

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: P776288

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

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776288
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-4000K
Description: 4 INCH ROUND MEDIUM SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

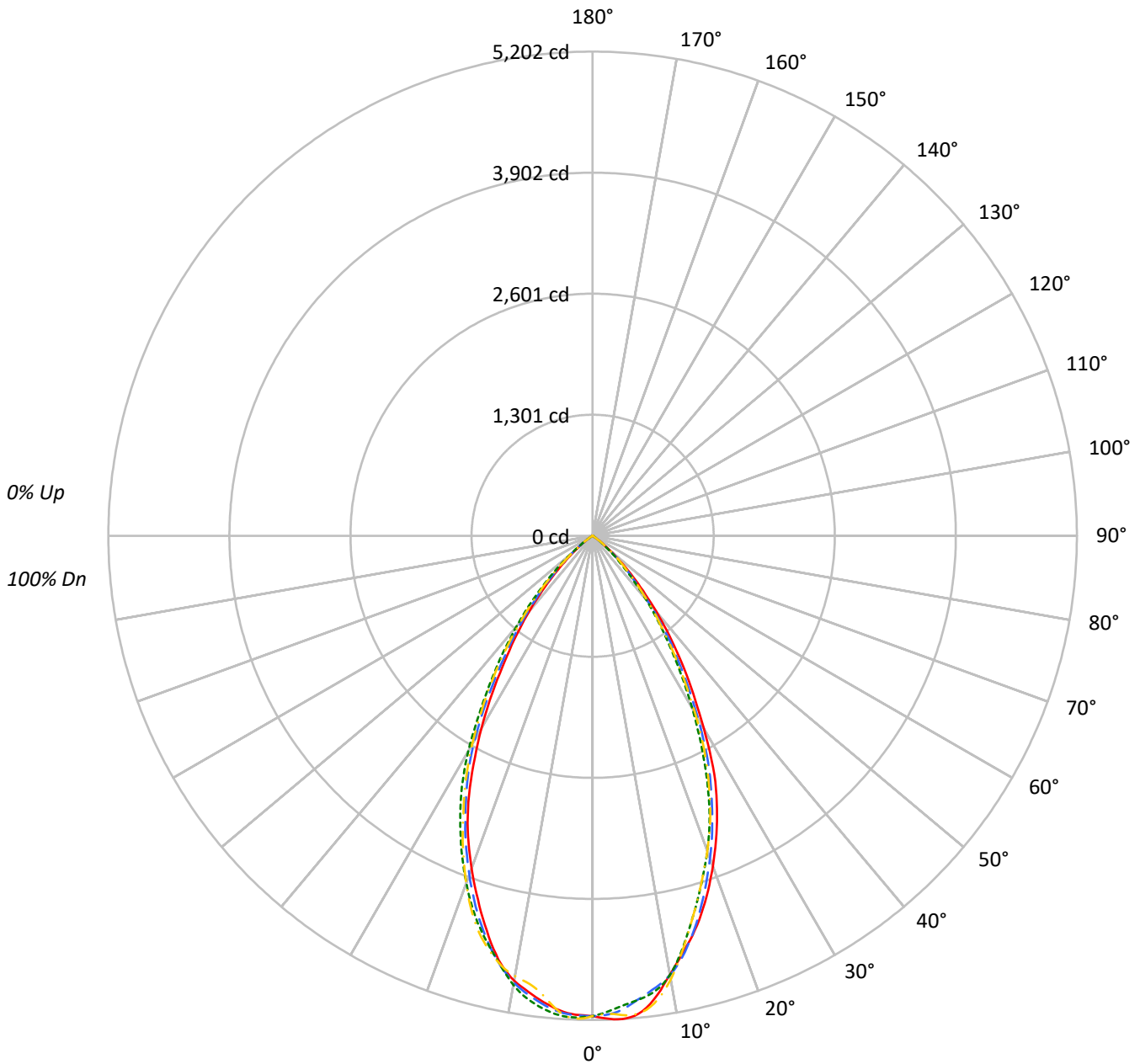
Lumens per Lamp: N/A
Luminaire Lumens: 4695.6 lumens
Efficiency: N/A
Efficacy: 122.0 lumens/watt
Spacing Criteria (0/90/45): 0.87 / 0.87 / 0.88
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (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	100	100	100	100		
	1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93	93	93	93	93	93		
	2	108	103	98	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86	86	86	86	86	86		
	3	102	95	90	86	100	94	89	86	91	87	84	89	86	83	87	84	82	80	80	80	80	80	80		
	4	97	89	83	79	95	88	82	78	85	81	77	83	80	76	82	78	76	74	74	74	74	74	74		
	5	91	83	77	72	90	82	76	72	80	75	71	78	74	71	77	73	70	69	69	69	69	69	69		
	6	87	78	71	67	85	77	71	67	75	70	66	74	69	66	72	68	65	64	64	64	64	64	64		
	7	82	73	66	62	81	72	66	62	71	65	62	69	65	61	68	64	61	60	60	60	60	60	60		
	8	78	68	62	58	77	68	62	58	67	61	57	66	61	57	65	60	57	56	56	56	56	56	56		
	9	74	64	58	54	73	64	58	54	63	58	54	62	57	54	61	57	53	52	52	52	52	52	52		
	10	71	61	55	51	70	60	54	51	59	54	50	59	54	50	58	53	50	49	49	49	49	49	49		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	649586	649586	649586	649586
5°	654000	634798	641367	649364
10°	611596	611903	620196	626279
15°	564622	547241	572348	582849
20°	505666	482403	509229	531367
25°	438103	404402	438492	467152
30°	346774	310517	346716	387958
35°	256016	221771	252913	292673
40°	174832	146214	173304	208922
45°	102800	79841	101234	130636
50°	43719	35516	47106	63376
55°	8842	8667	14942	18672
60°	1410	1737	1611	2240
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: 130636 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	477.8	10.2
10°-20°	1214.7	25.9
20°-30°	1424.9	30.3
