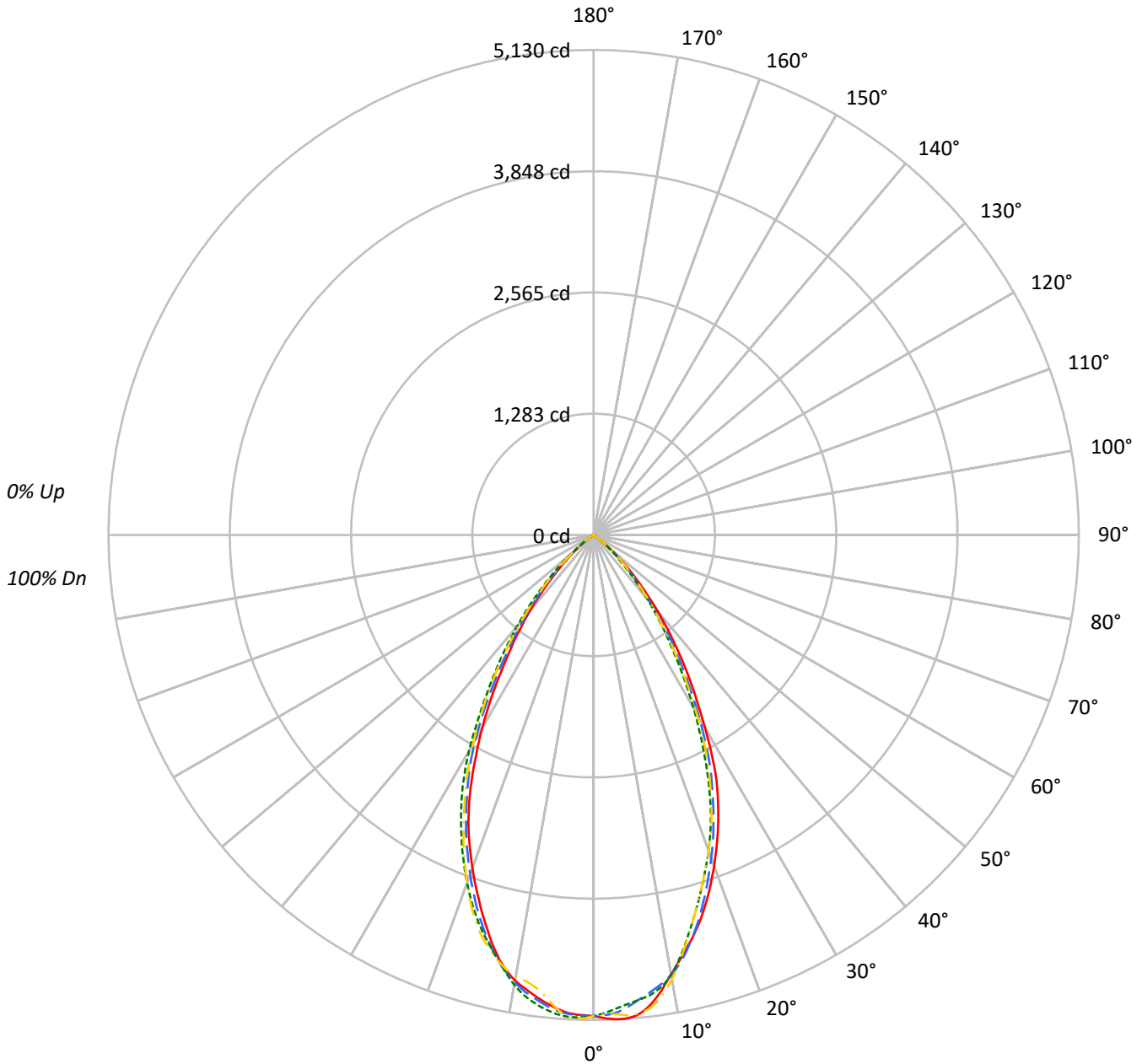
Lumens per Lamp: N/A
Luminaire Lumens: 4630.7 lumens
Efficiency: N/A
Efficacy: 120.3 lumens/watt
Spacing Criteria (0/90/45): 0.87 / 0.87 / 0.88
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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								
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93								
2	108	103	98	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86								
3	102	95	90	86	100	94	89	86	91	87	84	89	86	83	87	84	82	80								
4	97	89	83	79	95	88	82	78	85	81	77	83	80	76	82	78	76	74								
5	91	83	77	72	90	82	76	72	80	75	71	78	74	71	77	73	70	69								
6	87	78	71	67	85	77	71	67	75	70	66	74	69	66	72	68	65	64								
7	82	73	66	62	81	72	66	62	71	65	62	69	65	61	68	64	61	60								
8	78	68	62	58	77	68	62	58	67	61	57	66	61	57	65	60	57	56								
9	74	64	58	54	73	64	58	54	63	58	54	62	57	54	61	57	53	52								
10	71	61	55	51	70	60	54	51	59	54	50	59	54	50	58	53	50	49								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	640601	640601	640601	640601
5°	644955	626031	632499	640382
10°	603136	603443	611622	617615
15°	556817	539671	564439	574797
20°	498689	475734	502198	524028
25°	432049	398819	432437	460695
30°	341979	306216	341921	382595
35°	252467	218698	249425	288633
40°	172401	144193	170906	206047
45°	101377	78738	99828	128839
50°	43112	35026	46460	62495
55°	8733	8557	14745	18409
60°	1410	1712	1611	2190
65°	834	953	834	1310
70°	442	589	589	736
75°	194	389	389	583
80°	0	290	290	290
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 270°
 Vertical Angle: 45°
 Luminance: 128839 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	471.2	10.2
10°-20°	1198.0	25.9
20°-30°	1405.3	30.3
30°-40°	1028.7	22.2
40°-50°	453.8	9.8
50°-60°	69.3	1.5
60°-70°	3.5	0.1
70°-80°	0.9	0.0
80°-90°	0.1	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°	3074.4	66.4
0°-40°	4103.1	88.6
0°-60°	4626.3	99.9
