

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: P776460

Luminaire Tested: HCDJBL3040CSD-HCD82TRC-4000lm-2700K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776460  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B062-HCD82TRC)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD82TRC-4000lm-2700K  
Description: 8 INCH ROUND NARROW SPECULAR CLEAR TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

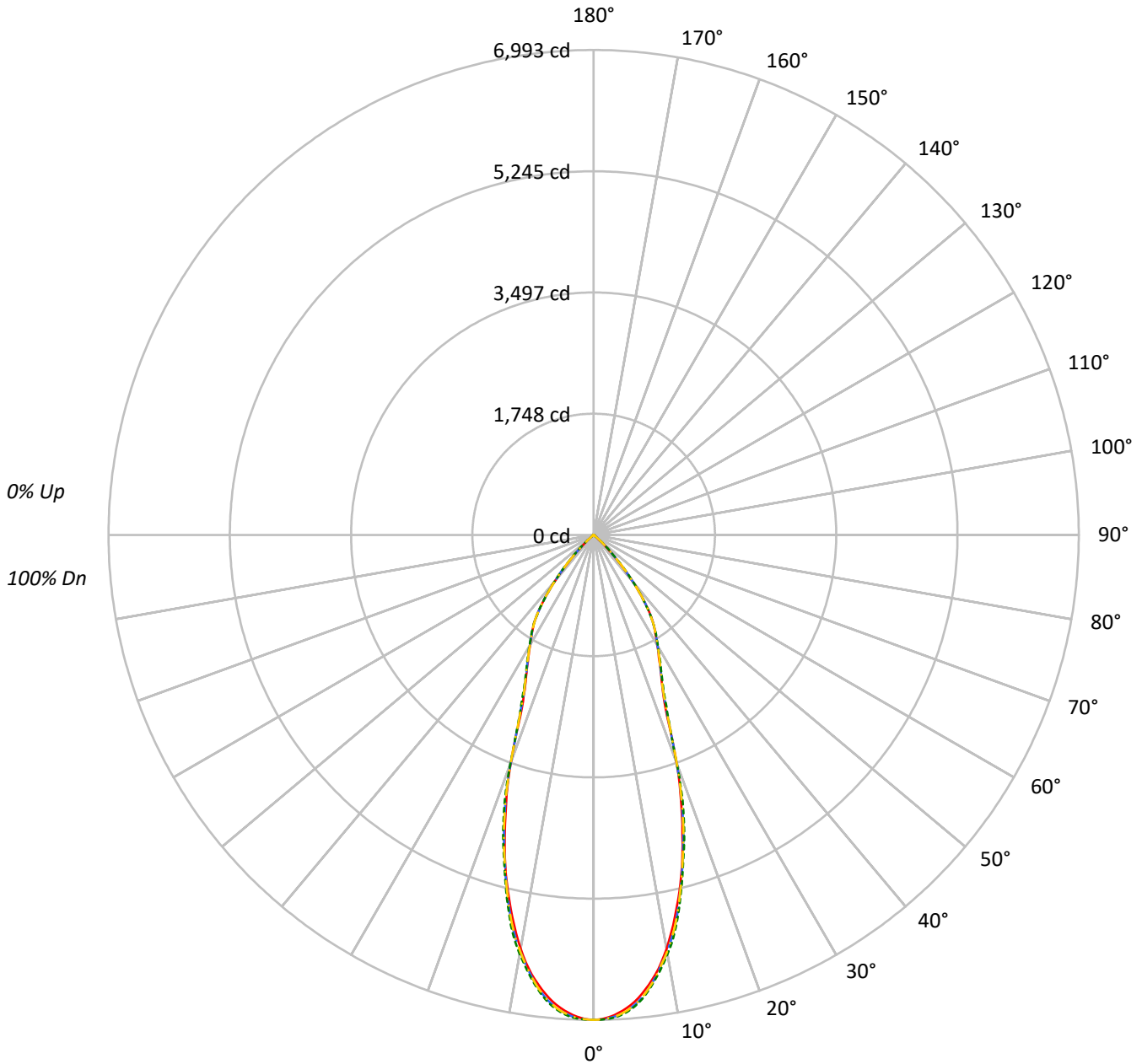
Lumens per Lamp: N/A  
Luminaire Lumens: 4269.8 lumens  
Efficiency: N/A  
Efficacy: 110.9 lumens/watt  
Spacing Criteria (0/90/45): 0.65 / 0.66 / 0.66  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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: HCDJBL3040CSD-HCD82TRC-4000lm-2700K

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94			
2	108	104	100	97	106	102	99	96	99	96	94	96	94	92	93	91	90	88			
3	103	97	92	89	101	96	91	88	93	90	87	91	88	85	89	86	84	82			
4	98	91	86	82	97	90	85	81	88	84	80	86	82	80	84	81	79	77			
5	94	86	80	76	92	85	80	76	83	79	75	81	78	74	80	77	74	72			
6	89	81	75	71	88	80	75	71	79	74	70	77	73	70	76	72	69	68			
7	85	76	71	67	84	76	70	67	75	70	66	73	69	66	72	68	65	64			
8	81	72	67	63	80	72	66	63	71	66	62	70	65	62	69	65	62	61			
9	78	69	63	59	77	68	63	59	67	62	59	66	62	59	66	62	59	57			
10	75	65	60	56	74	65	60	56	64	59	56	63	59	56	63	59	56	54			