30°-40°	1043.1	22.2
40°-50°	460.2	9.8
50°-60°	70.3	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°	3117.5	66.4
0°-40°	4160.6	88.6
0°-60°	4691.1	99.9
0°-90°	4695.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4695.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	5162	5162	5162	5162	5162	
5°	5177	5025	5077	5140	5177	481
15°	4334	4200	4393	4474	4334	1207
25°	3155	2912	3158	3364	3155	1429
35°	1666	1444	1646	1905	1666	1042
45°	578	449	569	734	578	454
55°	40	40	68	85	40	58
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°	5161.6	5161.6	5161.6	5161.6	5161.6	5161.6	5161.6	5161.6	5161.6	5161.6	5161.6
0.5°	5171.2	5164.4	5157.5	5156.3	5148.7	5148.7	5152.7	5155.5	5158.3	5159.5	5160.3
1°	5179.7	5166.8	5154.3	5147.8	5137.8	5138.6	5145.4	5150.3	5154.3	5157.1	5159.9
1.5°	5187.4	5169.6	5149.9	5137.0	5124.1	5130.5	5140.6	5147.8	5151.5	5153.9	5158.3
2°	5194.2	5171.2	5143.4	5123.3	5108.7	5122.5	5140.6	5149.5	5148.7	5149.9	5155.1
2.5°	5199.4	5170.4	5133.3	5104.7	5093.0	5115.6	5144.2	5153.1	5143.4	5142.6	5151.1
3°	5202.3	5166.0	5120.4	5084.6	5076.9	5111.6	5150.3	5156.7	5136.2	5131.7	5145.0
3.5°	5201.9	5157.9	5103.1	5062.8	5062.4	5108.7	5157.9	5159.9	5124.5	5117.2	5138.2
4°	5197.8	5145.4	5082.5	5039.4	5048.7	5106.7	5163.6	5160.3	5110.8	5099.5	5128.5
4.5°	5189.8	5128.1	5058.8	5017.7	5036.6	5104.3	5166.0	5157.9	5095.0	5078.1	5115.6
5°	5176.9	5107.1	5034.6	4997.1	5024.9	5099.9	5163.6	5150.3	5076.9	5054.3	5100.3
5.5°	5157.9	5083.0	5010.8	4977.7	5013.2	5092.2	5155.9	5139.4	5057.2	5028.1	5082.5
6°	5134.1	5055.1	4987.4	4961.2	5001.1	5080.1	5142.2	5123.3	5037.0	5003.1	5063.6
6.5°	5103.5	5025.7	4964.8	4945.5	4987.4	5065.2	5123.3	5103.9	5015.6	4977.7	5043.9
7°	5067.2	4993.5	4943.9	4930.2	4970.9	5044.3	5098.7	5079.3	4994.7	4956.0	5023.3
7.5°	5026.9	4958.8	4920.9	4914.9	4951.9	5016.8	5069.2	5051.9	4972.5	4933.8	5001.9
8°	4983.0	4922.1	4898.3	4898.3	4929.4	4984.6	5031.4	5019.7	4949.5	4914.1	4979.4
8.5°	4936.6	4881.0	4874.6	4879.4	4902.4	4947.9	4989.4	4984.6	4927.0	4897.1	4956.4