0°-90°	4630.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4630.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	5090	5090	5090	5090	5090	
5°	5105	4956	5007	5069	5105	474
15°	4274	4142	4332	4412	4274	1190
25°	3111	2872	3114	3318	3111	1409
35°	1643	1424	1624	1879	1643	1027
45°	570	442	561	724	570	448
55°	40	39	67	84	40	57
65°	3	3	3	4	3	3
75°	0	1	1	1	0	1
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°	5090.2	5090.2	5090.2	5090.2	5090.2	5090.2	5090.2	5090.2	5090.2	5090.2	5090.2
0.5°	5099.8	5093.0	5086.2	5085.1	5077.5	5077.5	5081.5	5084.3	5087.0	5088.2	5089.0
1°	5108.1	5095.4	5083.1	5076.7	5066.8	5067.6	5074.3	5079.1	5083.1	5085.8	5088.6
1.5°	5115.7	5098.2	5078.7	5066.0	5053.2	5059.6	5069.5	5076.7	5080.3	5082.7	5087.0
2°	5122.4	5099.8	5072.3	5052.5	5038.1	5051.7	5069.5	5078.3	5077.5	5078.7	5083.9
2.5°	5127.6	5099.0	5062.4	5034.2	5022.6	5044.9	5073.1	5081.9	5072.3	5071.5	5079.9
3°	5130.4	5094.6	5049.7	5014.3	5006.7	5040.9	5079.1	5085.4	5065.2	5060.8	5073.9
3.5°	5130.0	5086.6	5032.6	4992.8	4992.4	5038.1	5086.6	5088.6	5053.6	5046.5	5067.2
4°	5126.0	5074.3	5012.3	4969.8	4978.9	5036.2	5092.2	5089.0	5040.1	5029.0	5057.6
4.5°	5118.0	5057.2	4988.9	4948.3	4967.0	5033.8	5094.6	5086.6	5024.6	5007.9	5044.9
5°	5105.3	5036.6	4965.0	4928.0	4955.5	5029.4	5092.2	5079.1	5006.7	4984.5	5029.8
5.5°	5086.6	5012.7	4941.5	4909.0	4943.9	5021.8	5084.7	5068.4	4987.3	4958.6	5012.3
6°	5063.2	4985.3	4918.5	4892.7	4932.0	5009.9	5071.1	5052.5	4967.4	4934.0	4993.6
6.5°	5033.0	4956.3	4896.2	4877.1	4918.5	4995.2	5052.5	5033.4	4946.3	4909.0	4974.1
7°	4997.2	4924.5	4875.6	4862.0	4902.2	4974.5	5028.2	5009.1	4925.6	4887.5	4953.9
7.5°	4957.4	4890.3	4852.9	4846.9	4883.5	4947.5	4999.2	4982.1	4903.8	4865.6	4932.8
8°	4914.1	4854.1	4830.6	4830.6	4861.2	4915.7	4961.8	4950.3	4881.1	4846.1	4910.5
8.5°	4868.4	4813.5	4807.2	4812.0	4834.6	4879.5	4920.5	4915.7	4858.9	4829.4	4887.9
9°	4818.3	4773.4	4782.1	4790.1	4802.0	4835.8	4874.4	4877.5	4835.4	4814.3	4862.0
