

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: P776776

Luminaire Tested: HCDJBS4050CSD-HCD82TRH-5000lm-3000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776776  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B063-HCD82TRH)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS4050CSD-HCD82TRH-5000lm-3000K  
Description: 8 INCH ROUND NARROW HAZE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5177.0 lumens  
Efficiency: N/A  
Efficacy: 107.9 lumens/watt  
Spacing Criteria (0/90/45): 0.64 / 0.65 / 0.67  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

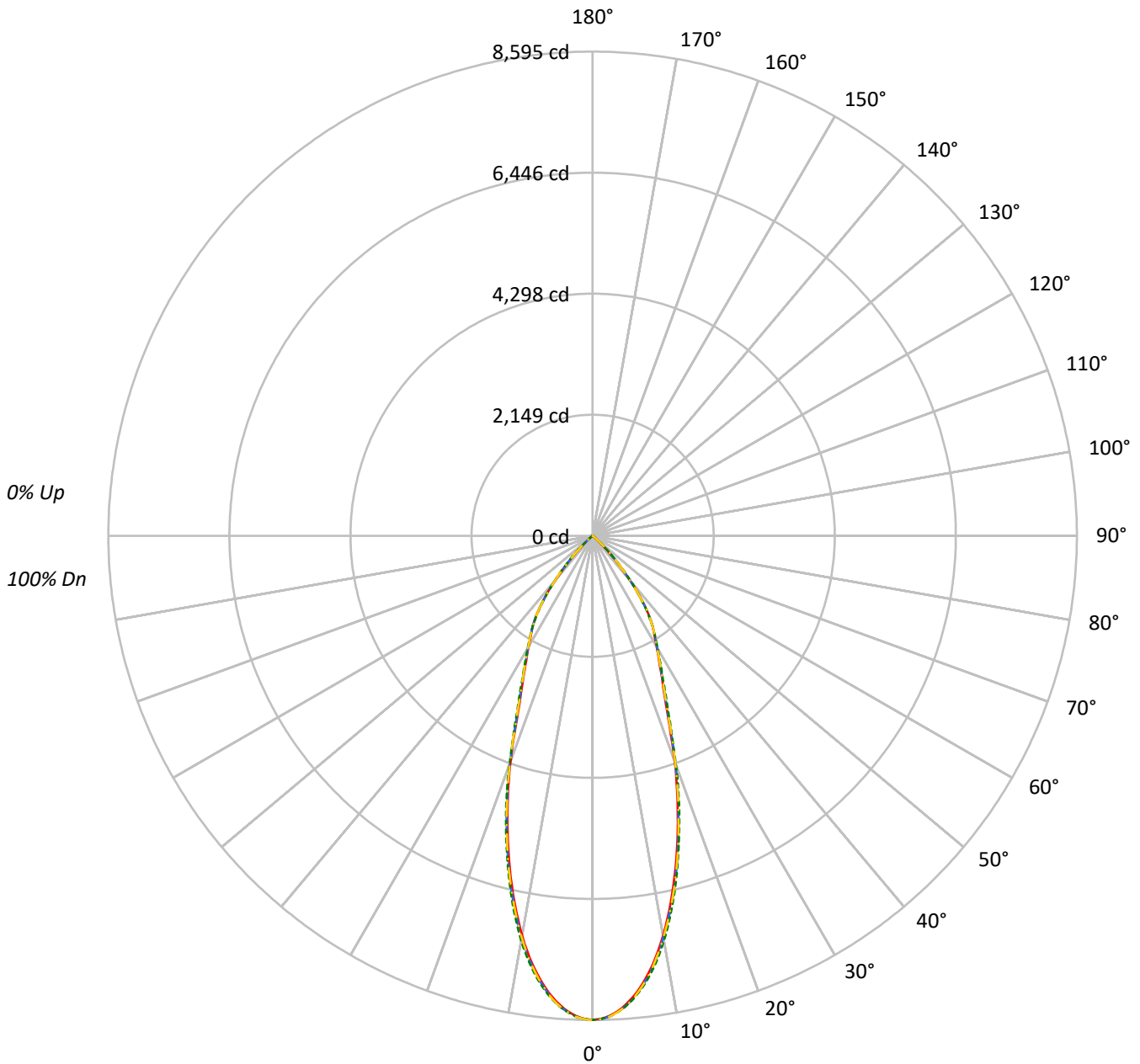
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-5000lm-3000K