9°	4885.8	4840.3	4849.2	4857.2	4869.3	4903.6	4942.7	4945.9	4903.2	4881.8	4930.2
9.5°	4835.1	4798.8	4821.3	4831.4	4831.8	4855.2	4893.1	4902.8	4879.8	4866.1	4902.8
10°	4785.9	4756.9	4790.7	4801.6	4788.3	4802.8	4837.1	4856.8	4853.2	4849.2	4872.1
10.5°	4738.3	4714.1	4756.4	4765.7	4740.7	4744.8	4779.8	4806.8	4823.8	4831.0	4841.1
11°	4692.4	4671.4	4718.6	4721.4	4689.9	4684.3	4717.8	4754.4	4789.9	4810.9	4806.4
11.5°	4647.6	4626.7	4675.0	4677.4	4631.1	4624.2	4655.3	4698.0	4753.2	4785.5	4770.2
12°	4602.9	4581.1	4627.9	4625.4	4571.0	4553.3	4586.3	4638.7	4712.1	4756.4	4731.5
12.5°	4558.9	4534.3	4579.5	4567.4	4510.2	4488.0	4522.7	4577.5	4667.0	4721.0	4688.7
13°	4516.2	4488.0	4527.1	4508.5	4448.9	4429.1	4456.6	4516.2	4615.0	4679.9	4644.8
13.5°	4473.5	4437.6	4474.7	4452.9	4386.4	4359.0	4391.7	4454.1	4562.6	4636.3	4599.2
14°	4428.3	4386.0	4420.3	4390.8	4323.1	4297.3	4326.8	4391.3	4509.0	4586.3	4552.1
14.5°	4381.2	4333.2	4365.0	4329.6	4260.6	4237.3	4265.5	4330.8	4452.1	4534.3	4502.9
15°	4333.6	4279.6	4307.0	4267.9	4200.2	4174.0	4200.2	4270.3	4392.9	4480.7	4450.9
15.5°	4283.6	4223.2	4248.6	4205.4	4139.3	4111.9	4140.1	4209.9	4335.2	4426.3	4398.5
16°	4232.4	4167.5	4188.1	4142.9	4078.9	4052.7	4076.4	4151.0	4276.0	4368.3	4345.3
16.5°	4176.8	4108.7	4127.6	4081.7	4017.6	3993.8	4016.0	4094.6	4218.3	4310.2	4290.9
17°	4123.6	4050.6	4065.2	4019.2	3959.5	3933.3	3955.5	4034.1	4160.3	4251.8	4234.9
17.5°	4066.8	3990.2	4003.5	3957.1	3899.5	3875.3	3897.9	3976.5	4098.6	4191.7	4176.4
18°	4009.9	3930.5	3940.2	3895.5	3839.0	3815.2	3834.6	3919.6	4040.2	4131.3	4118.0
18.5°	3951.9	3868.8	3877.3	3833.4	3779.0	3756.8	3774.9	3862.0	3982.9	4068.0	4057.5
19°	3894.2	3808.8	3812.0	3770.1	3720.5	3698.3	3716.1	3802.7	3922.9	4007.5	3997.0
19.5°	3835.0	3747.1	3750.7	3708.0	3661.3	3642.3	3660.0	3746.7	3863.2	3943.8	3935.4
20°	3775.7	3687.9	3686.2	3646.7	3602.0	3584.3	3600.0	3689.5	3802.3	3880.9	3873.7
20.5°	3715.7	3626.6	3623.4	3584.7	3543.2	3527.0	3541.5	3630.6	3742.3	3817.3	3811.2
21°	3655.6	3563.7	3559.7	3521.8	3480.3	3467.4	3483.5	3573.4	3681.0	3754.8	3747.9