9.5°	4768.2	4732.5	4754.7	4764.7	4765.0	4788.1	4825.5	4835.0	4812.4	4798.8	4835.0
10°	4719.7	4691.1	4724.5	4735.2	4722.1	4736.4	4770.2	4789.7	4786.1	4782.1	4804.8
10.5°	4672.8	4649.0	4690.7	4699.9	4675.2	4679.2	4713.8	4740.4	4757.1	4764.3	4774.2
11°	4627.5	4606.8	4653.3	4656.1	4625.1	4619.6	4652.6	4688.7	4723.7	4744.4	4740.0
11.5°	4583.4	4562.7	4610.4	4612.8	4567.1	4560.3	4590.9	4633.1	4687.5	4719.3	4704.2
12°	4539.3	4517.8	4563.9	4561.5	4507.9	4490.4	4523.0	4574.6	4647.0	4690.7	4666.1
12.5°	4495.9	4471.7	4516.2	4504.3	4447.8	4426.0	4460.2	4514.2	4602.5	4655.7	4623.9
13°	4453.8	4426.0	4464.5	4446.2	4387.4	4367.9	4395.0	4453.8	4551.2	4615.2	4580.6
13.5°	4411.7	4376.3	4412.8	4391.4	4325.8	4298.8	4331.0	4392.6	4499.5	4572.3	4535.7
14°	4367.1	4325.4	4359.2	4330.2	4263.4	4237.9	4267.0	4330.6	4446.6	4523.0	4489.2
14.5°	4320.6	4273.3	4304.7	4269.7	4201.8	4178.7	4206.5	4270.9	4390.6	4471.7	4440.7
15°	4273.7	4220.4	4247.5	4208.9	4142.1	4116.3	4142.1	4211.3	4332.2	4418.8	4389.4
15.5°	4224.4	4164.8	4189.8	4147.3	4082.1	4055.1	4082.9	4151.7	4275.3	4365.1	4337.7
16°	4173.9	4109.9	4130.2	4085.7	4022.5	3996.6	4020.1	4093.6	4216.9	4307.9	4285.2
16.5°	4119.1	4051.9	4070.6	4025.3	3962.1	3938.6	3960.5	4038.0	4160.0	4250.7	4231.6
17°	4066.6	3994.7	4009.0	3963.7	3904.8	3879.0	3900.8	3978.4	4102.8	4193.0	4176.3
17.5°	4010.6	3935.0	3948.1	3902.4	3845.6	3821.7	3844.0	3921.5	4042.0	4133.8	4118.7
18°	3954.5	3876.2	3885.7	3841.6	3786.0	3762.5	3781.6	3865.5	3984.3	4074.2	4061.0
18.5°	3897.3	3815.4	3823.7	3780.4	3726.7	3704.9	3722.8	3808.6	3927.9	4011.8	4001.4
19°	3840.4	3756.1	3759.3	3718.0	3669.1	3647.2	3664.7	3750.2	3868.6	3952.1	3941.8
19.5°	3782.0	3695.3	3698.9	3656.8	3610.7	3592.0	3609.5	3694.9	3809.8	3889.3	3881.0
20°	3723.6	3636.9	3635.3	3596.3	3552.2	3534.7	3550.2	3638.5	3749.8	3827.3	3820.1
20.5°	3664.3	3576.5	3573.3	3535.1	3494.2	3478.3	3492.6	3580.4	3690.6	3764.5	3758.5
21°	3605.1	3514.5	3510.5	3473.1	3432.2	3419.5	3435.4	3524.0	3630.1	3702.9	3696.1