### 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	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94	94	94	94	94	94		
	2	108	104	100	97	106	102	99	96	99	96	94	96	94	92	93	91	90	88	88	88	88	88	88		
	3	103	97	93	89	101	96	92	88	93	90	87	91	88	85	89	86	84	82	82	82	82	82	82		
	4	98	91	86	82	97	90	85	82	88	84	81	86	82	80	84	81	79	77	77	77	77	77	77		
	5	94	86	80	76	92	85	80	76	83	79	75	82	78	75	80	77	74	72	72	72	72	72	72		
	6	89	81	75	71	88	80	75	71	79	74	70	77	73	70	76	72	69	68	68	68	68	68	68		
	7	85	76	71	67	84	76	70	67	75	70	66	73	69	66	72	68	65	64	64	64	64	64	64		
	8	81	72	67	63	80	72	66	63	71	66	62	70	65	62	69	65	62	61	61	61	61	61	61		
	9	78	69	63	59	77	68	63	59	67	62	59	66	62	59	66	62	59	57	57	57	57	57	57		
	10	74	65	60	56	73	65	60	56	64	59	56	63	59	56	63	58	56	54	54	54	54	54	54		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	262408	262408	262408	262408
5°	251890	253045	251890	253045
10°	223355	226151	223355	226151
15°	182545	185497	182545	185497
20°	138484	140222	138484	140222
25°	99850	102558	99850	102558
30°	80103	81333	80103	81333
35°	65566	65015	65566	65015
40°	41130	42003	41130	42003
45°	15669	18177	15669	18177
50°	2342	3287	2342	3287
55°	495	522	495	522
60°	311	311	311	311
65°	202	202	202	202
70°	125	170	125	170
75°	106	106	106	106
80°	88	88	88	88
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 18177 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	754.8	14.6
10°-20°	1601.6	30.9
20°-30°	1406.6	27.2
30°-40°	1062.2	20.5
40°-50°	334.7	6.5
50°-60°	12.8	0.2
60°-70°	3.1	0.1
70°-80°	1.0	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°	3763.0	72.7
0°-40°	4825.2	93.2
0°-60°	5172.8	99.9
0°-90°	5177.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5177.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	8595	8595	8595	8595	8595	
5°	8219	8257	8219	8257	8219	752
15°	5775	5869	5775	5869	5775	1588
25°	2964	3044	2964	3044	2964	1393
35°	1759	1744	1759	1744	1759	1060
45°	363	421	363	421	363	316
55°	9	10	9	10	9	11
65°	3	3	3	3	3	3
75°	1	1	1	1	1	1
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°	8595.0	8595.0	8595.0	8595.0	8595.0	8595.0	8595.0	8595.0	8595.0	8595.0	8595.0
0.5°	8587.1	8589.0	8593.6	8595.5	8587.1	8595.5	8593.6	8589.0	8587.1	8589.0	8593.6
1°	8575.5	8577.8	8582.5	8585.7	8577.4	8585.7	8582.5	8577.8	8575.5	8577.8	8582.5
1.5°	8556.0	8558.8	8564.8	8568.5	8560.2	8568.5	8564.8	8558.8	8556.0	8558.8	8564.8
2°	8530.0	8532.3	8540.2	8544.9	8537.0	8544.9	8540.2	8532.3	8530.0	8532.3	8540.2
2.5°	8494.2	8498.8	8508.1	8513.7	8506.3	8513.7	8508.1	8498.8	8494.2	8498.8	8508.1
3°	8453.8	8458.4	8469.6	8476.5	8469.6	8476.5	8469.6	8458.4	8453.8	8458.4	8469.6
3.5°	8405.4	8411.0	8423.6	8432.4	8427.3	8432.4	8423.6	8411.0	8405.4	8411.0	8423.6
4°	8349.2	8356.2	8371.1	8381.8	8377.1	8381.8	8371.1	8356.2	8349.2	8356.2	8371.1