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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	3472.6	3372.2	3358.1	3319.8	3282.4	3279.1	3301.7	3395.6	3497.2	3565.7	3560.1
23°	3410.9	3305.3	3289.2	3250.1	3211.4	3210.2	3234.4	3331.5	3435.9	3503.2	3498.4
23.5°	3347.7	3239.6	3219.9	3178.0	3136.8	3144.5	3167.9	3266.6	3368.6	3437.1	3432.7
24°	3283.6	3172.3	3151.3	3104.6	3061.9	3073.6	3097.7	3196.5	3299.7	3370.6	3364.6
24.5°	3220.7	3105.8	3081.6	3028.4	2986.9	3002.6	3027.2	3125.1	3227.5	3302.1	3298.1
25°	3155.0	3036.5	3012.3	2953.8	2912.3	2931.7	2957.1	3053.8	3157.8	3232.8	3234.4
25.5°	3090.1	2969.2	2943.0	2877.2	2837.3	2860.3	2886.5	2982.9	3082.0	3162.6	3164.2
26°	3023.2	2901.0	2873.2	2799.9	2758.7	2781.7	2816.0	2911.5	3005.8	3092.1	3098.1
26.5°	2952.6	2830.5	2802.3	2722.5	2679.3	2708.0	2744.6	2840.2	2930.1	3022.0	3032.0
27°	2876.0	2756.7	2730.5	2645.9	2601.1	2627.7	2669.3	2763.2	2853.9	2951.4	2965.9
27.5°	2798.2	2684.2	2653.5	2570.5	2522.9	2549.1	2598.7	2683.4	2773.3	2881.3	2899.8
28°	2718.4	2607.2	2576.1	2495.1	2443.5	2470.9	2519.7	2601.9	2692.6	2811.1	2833.3
28.5°	2635.8	2527.8	2499.6	2418.9	2365.7	2391.9	2442.3	2522.1	2615.6	2735.0	2761.2
29°	2551.6	2448.8	2421.4	2344.8	2288.7	2312.9	2364.5	2441.1	2539.1	2658.8	2687.0
29.5°	2466.9	2367.3	2342.3	2270.6	2212.6	2233.9	2284.3	2364.9	2462.9	2581.8	2610.4
30°	2386.3	2286.3	2265.8	2196.8	2136.8	2154.5	2202.5	2284.3	2385.9	2503.6	2532.6
30.5°	2307.3	2204.5	2189.6	2123.5	2060.6	2077.5	2125.1	2205.3	2309.3	2425.0	2454.0
31°	2229.9	2120.7	2113.4	2047.3	1987.2	1999.7	2046.1	2130.3	2231.9	2349.2	2374.6
31.5°	2154.9	2041.6	2039.6	1973.9	1913.9	1924.7	1969.1	2056.6	2154.9	2274.2	2296.8
32°	2079.9	1965.9	1966.7	1901.0	1841.7	1855.8	1892.9	1981.6	2080.7	2199.3	2218.6
32.5°	2010.2	1890.9	1894.9	1826.8	1771.6	1784.1	1822.0	1910.6	2004.6	2125.9	2140.8
33°	1942.5	1817.9	1824.8	1753.4	1701.8	1715.1	1749.0	1839.3	1929.6	2052.1	2064.6
33.5°	1873.6	1745.8	1755.5	1686.1	1633.7	1651.1	1679.7	1769.6	1855.8	1981.6	1985.2
34°	1803.8	1676.8	1686.5	1618.8	1568.8	1580.5	1611.5	1701.8	1784.1	1911.4	1909.0
34.5°	1733.7	1610.3	1620.0	1551.9	1505.1	1516.4	1544.2	1634.5	1713.5	1841.7	1835.7
35°	1666.4	1544.6	1552.3	1488.6	1443.5	1458.4	1479.3	1568.8	1646.2	1772.8	1764.7
35.5°	1600.7	1481.4	1485.0	1437.8	1382.6	1394.7	1416.5	1505.9	1581.3	1703.1	1692.6
36°	1533.4	1444.3	1440.6	1376.1	1324.5	1329.4	1356.0	1441.8	1520.5	1634.5	1623.6
36.5°	1470.5	1378.6	1373.3	1314.9	1267.3	1273.4	1297.1	1382.2	1459.2	1566.4	1556.3
37°	1411.2	1312.5	1305.6	1253.2	1210.5	1214.1	1238.7	1320.9	1399.1	1499.5	1493.0
37.5°	1352.4	1246.4	1237.5	1191.9	1155.3	1156.5	1183.9	1260.1	1341.9	1435.0	1428.5
38°	1293.5	1180.6	1169.8	1135.1	1100.0	1101.6	1129.9	1205.2	1282.2	1370.1	1367.7
38.5°	1234.3	1124.6	1108.1	1079.1	1045.2	1047.6	1076.7	1150.4	1226.2	1309.6	1307.2
39°	1175.4	1071.0	1053.7	1022.2	992.4	997.2	1025.1	1091.6	1168.2	1248.8	1248.0