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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°	3424.6	3325.6	3311.7	3274.0	3237.0	3233.8	3256.1	3348.7	3448.9	3516.4	3510.9
23°	3363.8	3259.6	3243.7	3205.2	3167.0	3165.8	3189.7	3285.5	3388.4	3454.8	3450.1
23.5°	3301.4	3194.9	3175.4	3134.0	3093.5	3101.0	3124.1	3221.5	3322.1	3389.6	3385.3
24°	3238.2	3128.5	3107.8	3061.7	3019.5	3031.1	3054.9	3152.3	3254.1	3324.0	3318.1
24.5°	3176.2	3062.9	3039.0	2986.6	2945.6	2961.1	2985.4	3082.0	3182.9	3256.5	3252.5
25°	3111.4	2994.5	2970.7	2913.0	2872.1	2891.1	2916.2	3011.6	3114.2	3188.1	3189.7
25.5°	3047.4	2928.1	2902.3	2837.5	2798.1	2820.8	2846.6	2941.6	3039.4	3118.9	3120.5
26°	2981.4	2860.9	2833.5	2761.2	2720.6	2743.3	2777.1	2871.3	2964.3	3049.4	3055.3
26.5°	2911.8	2791.4	2763.5	2684.8	2642.3	2670.5	2706.7	2800.9	2889.6	2980.2	2990.1
27°	2836.3	2718.6	2692.8	2609.3	2565.2	2591.4	2632.4	2725.0	2814.4	2910.6	2924.9
27.5°	2759.6	2647.1	2616.9	2535.0	2488.1	2513.9	2562.8	2646.3	2734.9	2841.5	2859.7
28°	2680.9	2571.1	2540.5	2460.6	2409.8	2436.8	2484.9	2566.0	2655.4	2772.3	2794.2
28.5°	2599.4	2492.8	2465.0	2385.5	2333.0	2358.9	2408.6	2487.3	2579.5	2697.2	2723.0
29°	2516.3	2414.9	2387.9	2312.4	2257.1	2281.0	2331.8	2407.4	2504.0	2622.0	2649.9
29.5°	2432.8	2334.6	2310.0	2239.2	2182.0	2203.0	2252.7	2332.2	2428.8	2546.1	2574.3
30°	2353.3	2254.7	2234.4	2166.5	2107.2	2124.7	2172.0	2252.7	2352.9	2469.0	2497.6
30.5°	2275.4	2174.0	2159.3	2094.1	2032.1	2048.8	2095.7	2174.8	2277.4	2391.5	2420.1
31°	2199.1	2091.3	2084.2	2019.0	1959.8	1972.1	2017.8	2100.9	2201.1	2316.7	2341.8
31.5°	2125.1	2013.4	2011.4	1946.6	1887.4	1898.1	1941.9	2028.1	2125.1	2242.8	2265.1
32°	2051.2	1938.7	1939.5	1874.7	1816.3	1830.2	1866.7	1954.2	2052.0	2168.9	2187.9
32.5°	1982.4	1864.8	1868.7	1801.6	1747.1	1759.4	1796.8	1884.2	1976.9	2096.5	2111.2
33°	1915.6	1792.8	1799.6	1729.2	1678.3	1691.4	1724.8	1813.9	1902.9	2023.8	2036.1
33.5°	1847.7	1721.7	1731.2	1662.8	1611.1	1628.2	1656.5	1745.1	1830.2	1954.2	1957.8
34°	1778.9	1653.7	1663.2	1596.4	1547.1	1558.7	1589.3	1678.3	1759.4	1885.0	1882.6
34.5°	1709.7	1588.1	1597.6	1530.4	1484.3	1495.5	1522.9	1611.9	1689.8	1816.3	1810.3
35°	1643.3	1523.3	1530.8	1468.0	1423.5	1438.2	1458.9	1547.1	1623.5	1748.3	1740.3
35.5°	1578.5	1460.9	1464.5	1417.9	1363.5	1375.4	1396.9	1485.1	1559.5	1679.5	1669.2
36°	1512.2	1424.3	1420.7	1357.1	1306.2	1311.0	1337.3	1421.9	1499.4	1611.9	1601.2
36.5°	1450.1	1359.5	1354.3	1296.7	1249.8	1255.8	1279.2	1363.1	1439.0	1544.8	1534.8
37°	1391.7	1294.3	1287.6	1235.9	1193.7	1197.3	1221.6	1302.7	1379.8	1478.8	1472.4
37.5°	1333.7	1229.1	1220.4	1175.5	1139.3	1140.5	1167.5	1242.6	1323.3	1415.2	1408.8
38°	1275.6	1164.3	1153.6	1119.4	1084.8	1086.4	1114.2	1188.6	1264.5	1351.2	1348.8
38.5°	1217.2	1109.1	1092.8	1064.2	1030.8	1033.1	1061.8	1134.5	1209.2	1291.5	1289.2
39°	1159.2	1056.2	1039.1	1008.1	978.7	983.5	1010.9	1076.5	1152.0	1231.5	1230.7
39.5°	1103.5	1003.7	984.7	954.0	927.0	933.8	959.6	1024.4	1096.4	1173.5	1171.9
40°	1049.4	950.9	932.6	900.8	877.7	885.3	910.7	973.5	1040.3	1115.0	1116.2
40.5°	995.8	900.4	878.5	847.5	826.4	838.8	863.8	921.8	989.0	1059.4	1061.4