4.5°	8287.4	8293.9	8311.6	8324.6	8319.9	8324.6	8311.6	8293.9	8287.4	8293.9	8311.6
5°	8219.1	8226.1	8245.6	8260.9	8256.8	8260.9	8245.6	8226.1	8219.1	8226.1	8245.6
5.5°	8143.8	8151.3	8171.7	8189.4	8187.5	8189.4	8171.7	8151.3	8143.8	8151.3	8171.7
6°	8061.6	8069.5	8091.8	8112.2	8112.7	8112.2	8091.8	8069.5	8061.6	8069.5	8091.8
6.5°	7975.6	7982.1	8006.8	8029.5	8030.9	8029.5	8006.8	7982.1	7975.6	7982.1	8006.8
7°	7881.8	7889.2	7914.8	7940.3	7945.4	7940.3	7914.8	7889.2	7881.8	7889.2	7914.8
7.5°	7783.3	7789.3	7815.8	7842.7	7850.2	7842.7	7815.8	7789.3	7783.3	7789.3	7815.8
8°	7677.3	7684.3	7712.2	7741.4	7750.7	7741.4	7712.2	7684.3	7677.3	7684.3	7712.2
8.5°	7567.6	7573.7	7601.6	7634.6	7645.2	7634.6	7601.6	7573.7	7567.6	7573.7	7601.6
9°	7450.1	7458.0	7487.3	7522.6	7534.7	7522.6	7487.3	7458.0	7450.1	7458.0	7487.3
9.5°	7330.2	7338.6	7366.4	7403.6	7417.6	7403.6	7366.4	7338.6	7330.2	7338.6	7366.4
10°	7204.7	7214.0	7242.8	7283.3	7294.9	7283.3	7242.8	7214.0	7204.7	7214.0	7242.8
10.5°	7075.1	7084.4	7114.1	7156.9	7168.0	7156.9	7114.1	7084.4	7075.1	7084.4	7114.1
11°	6936.6	6951.5	6981.7	7026.3	7036.1	7026.3	6981.7	6951.5	6936.6	6951.5	6981.7
11.5°	6803.3	6815.3	6845.5	6888.8	6900.4	6888.8	6845.5	6815.3	6803.3	6815.3	6845.5
12°	6661.5	6675.9	6707.1	6750.8	6761.4	6750.8	6707.1	6675.9	6661.5	6675.9	6707.1
12.5°	6519.3	6534.2	6565.8	6607.2	6616.5	6607.2	6565.8	6534.2	6519.3	6534.2	6565.8
13°	6373.4	6390.2	6424.1	6465.4	6472.9	6465.4	6424.1	6390.2	6373.4	6390.2	6424.1
13.5°	6227.5	6244.3	6279.6	6315.8	6326.5	6315.8	6279.6	6244.3	6227.5	6244.3	6279.6
14°	6077.9	6096.0	6131.8	6164.8	6176.4	6164.8	6131.8	6096.0	6077.9	6096.0	6131.8
14.5°	5926.9	5945.5	5981.7	6012.9	6022.6	6012.9	5981.7	5945.5	5926.9	5945.5	5981.7
15°	5775.4	5794.5	5830.2	5861.8	5868.8	5861.8	5830.2	5794.5	5775.4	5794.5	5830.2
15.5°	5623.5	5642.0	5677.8	5708.0	5718.7	5708.0	5677.8	5642.0	5623.5	5642.0	5677.8
16°	5472.4	5488.7	5524.5	5554.7	5567.2	5554.7	5524.5	5488.7	5472.4	5488.7	5524.5
16.5°	5323.3	5337.2	5373.0	5402.3	5415.8	5402.3	5373.0	5337.2	5323.3	5337.2	5373.0
17°	5169.9	5185.3	5217.8	5252.2	5262.4	5252.2	5217.8	5185.3	5169.9	5185.3	5217.8
17.5°	5017.1	5032.4	5064.9	5099.8	5111.9	5099.8	5064.9	5032.4	5017.1	5032.4	5064.9
18°	4867.0	4878.6	4913.4	4947.4	4959.4	4947.4	4913.4	4878.6	4867.0	4878.6	4913.4
18.5°	4716.9	4728.5	4759.6	4792.6	4805.6	4792.6	4759.6	4728.5	4716.9	4728.5	4759.6
19°	4566.3	4577.5	4608.2	4636.0	4650.9	4636.0	4608.2	4577.5	4566.3	4577.5	4608.2
19.5°	4415.8	4427.9	4453.0	4476.6	4488.3	4476.6	4453.0	4427.9	4415.8	4427.9	4453.0
20°	4262.4	4272.7	4292.6	4315.4	4315.9	4315.4	4292.6	4272.7	4262.4	4272.7	4292.6
20.5°	4107.2	4113.7	4135.1	4156.5	4153.7	4156.5	4135.1	4113.7	4107.2	4113.7	4135.1
21°	3948.8	3959.5	3979.9	4000.8	4000.4	4000.8	3979.9	3959.5	3948.8	3959.5	3979.9