39.5°	1119.0	1017.8	998.5	967.4	940.0	946.9	973.1	1038.8	1111.7	1189.9	1188.3
40°	1064.2	964.2	945.6	913.4	890.0	897.7	923.5	987.2	1054.9	1130.7	1131.9
40.5°	1009.7	913.0	890.8	859.4	838.0	850.5	875.9	934.8	1002.9	1074.2	1076.2
41°	955.3	864.2	842.5	808.2	790.9	803.8	829.6	884.8	948.1	1018.2	1021.8
41.5°	903.7	815.4	793.7	759.0	742.5	759.0	785.2	836.0	895.7	963.8	967.4
42°	852.1	768.3	746.5	711.0	696.5	715.9	741.7	789.2	845.7	909.8	916.2
42.5°	803.0	722.3	699.0	664.7	651.4	673.6	700.2	743.7	797.3	858.6	865.0
43°	755.0	676.0	656.6	621.2	607.9	632.8	661.1	698.6	750.6	807.4	815.9
43.5°	709.0	632.0	614.3	578.4	566.3	592.9	621.6	656.2	703.4	758.2	767.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	577.6	509.5	496.2	459.5	448.6	483.7	511.9	537.3	568.8	622.0	635.7
45.5°	536.5	470.8	459.9	424.0	414.0	450.7	477.7	499.8	526.8	580.4	594.2
46°	496.2	434.9	425.7	389.8	384.5	418.0	444.6	464.4	486.9	540.1	553.0
46.5°	456.3	400.3	393.0	357.9	355.1	389.0	412.8	430.9	447.0	501.8	514.3
47°	417.6	366.8	361.6	328.1	325.3	360.0	384.5	398.3	410.7	464.4	478.5
47.5°	380.5	335.0	331.3	299.9	295.9	330.9	356.7	369.2	381.3	428.9	442.6
48°	346.7	304.3	302.7	274.1	266.8	301.9	328.5	340.2	351.9	398.7	407.5
48.5°	312.8	275.3	275.7	249.9	243.5	273.3	300.3	311.2	322.5	368.4	376.5
49°	281.0	248.3	249.9	226.5	221.7	248.7	272.1	282.2	292.6	337.8	345.4
49.5°	251.5	222.5	225.7	205.6	201.1	224.9	246.3	256.8	263.6	307.6	314.4
50°	223.3	197.9	201.9	185.8	181.4	202.4	222.9	232.2	240.6	277.3	283.8
50.5°	197.9	174.5	180.2	166.9	162.8	181.0	199.9	210.0	219.3	251.5	257.2
51°	173.7	152.8	159.6	148.3	145.5	160.4	178.6	189.5	198.7	227.3	232.2
51.5°	150.8	135.4	139.5	133.0	129.0	141.5	157.6	169.3	179.4	205.2	207.2
52°	133.0	118.1	122.9	117.7	112.9	123.7	139.1	150.4	161.2	184.2	184.2
52.5°	115.7	100.8	106.8	102.4	97.1	106.8	120.1	132.2	143.9	164.1	162.0
53°	98.4	83.4	90.7	86.7	82.6	90.7	103.2	115.3	127.8	145.1	141.9
53.5°	81.0	66.1	74.6	71.7	68.9	76.2	87.5	98.8	110.8	127.4	122.5
54°	63.7	53.6	61.3	58.9	57.2	62.9	72.6	83.8	95.1	110.4	104.8
54.5°	51.2	42.7	49.6	47.6	48.4	53.2	59.7	69.7	80.6	93.9	88.7
55°	40.3	31.8	38.7	36.7	39.5	43.5	50.0	57.6	68.1	79.4	73.4
55.5°	29.4	22.2	28.2	26.6	30.6	33.9	40.7	48.4	58.4	66.1	60.1
56°	20.2	14.9	19.3	18.5	21.8	24.2	31.4	39.1	49.2	55.6	50.8
56.5°	13.3	12.9	13.3	13.3	13.3	14.9	22.2	29.8	39.5	45.5	41.1
57°	11.7	11.3	12.1	12.1	11.3	11.3	12.9	21.0	29.8	35.5	31.8
57.5°	10.1	9.3	10.5	10.9	10.1	10.1	10.1	11.7	20.6	25.4	22.6
58°	8.5	7.7	9.3	9.7	9.3	8.9	8.9	9.3	10.9	15.3	13.3
58.5°	7.3	6.9	8.1	8.5	8.5	8.5	8.1	8.1	8.9	10.9	10.1
59°	6.4	6.4	7.3	7.7	7.7	7.7	7.3	7.3	7.7	8.9	8.9
59.5°	6.0	6.0	6.9	7.3	7.3	7.3	6.9	6.9	6.9	7.7	8.1
60°	5.6	5.2	6.0	6.4	6.9	6.4	6.4	6.0	6.4	6.9	7.3
60.5°	5.2	4.8	5.6	6.0	6.4	6.0	5.6	5.6	6.0	6.4	6.9
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: P776288