41°	942.1	852.3	830.8	797.0	779.9	792.7	818.1	872.6	935.0	1004.1	1007.7
41.5°	891.2	804.2	782.7	748.5	732.2	748.5	774.4	824.5	883.3	950.5	954.0
42°	840.4	757.7	736.2	701.2	686.9	706.0	731.4	778.3	834.0	897.2	903.6
42.5°	791.9	712.4	689.3	655.5	642.4	664.3	690.5	733.4	786.3	846.7	853.1
43°	744.6	666.6	647.6	612.6	599.5	624.1	651.9	688.9	740.2	796.2	804.6
43.5°	699.2	623.3	605.8	570.4	558.5	584.7	613.0	647.2	693.7	747.7	757.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	569.6	502.5	489.3	453.2	442.4	477.0	504.8	529.9	560.9	613.4	626.9
45.5°	529.1	464.3	453.6	418.2	408.3	444.4	471.1	492.9	519.6	572.4	585.9
46°	489.3	428.9	419.8	384.4	379.2	412.2	438.5	457.9	480.2	532.7	545.4
46.5°	450.0	394.7	387.6	353.0	350.2	383.6	407.1	424.9	440.8	494.9	507.2
47°	411.8	361.7	356.6	323.6	320.8	355.0	379.2	392.7	405.1	457.9	471.9
47.5°	375.3	330.3	326.8	295.8	291.8	326.4	351.8	364.1	376.1	423.0	436.5
48°	341.9	300.1	298.5	270.3	263.2	297.7	324.0	335.5	347.0	393.1	401.9
48.5°	308.5	271.5	271.9	246.5	240.1	269.5	296.2	306.9	318.0	363.3	371.3
49°	277.1	244.9	246.5	223.4	218.6	245.3	268.3	278.3	288.6	333.1	340.7
49.5°	248.1	219.4	222.6	202.7	198.4	221.8	242.9	253.2	260.0	303.3	310.1
50°	220.2	195.2	199.2	183.3	178.9	199.6	219.8	229.0	237.3	273.5	279.9
50.5°	195.2	172.1	177.7	164.6	160.6	178.5	197.2	207.1	216.2	248.1	253.6
51°	171.3	150.7	157.4	146.3	143.5	158.2	176.1	186.8	196.0	224.2	229.0
51.5°	148.7	133.6	137.5	131.2	127.2	139.5	155.4	167.0	176.9	202.3	204.3
52°	131.2	116.5	121.2	116.1	111.3	122.0	137.1	148.3	159.0	181.7	181.7
52.5°	114.1	99.4	105.3	101.0	95.8	105.3	118.5	130.4	141.9	161.8	159.8
53°	97.0	82.3	89.4	85.5	81.5	89.4	101.8	113.7	126.0	143.1	139.9
53.5°	79.9	65.2	73.5	70.8	68.0	75.1	86.3	97.4	109.3	125.6	120.8
54°	62.8	52.9	60.4	58.0	56.4	62.0	71.6	82.7	93.8	108.9	103.4
54.5°	50.5	42.1	48.9	46.9	47.7	52.5	58.8	68.8	79.5	92.6	87.5
55°	39.8	31.4	38.2	36.2	39.0	42.9	49.3	56.8	67.2	78.3	72.3
55.5°	29.0	21.9	27.8	26.2	30.2	33.4	40.1	47.7	57.6	65.2	59.2
56°	19.9	14.7	19.1	18.3	21.5	23.9	31.0	38.6	48.5	54.9	50.1
56.5°	13.1	12.7	13.1	13.1	13.1	14.7	21.9	29.4	39.0	44.9	40.5
57°	11.5	11.1	11.9	11.9	11.1	11.1	12.7	20.7	29.4	35.0	31.4
57.5°	9.9	9.1	10.3	10.7	9.9	9.9	9.9	11.5	20.3	25.0	22.3
58°	8.3	7.6	9.1	9.5	9.1	8.7	8.7	9.1	10.7	15.1	13.1
58.5°	7.2	6.8	8.0	8.3	8.3	8.3	8.0	8.0	8.7	10.7	9.9
59°	6.4	6.4	7.2	7.6	7.6	7.6	7.2	7.2	7.6	8.7	8.7
59.5°	6.0	6.0	6.8	7.2	7.2	7.2	6.8	6.8	6.8	7.6	8.0
60°	5.6	5.2	6.0	6.4	6.8	6.4	6.4	6.0	6.4	6.8	7.2
60.5°	5.2	4.8	5.6	6.0	6.4	6.0	5.6	5.6	6.0	6.4	6.8
61°	4.8	4.8	5.2	5.6	5.6	5.6	5.2	5.2	5.2	6.0	6.0
61.5°	4.4	4.4	4.8	5.2	5.6	5.2	4.8	4.8	4.8	5.2	5.6
62°	4.0	4.0	4.4	4.8	5.2	4.8	4.8	4.4	4.4	4.8	5.2
62.5°	3.6	3.6	4.4	4.8	4.8	4.4	4.4	4.4	4.4	4.8	4.8
63°	3.6	3.6	4.0	4.4	4.4	4.4	4.0	4.0	4.0	4.4	4.4
63.5°	3.2	3.2	3.6	4.0	4.0	4.0	3.6	3.6	3.6	4.0	4.4
64°	3.2	3.2	3.6	3.6	4.0	3.6	3.6	3.6	3.6	3.6	4.0
64.5°	2.8	2.8	3.2	3.6	3.6	3.6	3.2	3.2	3.2	3.6	3.6
65°	2.8	2.8	3.2	3.2	3.2	3.2	3.2	2.8	2.8	3.2	3.6
65.5°	2.4	2.4	2.8	3.2	3.2	3.2	2.8	2.8	2.8	3.2	3.2
66°	2.4	2.4	2.8	2.8	2.8	2.8	2.8	2.4	2.4	2.8	2.8