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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°	3508.3	3521.3	3539.9	3573.8	3588.7	3573.8	3539.9	3521.3	3508.3	3521.3	3539.9
23°	3381.4	3391.2	3413.5	3442.3	3459.0	3442.3	3413.5	3391.2	3381.4	3391.2	3413.5
23.5°	3256.0	3280.1	3297.8	3321.5	3337.7	3321.5	3297.8	3280.1	3256.0	3280.1	3297.8
24°	3157.4	3166.7	3191.4	3216.9	3238.3	3216.9	3191.4	3166.7	3157.4	3166.7	3191.4
24.5°	3055.7	3066.8	3091.0	3116.6	3142.1	3116.6	3091.0	3066.8	3055.7	3066.8	3091.0
25°	2964.1	2975.8	2998.5	3020.4	3044.5	3020.4	2998.5	2975.8	2964.1	2975.8	2998.5
25.5°	2885.6	2890.7	2909.3	2927.9	2948.8	2927.9	2909.3	2890.7	2885.6	2890.7	2909.3
26°	2808.0	2812.7	2824.7	2842.4	2854.9	2842.4	2824.7	2812.7	2808.0	2812.7	2824.7
26.5°	2727.6	2734.6	2749.0	2764.3	2772.2	2764.3	2749.0	2734.6	2727.6	2734.6	2749.0
27°	2650.0	2658.4	2677.0	2693.7	2701.6	2693.7	2677.0	2658.4	2650.0	2658.4	2677.0
27.5°	2578.9	2586.8	2605.0	2622.6	2633.8	2622.6	2605.0	2586.8	2578.9	2586.8	2605.0
28°	2513.4	2519.9	2534.8	2551.0	2560.3	2551.0	2534.8	2519.9	2513.4	2519.9	2534.8
28.5°	2451.1	2456.7	2469.3	2482.7	2493.0	2482.7	2469.3	2456.7	2451.1	2456.7	2469.3
29°	2390.7	2395.4	2407.5	2420.5	2427.0	2420.5	2407.5	2395.4	2390.7	2395.4	2407.5
29.5°	2330.3	2335.4	2347.5	2359.6	2365.6	2359.6	2347.5	2335.4	2330.3	2335.4	2347.5
30°	2272.2	2276.9	2288.5	2300.1	2307.1	2300.1	2288.5	2276.9	2272.2	2276.9	2288.5
30.5°	2216.0	2219.7	2231.8	2243.4	2250.4	2243.4	2231.8	2219.7	2216.0	2219.7	2231.8
31°	2160.7	2166.8	2177.5	2189.5	2195.6	2189.5	2177.5	2166.8	2160.7	2166.8	2177.5
31.5°	2110.1	2113.8	2125.4	2136.6	2144.0	2136.6	2125.4	2113.8	2110.1	2113.8	2125.4
32°	2059.9	2064.5	2075.2	2085.9	2092.4	2085.9	2075.2	2064.5	2059.9	2064.5	2075.2
32.5°	2013.4	2018.1	2027.8	2035.3	2039.0	2035.3	2027.8	2018.1	2013.4	2018.1	2027.8
33°	1970.2	1972.5	1978.6	1982.3	1981.8	1982.3	1978.6	1972.5	1970.2	1972.5	1978.6
33.5°	1925.6	1925.1	1925.6	1925.6	1924.7	1925.6	1925.6	1925.1	1925.6	1925.1	1925.6
34°	1875.9	1872.6	1868.9	1874.0	1863.8	1874.0	1868.9	1872.6	1875.9	1872.6	1868.9
34.5°	1818.7	1817.8	1816.9	1813.1	1803.9	1813.1	1816.9	1817.8	1818.7	1817.8	1816.9
35°	1759.2	1755.1	1755.1	1751.3	1744.4	1751.3	1755.1	1755.1	1759.2	1755.1	1755.1
35.5°	1697.9	1692.8	1692.8	1686.3	1682.1	1686.3	1692.8	1692.8	1697.9	1692.8	1692.8
36°	1630.5	1627.7	1629.1	1618.5	1617.5	1618.5	1629.1	1627.7	1630.5	1627.7	1629.1
36.5°	1560.8	1560.4	1560.4	1550.1	1548.3	1550.1	1560.4	1560.4	1560.8	1560.4	1560.4
37°	1488.8	1488.8	1489.3	1481.4	1478.1	1481.4	1489.3	1488.8	1488.8	1488.8	1489.3
37.5°	1416.8	1415.4	1421.4	1411.7	1409.3	1411.7	1421.4	1415.4	1416.8	1415.4	1421.4
38°	1343.4	1340.1	1342.0	1339.2	1339.6	1339.2	1342.0	1340.1	1343.4	1340.1	1342.0
38.5°	1266.7	1263.9	1263.0	1267.2	1268.6	1267.2	1263.0	1263.9	1266.7	1263.9	1263.0
39°	1189.1	1187.7	1185.4	1194.7	1195.1	1194.7	1185.4	1187.7	1189.1	1187.7	1185.4
39.5°	1110.1	1110.1	1110.1	1121.7	1124.5	1121.7	1110.1	1110.1	1110.1	1110.1	1110.1
40°	1032.0	1034.4	1039.0	1049.2	1053.9	1049.2	1039.0	1034.4	1032.0	1034.4	1039.0
40.5°	955.4	958.2	968.4	976.3	984.6	976.3	968.4	958.2	955.4	958.2	968.4
41°	879.6	883.8	897.3	905.6	914.5	905.6	897.3	883.8	879.6	883.8	897.3
41.5°	803.9	810.9	826.7	835.9	846.2	835.9	826.7	810.9	803.9	810.9	826.7
42°	731.4	739.3	757.9	768.6	778.3	768.6	757.9	739.3	731.4	739.3	757.9
42.5°	661.2	670.1	691.0	704.9	713.7	704.9	691.0	670.1	661.2	670.1	691.0
43°	592.9	605.5	626.8	642.6	650.1	642.6	626.8	605.5	592.9	605.5	626.8
43.5°	528.8	543.7	564.6	581.8	588.3	581.8	564.6	543.7	528.8	543.7	564.6