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

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: P776288
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRC-4000lm-4000K

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: P776288

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	5161.6	5161.6	5161.6	5161.6	5161.6	5161.6
0.5°	5166.4	5166.0	5169.6	5173.6	5174.0	5171.2
1°	5169.2	5172.0	5178.1	5183.7	5184.5	5179.7
1.5°	5170.8	5176.5	5183.3	5189.8	5193.0	5187.4
2°	5172.0	5178.9	5183.7	5191.8	5199.0	5194.2
2.5°	5172.8	5178.5	5179.3	5187.8	5201.1	5199.4
3°	5172.4	5175.7	5167.6	5175.3	5198.6	5202.3
3.5°	5172.0	5170.8	5149.5	5156.3	5190.6	5201.9
4°	5171.6	5163.2	5126.1	5127.7	5177.3	5197.8
4.5°	5169.6	5153.1	5096.7	5093.8	5158.3	5189.8
5°	5166.4	5140.2	5061.6	5055.9	5133.3	5176.9
5.5°	5162.8	5124.9	5026.1	5015.2	5104.3	5157.9
6°	5157.1	5107.5	4990.2	4976.9	5076.1	5134.1
6.5°	5147.4	5089.4	4955.6	4941.5	5046.7	5103.5
7°	5133.3	5069.6	4925.7	4910.8	5011.6	5067.2
7.5°	5114.8	5048.7	4901.6	4885.0	4979.0	5026.9
8°	5088.6	5024.9	4881.0	4863.7	4944.3	4983.0
8.5°	5057.2	4999.5	4863.7	4847.5	4908.4	4936.6
9°	5021.7	4970.1	4847.9	4831.8	4871.3	4885.8
9.5°	4980.6	4937.0	4835.9	4817.3	4835.5	4835.1
10°	4933.4	4900.8	4820.1	4802.4	4798.0	4785.9
10.5°	4887.5	4860.4	4803.2	4786.7	4760.9	4738.3
11°	4838.3	4818.5	4784.3	4768.1	4722.6	4692.4
11.5°	4787.1	4774.6	4762.1	4746.8	4685.5	4647.6
12°	4739.1	4731.1	4734.7	4721.0	4648.0	4602.9
12.5°	4692.8	4687.1	4705.7	4691.1	4610.5	4558.9
13°	4645.2	4643.2	4674.6	4660.9	4574.7	4516.2
13.5°	4598.0	4600.9	4640.4	4627.1	4535.6	4473.5
14°	4552.5	4558.1	4604.5	4591.6	4495.2	4428.3
14.5°	4506.5	4517.0	4567.8	4554.9	4453.3	4381.2
15°	4459.8	4473.5	4526.7	4515.4	4409.8	4333.6
15.5°	4413.4	4431.2	4484.4	4475.1	4362.6	4283.6
16°	4363.4	4386.0	4439.6	4430.3	4314.7	4232.4
16.5°	4314.3	4340.1	4394.1	4382.0	4265.5	4176.8
17°	4259.8	4291.3	4345.7	4332.0	4213.5	4123.6
17.5°	4207.0	4242.1	4293.3	4278.0	4159.9	4066.8
18°	4150.6	4190.1	4237.3	4221.1	4104.7	4009.9
18.5°	4094.6	4136.5	4181.2	4161.1	4045.4	3951.9
19°	4035.3	4080.1	4121.6	4098.2	3988.2	3894.2
19.5°	3976.9	4026.1	4061.5	4034.1	3929.3	3835.0
20°	3916.0	3967.6	4001.5	3971.2	3869.2	3775.7
20.5°	3857.2	3911.6	3936.2	3905.9	3808.4	3715.7
21°	3796.3	3851.5	3874.5	3839.8	3747.5	3655.6