TEST NUMBER: P776287

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.0	2.0	2.4	2.4
68°	1.6	1.6	2.0	2.4	2.4	2.0	2.0	2.0	2.0	2.0	2.4
68.5°	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
69°	1.6	1.6	1.6	2.0	2.0	2.0	1.6	1.6	1.6	2.0	2.0
69.5°	1.2	1.2	1.6	2.0	2.0	1.6	1.6	1.6	1.6	1.6	2.0
70°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70.5°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.6	1.6
71°	1.2	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.2	1.6	1.6
71.5°	0.8	0.8	1.2	1.2	1.6	1.2	1.2	1.2	1.2	1.2	1.6
72°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
73°	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	1.2	1.2
73.5°	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	0.8	1.2
74°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.4	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.8	0.8
76.5°	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.8
77°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4	0.4
81°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.4	0.4
81.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.4
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: P776287
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-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: P776287

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	5090.2	5090.2	5090.2	5090.2	5090.2	5090.2
0.5°	5095.0	5094.6	5098.2	5102.1	5102.5	5099.8
1°	5097.8	5100.6	5106.5	5112.1	5112.9	5108.1
1.5°	5099.4	5104.9	5111.7	5118.0	5121.2	5115.7
2°	5100.6	5107.3	5112.1	5120.0	5127.2	5122.4
2.5°	5101.3	5106.9	5107.7	5116.1	5129.2	5127.6
3°	5101.0	5104.1	5096.2	5103.7	5126.8	5130.4
3.5°	5100.6	5099.4	5078.3	5085.1	5118.8	5130.0
4°	5100.2	5091.8	5055.2	5056.8	5105.7	5126.0
4.5°	5098.2	5081.9	5026.2	5023.4	5087.0	5118.0
5°	5095.0	5069.1	4991.6	4986.1	5062.4	5105.3
5.5°	5091.4	5054.0	4956.7	4945.9	5033.8	5086.6
6°	5085.8	5037.0	4921.3	4908.2	5005.9	5063.2
6.5°	5076.3	5019.1	4887.1	4873.2	4976.9	5033.0
7°	5062.4	4999.6	4857.7	4843.0	4942.3	4997.2
7.5°	5044.1	4978.9	4833.8	4817.5	4910.1	4957.4
8°	5018.3	4955.5	4813.5	4796.5	4876.0	4914.1
8.5°	4987.3	4930.4	4796.5	4780.6	4840.6	4868.4
9°	4952.3	4901.4	4780.9	4765.0	4804.0	4818.3
9.5°	4911.7	4868.8	4769.0	4750.7	4768.6	4768.2
10°	4865.2	4833.0	4753.5	4736.0	4731.7	4719.7
10.5°	4819.9	4793.3	4736.8	4720.5	4695.1	4672.8
11°	4771.4	4751.9	4718.1	4702.2	4657.3	4627.5
11.5°	4720.9	4708.6	4696.3	4681.2	4620.7	4583.4
12°	4673.6	4665.7	4669.2	4655.7	4583.8	4539.3
12.5°	4627.9	4622.3	4640.6	4626.3	4546.8	4495.9
13°	4581.0	4579.0	4610.0	4596.5	4511.4	4453.8
13.5°	4534.5	4537.3	4576.2	4563.1	4472.9	4411.7
14°	4489.6	4495.1	4540.8	4528.1	4433.1	4367.1
14.5°	4444.3	4454.6	4504.7	4492.0	4391.8	4320.6
15°	4398.1	4411.7	4464.1	4453.0	4348.8	4273.7
15.5°	4352.4	4369.9	4422.4	4413.2	4302.3	4224.4
16°	4303.1	4325.4	4378.3	4369.1	4255.0	4173.9
16.5°	4254.6	4280.1	4333.3	4321.4	4206.5	4119.1
17°	4201.0	4232.0	4285.6	4272.1	4155.3	4066.6
17.5°	4148.9	4183.5	4234.0	4218.9	4102.4	4010.6
18°	4093.2	4132.2	4178.7	4162.8	4047.9	3954.5
18.5°	4038.0	4079.3	4123.5	4103.6	3989.5	3897.3
19°	3979.6	4023.7	4064.6	4041.6	3933.0	3840.4
19.5°	3921.9	3970.4	4005.4	3978.4	3875.0	3782.0
20°	3861.9	3912.8	3946.2	3916.3	3815.8	3723.6
20.5°	3803.9	3857.5	3881.8	3851.9	3755.8	3664.3
21°	3743.8	3798.3	3820.9	3786.8	3695.7	3605.1