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CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	362.9	370.8	389.9	412.6	421.0	412.6	389.9	370.8	362.9	370.8	389.9
45.5°	312.7	320.6	339.7	362.4	371.7	362.4	339.7	320.6	312.7	320.6	339.7
46°	264.4	274.2	293.7	316.9	331.8	316.9	293.7	274.2	264.4	274.2	293.7
46.5°	223.5	230.9	253.2	275.1	291.8	275.1	253.2	230.9	223.5	230.9	253.2
47°	187.3	195.6	215.1	235.1	251.9	235.1	215.1	195.6	187.3	195.6	215.1
47.5°	155.2	162.2	178.9	196.1	211.9	196.1	178.9	162.2	155.2	162.2	178.9
48°	128.7	132.9	146.8	160.8	171.9	160.8	146.8	132.9	128.7	132.9	146.8
48.5°	104.1	109.2	118.5	131.0	140.8	131.0	118.5	109.2	104.1	109.2	118.5
49°	81.3	86.9	96.7	104.6	112.9	104.6	96.7	86.9	81.3	86.9	96.7
49.5°	63.7	67.8	76.2	83.6	89.7	83.6	76.2	67.8	63.7	67.8	76.2
50°	49.3	52.0	58.1	64.6	69.2	64.6	58.1	52.0	49.3	52.0	58.1
50.5°	36.7	37.2	44.1	50.6	53.9	50.6	44.1	37.2	36.7	37.2	44.1
51°	25.6	27.4	33.0	40.0	45.5	40.0	33.0	27.4	25.6	27.4	33.0
51.5°	16.7	20.4	25.6	30.2	37.6	30.2	25.6	20.4	16.7	20.4	25.6
52°	14.4	15.3	19.1	23.2	29.3	23.2	19.1	15.3	14.4	15.3	19.1
52.5°	13.0	13.5	13.9	17.7	21.4	17.7	13.9	13.5	13.0	13.5	13.9
53°	12.1	12.5	12.5	13.5	13.5	13.5	12.5	12.5	12.1	12.5	12.5
53.5°	11.2	11.6	12.1	12.1	11.6	12.1	12.1	11.6	11.2	11.6	12.1
54°	10.7	10.7	11.2	11.2	10.7	11.2	11.2	10.7	10.7	10.7	11.2
54.5°	9.8	10.2	10.2	10.2	10.2	10.2	10.2	10.2	9.8	10.2	10.2
55°	9.3	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.3	9.8	9.8
55.5°	8.8	8.8	9.3	9.3	9.3	9.3	9.3	8.8	8.8	8.8	9.3
56°	8.4	8.4	8.8	8.8	8.8	8.8	8.8	8.4	8.4	8.4	8.8
56.5°	7.9	7.9	8.4	8.4	7.9	8.4	8.4	7.9	7.9	7.9	8.4
57°	7.4	7.4	7.9	7.9	7.4	7.9	7.9	7.4	7.4	7.4	7.9
57.5°	7.0	7.0	7.4	7.4	7.4	7.4	7.4	7.0	7.0	7.0	7.4
58°	6.5	6.5	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	7.0
58.5°	6.0	6.0	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.5
59°	5.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.6	6.0	6.0
59.5°	5.1	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.1	5.6	5.6
60°	5.1	5.1	5.6	5.6	5.1	5.6	5.6	5.1	5.1	5.1	5.6
60.5°	4.6	4.6	5.1	5.1	5.1	5.1	5.1	4.6	4.6	4.6	5.1
61°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
61.5°	4.2	4.2	4.6	4.6	4.6	4.6	4.6	4.2	4.2	4.2	4.6
62°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
62.5°	3.7	3.7	4.2	4.2	4.2	4.2	4.2	3.7	3.7	3.7	4.2
63°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
63.5°	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.7
64°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
64.5°	2.8	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.8	3.3	3.3
65°	2.8	2.8	3.3	3.3	2.8	3.3	3.3	2.8	2.8	2.8	3.3
65.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
66°	2.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.3	2.8	2.8