TEST NUMBER: P776288

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3616.9	3675.0	3684.2	3637.5	3559.3	3472.6
23°	3554.4	3614.9	3617.7	3569.8	3495.6	3410.9
23.5°	3492.0	3552.4	3550.0	3500.0	3427.9	3347.7
24°	3431.5	3490.7	3483.5	3427.5	3362.6	3283.6
24.5°	3369.8	3427.9	3414.6	3356.5	3294.0	3220.7
25°	3305.7	3364.2	3343.2	3286.4	3229.1	3155.0
25.5°	3243.7	3300.5	3275.5	3217.1	3158.2	3090.1
26°	3181.6	3236.0	3208.6	3149.7	3092.5	3023.2
26.5°	3115.9	3171.9	3140.5	3080.8	3024.0	2952.6
27°	3049.8	3106.6	3073.6	3013.9	2954.6	2876.0
27.5°	2984.1	3039.7	3004.6	2945.8	2879.3	2798.2
28°	2918.0	2969.6	2934.9	2876.4	2811.1	2718.4
28.5°	2852.3	2896.6	2865.6	2805.5	2736.6	2635.8
29°	2778.5	2823.6	2795.0	2735.8	2659.6	2551.6
29.5°	2702.3	2747.9	2725.3	2662.8	2583.4	2466.9
30°	2622.1	2669.7	2651.9	2588.6	2504.8	2386.3
30.5°	2540.3	2589.8	2575.3	2512.5	2422.6	2307.3
31°	2464.5	2507.6	2500.0	2436.3	2343.6	2229.9
31.5°	2380.2	2424.6	2423.0	2360.5	2262.1	2154.9
32°	2292.8	2344.8	2347.2	2287.1	2184.7	2079.9
32.5°	2216.2	2266.2	2269.4	2213.0	2108.2	2010.2
33°	2136.8	2190.4	2196.4	2142.0	2032.4	1942.5
33.5°	2057.4	2113.0	2117.4	2070.7	1961.0	1873.6
34°	1982.4	2043.7	2044.9	1998.5	1892.1	1803.8
34.5°	1911.0	1973.9	1975.1	1928.0	1824.8	1733.7
35°	1842.1	1905.0	1902.6	1859.0	1757.9	1666.4
35.5°	1774.4	1837.3	1832.8	1789.3	1693.8	1600.7
36°	1707.5	1770.8	1765.9	1721.2	1629.3	1533.4
36.5°	1640.6	1705.5	1698.6	1651.5	1567.2	1470.5
37°	1574.9	1639.8	1630.5	1582.9	1505.1	1411.2
37.5°	1510.0	1574.9	1568.0	1518.4	1439.0	1352.4
38°	1445.9	1509.2	1501.9	1455.6	1379.4	1293.5
38.5°	1382.6	1446.3	1432.6	1394.3	1320.5	1234.3
39°	1320.1	1388.2	1374.5	1332.6	1261.3	1175.4
39.5°	1260.5	1329.8	1316.5	1271.3	1202.0	1119.0
40°	1202.4	1271.7	1258.8	1209.7	1143.2	1064.2
40.5°	1145.6	1213.7	1200.8	1148.4	1087.5	1009.7
41°	1094.0	1155.7	1142.8	1090.8	1032.7	955.3
41.5°	1038.4	1100.4	1085.1	1034.3	979.1	903.7
42°	986.4	1046.4	1028.3	979.5	926.3	852.1
42.5°	935.2	991.6	973.5	927.1	875.1	803.0
43°	888.0	938.0	918.6	875.1	823.9	755.0
43.5°	837.2	885.2	865.4	822.7	773.1	709.0