TEST NUMBER: P776287

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3566.9	3624.2	3633.3	3587.2	3510.1	3424.6
23°	3505.3	3564.9	3567.7	3520.4	3447.3	3363.8
23.5°	3443.7	3503.3	3500.9	3451.6	3380.5	3301.4
24°	3384.1	3442.5	3435.4	3380.1	3316.1	3238.2
24.5°	3323.3	3380.5	3367.4	3310.1	3248.5	3176.2
25°	3260.0	3317.7	3297.0	3241.0	3184.5	3111.4
25.5°	3198.8	3254.9	3230.2	3172.6	3114.6	3047.4
26°	3137.6	3191.3	3164.2	3106.2	3049.8	2981.4
26.5°	3072.8	3128.1	3097.1	3038.2	2982.2	2911.8
27°	3007.6	3063.7	3031.1	2972.2	2913.8	2836.3
27.5°	2942.8	2997.7	2963.1	2905.1	2839.5	2759.6
28°	2877.6	2928.5	2894.3	2836.7	2772.3	2680.9
28.5°	2812.8	2856.6	2826.0	2766.7	2698.7	2599.4
29°	2740.1	2784.6	2756.4	2698.0	2622.8	2516.3
29.5°	2665.0	2709.9	2687.6	2626.0	2547.7	2432.8
30°	2585.9	2632.8	2615.3	2552.9	2470.2	2353.3
30.5°	2505.2	2554.1	2539.7	2477.7	2389.1	2275.4
31°	2430.4	2473.0	2465.4	2402.6	2311.2	2199.1
31.5°	2347.3	2391.1	2389.5	2327.9	2230.9	2125.1
32°	2261.1	2312.4	2314.7	2255.5	2154.5	2051.2
32.5°	2185.6	2234.8	2238.0	2182.4	2079.0	1982.4
33°	2107.2	2160.1	2166.1	2112.4	2004.3	1915.6
33.5°	2028.9	2083.8	2088.2	2042.1	1933.9	1847.7
34°	1955.0	2015.4	2016.6	1970.9	1865.9	1778.9
34.5°	1884.6	1946.6	1947.8	1901.3	1799.6	1709.7
35°	1816.7	1878.7	1876.3	1833.4	1733.6	1643.3
35.5°	1749.9	1811.9	1807.5	1764.6	1670.4	1578.5
36°	1683.9	1746.3	1741.5	1697.4	1606.8	1512.2
36.5°	1617.9	1681.9	1675.1	1628.6	1545.6	1450.1
37°	1553.1	1617.1	1608.0	1561.1	1484.3	1391.7
37.5°	1489.1	1553.1	1546.3	1497.5	1419.1	1333.7
38°	1425.9	1488.3	1481.2	1435.4	1360.3	1275.6
38.5°	1363.5	1426.3	1412.8	1375.0	1302.3	1217.2
39°	1301.9	1369.1	1355.5	1314.2	1243.8	1159.2
39.5°	1243.0	1311.4	1298.3	1253.8	1185.4	1103.5
40°	1185.8	1254.2	1241.4	1193.0	1127.4	1049.4
40.5°	1129.7	1196.9	1184.2	1132.5	1072.5	995.8
41°	1078.9	1139.7	1127.0	1075.7	1018.4	942.1
41.5°	1024.0	1085.2	1070.1	1020.0	965.6	891.2
42°	972.7	1032.0	1014.1	966.0	913.5	840.4
42.5°	922.2	977.9	960.0	914.3	863.0	791.9
43°	875.7	925.0	905.9	863.0	812.5	744.6
43.5°	825.6	872.9	853.5	811.3	762.4	699.2