TEST NUMBER: P776776

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
68°	1.9	1.9	2.3	2.3	2.3	2.3	2.3	1.9	1.9	1.9	2.3
68.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
69°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
69.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
70°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.9
70.5°	1.4	1.4	1.4	1.9	1.4	1.9	1.4	1.4	1.4	1.4	1.4
71°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
71.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
72°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
72.5°	0.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9	1.4	1.4
73°	0.9	0.9	1.4	1.4	1.4	1.4	1.4	0.9	0.9	0.9	1.4
73.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
74°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
74.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
75°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
75.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
76°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
76.5°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.9
77°	0.5	0.5	0.5	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
81°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
81.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.5
82.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
83°	0.0	0.0	0.0	0.5	0.5	0.5	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: P776776

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776776

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	8595.0	8595.0	8595.0	8595.0	8595.0	8595.0
0.5°	8595.5	8587.1	8595.5	8593.6	8589.0	8587.1
1°	8585.7	8577.4	8585.7	8582.5	8577.8	8575.5
1.5°	8568.5	8560.2	8568.5	8564.8	8558.8	8556.0
2°	8544.9	8537.0	8544.9	8540.2	8532.3	8530.0
2.5°	8513.7	8506.3	8513.7	8508.1	8498.8	8494.2
3°	8476.5	8469.6	8476.5	8469.6	8458.4	8453.8
3.5°	8432.4	8427.3	8432.4	8423.6	8411.0	8405.4
4°	8381.8	8377.1	8381.8	8371.1	8356.2	8349.2
4.5°	8324.6	8319.9	8324.6	8311.6	8293.9	8287.4
5°	8260.9	8256.8	8260.9	8245.6	8226.1	8219.1
5.5°	8189.4	8187.5	8189.4	8171.7	8151.3	8143.8
6°	8112.2	8112.7	8112.2	8091.8	8069.5	8061.6
6.5°	8029.5	8030.9	8029.5	8006.8	7982.1	7975.6
7°	7940.3	7945.4	7940.3	7914.8	7889.2	7881.8
7.5°	7842.7	7850.2	7842.7	7815.8	7789.3	7783.3
8°	7741.4	7750.7	7741.4	7712.2	7684.3	7677.3
8.5°	7634.6	7645.2	7634.6	7601.6	7573.7	7567.6
9°	7522.6	7534.7	7522.6	7487.3	7458.0	7450.1
9.5°	7403.6	7417.6	7403.6	7366.4	7338.6	7330.2
10°	7283.3	7294.9	7283.3	7242.8	7214.0	7204.7
10.5°	7156.9	7168.0	7156.9	7114.1	7084.4	7075.1
11°	7026.3	7036.1	7026.3	6981.7	6951.5	6936.6
11.5°	6888.8	6900.4	6888.8	6845.5	6815.3	6803.3
12°	6750.8	6761.4	6750.8	6707.1	6675.9	6661.5
12.5°	6607.2	6616.5	6607.2	6565.8	6534.2	6519.3
13°	6465.4	6472.9	6465.4	6424.1	6390.2	6373.4
13.5°	6315.8	6326.5	6315.8	6279.6	6244.3	6227.5
14°	6164.8	6176.4	6164.8	6131.8	6096.0	6077.9
14.5°	6012.9	6022.6	6012.9	5981.7	5945.5	5926.9
15°	5861.8	5868.8	5861.8	5830.2	5794.5	5775.4
15.5°	5708.0	5718.7	5708.0	5677.8	5642.0	5623.5
16°	5554.7	5567.2	5554.7	5524.5	5488.7	5472.4
16.5°	5402.3	5415.8	5402.3	5373.0	5337.2	5323.3
17°	5252.2	5262.4	5252.2	5217.8	5185.3	5169.9
17.5°	5099.8	5111.9	5099.8	5064.9	5032.4	5017.1
18°	4947.4	4959.4	4947.4	4913.4	4878.6	4867.0
18.5°	4792.6	4805.6	4792.6	4759.6	4728.5	4716.9
19°	4636.0	4650.9	4636.0	4608.2	4577.5	4566.3
19.5°	4476.6	4488.3	4476.6	4453.0	4427.9	4415.8
20°	4315.4	4315.9	4315.4	4292.6	4272.7	4262.4
20.5°	4156.5	4153.7	4156.5	4135.1	4113.7	4107.2
21°	4000.8	4000.4	4000.8	3979.9	3959.5	3948.8