TEST NUMBER: P776288

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	699.8	734.0	715.9	678.0	628.0	577.6
45.5°	653.4	686.5	667.9	632.4	582.9	536.5
46°	611.1	640.5	622.0	587.7	539.7	496.2
46.5°	568.4	595.8	578.4	545.0	497.4	456.3
47°	528.0	552.2	534.9	503.5	457.1	417.6
47.5°	487.3	509.9	493.4	463.1	417.6	380.5
48°	449.4	469.6	452.3	424.0	381.3	346.7
48.5°	412.4	430.5	414.4	388.2	347.1	312.8
49°	378.9	393.8	378.1	351.9	313.6	281.0
49.5°	345.9	358.3	343.4	318.0	282.2	251.5
50°	312.4	323.7	308.0	285.0	253.5	223.3
50.5°	279.3	291.4	277.3	254.3	224.9	197.9
51°	250.7	261.2	247.5	226.1	198.7	173.7
51.5°	223.7	232.6	220.5	199.1	174.9	150.8
52°	197.5	206.0	193.5	173.3	151.6	133.0
52.5°	173.7	181.4	169.7	150.8	133.8	115.7
53°	152.0	157.6	146.7	133.0	115.7	98.4
53.5°	131.0	137.1	129.4	114.9	98.0	81.0
54°	111.3	119.7	112.1	97.1	79.8	63.7
54.5°	94.3	102.4	94.7	79.4	62.1	51.2
55°	78.2	85.1	77.4	61.7	50.4	40.3
55.5°	63.7	67.3	60.1	49.6	39.1	29.4
56°	54.0	54.8	48.4	39.1	28.6	20.2
56.5°	44.3	43.9	38.3	28.2	18.9	13.3
57°	34.7	33.1	27.4	19.3	12.9	11.7
57.5°	25.0	23.8	18.9	13.3	11.7	10.1
58°	15.3	16.5	13.7	11.7	10.1	8.5
58.5°	11.7	14.5	12.5	10.5	8.5	7.3
59°	10.1	12.9	10.9	8.9	7.3	6.4
59.5°	9.3	10.9	9.7	7.7	6.4	6.0
60°	8.5	8.9	8.1	6.9	6.0	5.6
60.5°	7.7	8.1	7.7	6.4	5.6	5.2
61°	7.3	7.7	6.9	6.0	5.2	4.8
61.5°	6.4	6.9	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: P776288

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

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: P776288

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

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





21.5°	3595.6	3501.2	3494.0	3455.3	3416.6	3407.7	3427.9	3515.7	3619.3	3690.3	3685.8
22°	3535.1	3436.7	3427.9	3387.6	3350.5	3344.4	3366.2	3457.3	3558.5	3628.6	3623.0



44°	663.9	589.7	573.2	536.5	526.4	555.5	583.7	615.1	656.6	711.0	722.7
44.5°	619.5	549.0	534.1	497.0	486.5	518.8	547.0	575.2	612.3	665.9	678.0



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°	3736.2	3793.5	3811.6	3773.3	3685.4	3595.6
22°	3675.4	3733.4	3747.1	3706.8	3624.2	3535.1



44°	790.1	834.0	813.8	773.1	722.7	663.9
44.5°	743.7	783.6	765.1	725.2	676.0	619.5

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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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(END OF REPORT)