TEST NUMBER: P776287

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	690.1	723.9	706.0	668.6	619.3	569.6
45.5°	644.4	677.0	658.7	623.7	574.8	529.1
46°	602.6	631.7	613.4	579.6	532.3	489.3
46.5°	560.5	587.5	570.4	537.4	490.5	450.0
47°	520.7	544.6	527.5	496.5	450.8	411.8
47.5°	480.6	502.9	486.6	456.7	411.8	375.3
48°	443.2	463.1	446.0	418.2	376.1	341.9
48.5°	406.7	424.5	408.6	382.8	342.3	308.5
49°	373.7	388.4	372.9	347.0	309.3	277.1
49.5°	341.1	353.4	338.7	313.6	278.3	248.1
50°	308.1	319.2	303.7	281.0	250.0	220.2
50.5°	275.5	287.4	273.5	250.8	221.8	195.2
51°	247.3	257.6	244.1	223.0	196.0	171.3
51.5°	220.6	229.4	217.4	196.4	172.5	148.7
52°	194.8	203.1	190.8	170.9	149.5	131.2
52.5°	171.3	178.9	167.4	148.7	132.0	114.1
53°	149.9	155.4	144.7	131.2	114.1	97.0
53.5°	129.2	135.2	127.6	113.3	96.6	79.9
54°	109.7	118.1	110.5	95.8	78.7	62.8
54.5°	93.0	101.0	93.4	78.3	61.2	50.5
55°	77.1	83.9	76.3	60.8	49.7	39.8
55.5°	62.8	66.4	59.2	48.9	38.6	29.0
56°	53.3	54.1	47.7	38.6	28.2	19.9
56.5°	43.7	43.3	37.8	27.8	18.7	13.1
57°	34.2	32.6	27.0	19.1	12.7	11.5
57.5°	24.6	23.5	18.7	13.1	11.5	9.9
58°	15.1	16.3	13.5	11.5	9.9	8.3
58.5°	11.5	14.3	12.3	10.3	8.3	7.2
59°	9.9	12.7	10.7	8.7	7.2	6.4
59.5°	9.1	10.7	9.5	7.6	6.4	6.0
60°	8.3	8.7	8.0	6.8	6.0	5.6
60.5°	7.6	8.0	7.6	6.4	5.6	5.2
61°	7.2	7.6	6.8	6.0	5.2	4.8
61.5°	6.4	6.8	6.4	5.6	4.8	4.4
62°	6.0	6.4	6.0	5.2	4.4	4.0
62.5°	5.6	6.0	5.6	4.8	4.0	3.6
63°	5.2	5.6	5.2	4.4	4.0	3.6
63.5°	4.8	5.2	4.8	4.0	3.6	3.2
64°	4.4	4.8	4.4	3.6	3.2	3.2
64.5°	4.4	4.4	4.0	3.6	3.2	2.8
65°	4.0	4.4	4.0	3.2	2.8	2.8
65.5°	3.6	4.0	3.6	3.2	2.8	2.4
66°	3.6	3.6	3.2	2.8	2.4	2.4



TEST NUMBER: P776287

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	2.8	3.2	2.8	2.4	2.0	2.0
68°	2.8	2.8	2.4	2.0	2.0	1.6
68.5°	2.4	2.8	2.4	2.0	1.6	1.6
69°	2.4	2.4	2.4	2.0	1.6	1.6
69.5°	2.0	2.4	2.0	1.6	1.6	1.2
70°	2.0	2.0	2.0	1.6	1.2	1.2
70.5°	2.0	2.0	2.0	1.6	1.2	1.2
71°	1.6	2.0	1.6	1.6	1.2	1.2
71.5°	1.6	1.6	1.6	1.2	1.2	0.8
72°	1.6	1.6	1.6	1.2	1.2	0.8
72.5°	1.6	1.6	1.2	1.2	0.8	0.8
73°	1.2	1.2	1.2	1.2	0.8	0.8
73.5°	1.2	1.2	1.2	0.8	0.8	0.8
74°	1.2	1.2	1.2	0.8	0.8	0.8
74.5°	1.2	1.2	1.2	0.8	0.8	0.4
75°	0.8	1.2	0.8	0.8	0.8	0.4
75.5°	0.8	0.8	0.8	0.8	0.4	0.4
76°	0.8	0.8	0.8	0.8	0.4	0.4
76.5°	0.8	0.8	0.8	0.4	0.4	0.4
77°	0.8	0.8	0.8	0.4	0.4	0.4
77.5°	0.8	0.8	0.8	0.4	0.4	0.4
78°	0.8	0.8	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.0
80°	0.4	0.4	0.4	0.4	0.0	0.0
80.5°	0.4	0.4	0.4	0.4	0.0	0.0
81°	0.4	0.4	0.4	0.4	0.0	0.0
81.5°	0.4	0.4	0.4	0.0	0.0	0.0
82°	0.4	0.4	0.4	0.0	0.0	0.0
82.5°	0.4	0.4	0.4	0.0	0.0	0.0
83°	0.4	0.4	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: P776287
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-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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21.5°	3545.9	3452.8	3445.7	3407.5	3369.4	3360.6	3380.5	3467.2	3569.3	3639.3	3634.9
22°	3486.2	3389.2	3380.5	3340.7	3304.2	3298.2	3319.7	3409.5	3509.3	3578.5	3572.9



44°	654.7	581.6	565.3	529.1	519.2	547.8	575.6	606.6	647.6	701.2	712.7
44.5°	611.0	541.4	526.7	490.1	479.8	511.6	539.4	567.3	603.8	656.7	668.6



66.5°	2.0	2.0	2.4	2.8	2.8	2.8	2.4	2.4	2.4	2.8	2.8
67°	2.0	2.0	2.4	2.4	2.8	2.4	2.4	2.4	2.4	2.4	2.8



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

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21.5°	3684.6	3741.0	3758.9	3721.2	3634.5	3545.9
22°	3624.6	3681.8	3695.3	3655.6	3574.1	3486.2



44°	779.1	822.5	802.6	762.4	712.7	654.7
44.5°	733.4	772.8	754.5	715.1	666.6	611.0

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66.5°	3.2	3.6	3.2	2.8	2.4	2.0
67°	3.2	3.2	2.8	2.4	2.0	2.0

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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)