TEST NUMBER: P776776

CATALOG NUMBER: HCDJBLS4050CSD-HCD82TRH-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3573.8	3588.7	3573.8	3539.9	3521.3	3508.3
23°	3442.3	3459.0	3442.3	3413.5	3391.2	3381.4
23.5°	3321.5	3337.7	3321.5	3297.8	3280.1	3256.0
24°	3216.9	3238.3	3216.9	3191.4	3166.7	3157.4
24.5°	3116.6	3142.1	3116.6	3091.0	3066.8	3055.7
25°	3020.4	3044.5	3020.4	2998.5	2975.8	2964.1
25.5°	2927.9	2948.8	2927.9	2909.3	2890.7	2885.6
26°	2842.4	2854.9	2842.4	2824.7	2812.7	2808.0
26.5°	2764.3	2772.2	2764.3	2749.0	2734.6	2727.6
27°	2693.7	2701.6	2693.7	2677.0	2658.4	2650.0
27.5°	2622.6	2633.8	2622.6	2605.0	2586.8	2578.9
28°	2551.0	2560.3	2551.0	2534.8	2519.9	2513.4
28.5°	2482.7	2493.0	2482.7	2469.3	2456.7	2451.1
29°	2420.5	2427.0	2420.5	2407.5	2395.4	2390.7
29.5°	2359.6	2365.6	2359.6	2347.5	2335.4	2330.3
30°	2300.1	2307.1	2300.1	2288.5	2276.9	2272.2
30.5°	2243.4	2250.4	2243.4	2231.8	2219.7	2216.0
31°	2189.5	2195.6	2189.5	2177.5	2166.8	2160.7
31.5°	2136.6	2144.0	2136.6	2125.4	2113.8	2110.1
32°	2085.9	2092.4	2085.9	2075.2	2064.5	2059.9
32.5°	2035.3	2039.0	2035.3	2027.8	2018.1	2013.4
33°	1982.3	1981.8	1982.3	1978.6	1972.5	1970.2
33.5°	1925.6	1924.7	1925.6	1925.6	1925.1	1925.6
34°	1874.0	1863.8	1874.0	1868.9	1872.6	1875.9
34.5°	1813.1	1803.9	1813.1	1816.9	1817.8	1818.7
35°	1751.3	1744.4	1751.3	1755.1	1755.1	1759.2
35.5°	1686.3	1682.1	1686.3	1692.8	1692.8	1697.9
36°	1618.5	1617.5	1618.5	1629.1	1627.7	1630.5
36.5°	1550.1	1548.3	1550.1	1560.4	1560.4	1560.8
37°	1481.4	1478.1	1481.4	1489.3	1488.8	1488.8
37.5°	1411.7	1409.3	1411.7	1421.4	1415.4	1416.8
38°	1339.2	1339.6	1339.2	1342.0	1340.1	1343.4
38.5°	1267.2	1268.6	1267.2	1263.0	1263.9	1266.7
39°	1194.7	1195.1	1194.7	1185.4	1187.7	1189.1
39.5°	1121.7	1124.5	1121.7	1110.1	1110.1	1110.1
40°	1049.2	1053.9	1049.2	1039.0	1034.4	1032.0
40.5°	976.3	984.6	976.3	968.4	958.2	955.4
41°	905.6	914.5	905.6	897.3	883.8	879.6
41.5°	835.9	846.2	835.9	826.7	810.9	803.9
42°	768.6	778.3	768.6	757.9	739.3	731.4
42.5°	704.9	713.7	704.9	691.0	670.1	661.2
43°	642.6	650.1	642.6	626.8	605.5	592.9
43.5°	581.8	588.3	581.8	564.6	543.7	528.8



TEST NUMBER: P776776

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	412.6	421.0	412.6	389.9	370.8	362.9
45.5°	362.4	371.7	362.4	339.7	320.6	312.7
46°	316.9	331.8	316.9	293.7	274.2	264.4
46.5°	275.1	291.8	275.1	253.2	230.9	223.5
47°	235.1	251.9	235.1	215.1	195.6	187.3
47.5°	196.1	211.9	196.1	178.9	162.2	155.2
48°	160.8	171.9	160.8	146.8	132.9	128.7
48.5°	131.0	140.8	131.0	118.5	109.2	104.1
49°	104.6	112.9	104.6	96.7	86.9	81.3
49.5°	83.6	89.7	83.6	76.2	67.8	63.7
50°	64.6	69.2	64.6	58.1	52.0	49.3
50.5°	50.6	53.9	50.6	44.1	37.2	36.7
51°	40.0	45.5	40.0	33.0	27.4	25.6
51.5°	30.2	37.6	30.2	25.6	20.4	16.7
52°	23.2	29.3	23.2	19.1	15.3	14.4
52.5°	17.7	21.4	17.7	13.9	13.5	13.0
53°	13.5	13.5	13.5	12.5	12.5	12.1
53.5°	12.1	11.6	12.1	12.1	11.6	11.2
54°	11.2	10.7	11.2	11.2	10.7	10.7
54.5°	10.2	10.2	10.2	10.2	10.2	9.8
55°	9.8	9.8	9.8	9.8	9.8	9.3
55.5°	9.3	9.3	9.3	9.3	8.8	8.8
56°	8.8	8.8	8.8	8.8	8.4	8.4
56.5°	8.4	7.9	8.4	8.4	7.9	7.9
57°	7.9	7.4	7.9	7.9	7.4	7.4
57.5°	7.4	7.4	7.4	7.4	7.0	7.0
58°	7.0	7.0	7.0	7.0	6.5	6.5
58.5°	6.5	6.5	6.5	6.5	6.0	6.0
59°	6.0	6.0	6.0	6.0	6.0	5.6
59.5°	5.6	5.6	5.6	5.6	5.6	5.1
60°	5.6	5.1	5.6	5.6	5.1	5.1
60.5°	5.1	5.1	5.1	5.1	4.6	4.6
61°	4.6	4.6	4.6	4.6	4.6	4.6
61.5°	4.6	4.6	4.6	4.6	4.2	4.2
62°	4.2	4.2	4.2	4.2	4.2	4.2
62.5°	4.2	4.2	4.2	4.2	3.7	3.7
63°	3.7	3.7	3.7	3.7	3.7	3.7
63.5°	3.7	3.7	3.7	3.7	3.3	3.3
64°	3.3	3.3	3.3	3.3	3.3	3.3
64.5°	3.3	3.3	3.3	3.3	3.3	2.8
65°	3.3	2.8	3.3	3.3	2.8	2.8
65.5°	2.8	2.8	2.8	2.8	2.8	2.8
66°	2.8	2.8	2.8	2.8	2.8	2.3



TEST NUMBER: P776776

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	2.3	2.3	2.3	2.3	2.3	2.3
68°	2.3	2.3	2.3	2.3	1.9	1.9
68.5°	1.9	1.9	1.9	1.9	1.9	1.9
69°	1.9	1.9	1.9	1.9	1.9	1.9
69.5°	1.9	1.9	1.9	1.9	1.9	1.9
70°	1.9	1.9	1.9	1.9	1.4	1.4
70.5°	1.9	1.4	1.9	1.4	1.4	1.4
71°	1.4	1.4	1.4	1.4	1.4	1.4
71.5°	1.4	1.4	1.4	1.4	1.4	1.4
72°	1.4	1.4	1.4	1.4	1.4	1.4
72.5°	1.4	1.4	1.4	1.4	1.4	0.9
73°	1.4	1.4	1.4	1.4	0.9	0.9
73.5°	0.9	0.9	0.9	0.9	0.9	0.9
74°	0.9	0.9	0.9	0.9	0.9	0.9
74.5°	0.9	0.9	0.9	0.9	0.9	0.9
75°	0.9	0.9	0.9	0.9	0.9	0.9
75.5°	0.9	0.9	0.9	0.9	0.9	0.9
76°	0.9	0.9	0.9	0.9	0.9	0.9
76.5°	0.9	0.9	0.9	0.9	0.5	0.5
77°	0.9	0.9	0.9	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.5
80.5°	0.5	0.5	0.5	0.5	0.5	0.5
81°	0.5	0.5	0.5	0.5	0.5	0.5
81.5°	0.5	0.5	0.5	0.5	0.5	0.5
82°	0.5	0.5	0.5	0.5	0.5	0.0
82.5°	0.5	0.5	0.5	0.5	0.0	0.0
83°	0.5	0.5	0.5	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: P776776

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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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°	3784.8	3807.5	3830.3	3851.7	3857.2	3851.7	3830.3	3807.5	3784.8	3807.5	3830.3
22°	3642.1	3657.0	3683.5	3705.3	3716.4	3705.3	3683.5	3657.0	3642.1	3657.0	3683.5



44°	470.7	483.7	504.6	522.3	529.3	522.3	504.6	483.7	470.7	483.7	504.6
44.5°	415.9	426.1	445.6	464.7	473.0	464.7	445.6	426.1	415.9	426.1	445.6



66.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
67°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3



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°	3851.7	3857.2	3851.7	3830.3	3807.5	3784.8
22°	3705.3	3716.4	3705.3	3683.5	3657.0	3642.1



44°	522.3	529.3	522.3	504.6	483.7	470.7
44.5°	464.7	473.0	464.7	445.6	426.1	415.9

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66.5°	2.3	2.3	2.3	2.3	2.3	2.3
67°	2.3	2.3	2.3	2.3	2.3	2.3

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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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Scaled Data Report



(END OF REPORT)