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

	0°	90°	180°	270°
0°	213434	213434	213434	213434
5°	207060	209153	207060	209153
10°	187741	190264	187741	190264
15°	155669	157015	155669	157015
20°	113360	113834	113360	113834
25°	78099	79183	78099	79183
30°	64704	65381	64704	65381
35°	54009	53752	54009	53752
40°	34570	35044	34570	35044
45°	13993	15366	13993	15366
50°	2627	2916	2627	2916
55°	798	777	798	777
60°	513	513	513	513
65°	361	361	361	361
70°	241	277	241	277
75°	177	177	177	177
80°	141	141	141	141
85°	0	140	0	140

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 15366 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	626.5	14.7
10°-20°	1351.3	31.6
20°-30°	1108.4	26.0
30°-40°	872.5	20.4
40°-50°	287.0	6.7
50°-60°	16.8	0.4
60°-70°	5.2	0.1
70°-80°	1.8	0.0
80°-90°	0.3	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°	3086.3	72.3
0°-40°	3958.8	92.7
0°-60°	4262.5	99.8
0°-90°	4269.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4269.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	6991	6991	6991	6991	6991	
5°	6756	6825	6756	6825	6756	623
15°	4925	4968	4925	4968	4925	1340
25°	2318	2351	2318	2351	2318	1101
35°	1449	1442	1449	1442	1449	872
45°	324	356	324	356	324	276
55°	15	15	15	15	15	16
65°	5	5	5	5	5	5
75°	2	2	2	2	2	2
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°	6990.9	6990.9	6990.9	6990.9	6990.9	6990.9	6990.9	6990.9	6990.9	6990.9	6990.9
0.5°	6987.8	6988.6	6992.0	6985.1	6992.8	6985.1	6992.0	6988.6	6987.8	6988.6	6992.0
1°	6980.5	6982.0	6987.4	6980.9	6988.9	6980.9	6987.4	6982.0	6980.5	6982.0	6987.4
1.5°	6967.4	6970.9	6979.0	6974.0	6982.4	6974.0	6979.0	6970.9	6967.4	6970.9	6979.0
2°	6950.2	6954.8	6967.0	6963.6	6975.5	6963.6	6967.0	6954.8	6950.2	6954.8	6967.0
2.5°	6927.9	6935.2	6950.5	6949.8	6962.8	6949.8	6950.5	6935.2	6927.9	6935.2	6950.5
3°	6902.2	6911.8	6930.6	6931.0	6945.9	6931.0	6930.6	6911.8	6902.2	6911.8	6930.6
3.5°	6872.2	6884.9	6906.0	6907.1	6924.0	6907.1	6906.0	6884.9	6872.2	6884.9	6906.0
4°	6838.8	6855.7	6876.8	6878.4	6896.8	6878.4	6876.8	6855.7	6838.8	6855.7	6876.8
4.5°	6800.0	6821.1	6841.9	6845.3	6863.8	6845.3	6841.9	6821.1	6800.0	6821.1	6841.9
5°	6756.3	6782.7	6801.9	6806.9	6824.6	6806.9	6801.9	6782.7	6756.3	6782.7	6801.9
5.5°	6707.5	6739.0	6754.3	6763.9	6779.3	6763.9	6754.3	6739.0	6707.5	6739.0	6754.3
6°	6654.1	6689.4	6701.7	6716.3	6725.9	6716.3	6701.7	6689.4	6654.1	6689.4	6701.7
6.5°	6595.8	6633.8	6641.8	6662.9	6666.4	6662.9	6641.8	6633.8	6595.8	6633.8	6641.8
7°	6534.3	6571.6	6576.9	6605.7	6600.4	6605.7	6576.9	6571.6	6534.3	6571.6	6576.9
7.5°	6469.0	6503.2	6505.5	6543.2	6531.2	6543.2	6505.5	6503.2	6469.0	6503.2	6505.5
8°	6399.2	6429.5	6431.0	6475.2	6456.8	6475.2	6431.0	6429.5	6399.2	6429.5	6431.0
8.5°	6322.8	6347.7	6351.6	6400.7	6380.7	6400.7	6351.6	6347.7	6322.8	6347.7	6351.6
9°	6241.4	6260.6	6269.4	6319.3	6300.1	6319.3	6269.4	6260.6	6241.4	6260.6	6269.4
9.5°	6151.5	6165.3	6185.7	6231.0	6220.6	6231.0	6185.7	6165.3	6151.5	6165.3	6185.7
10°	6055.9	6066.3	6098.1	6134.2	6137.3	6134.2	6098.1	6066.3	6055.9	6066.3	6098.1
10.5°	5954.5	5961.1	6007.9	6031.7	6051.7	6031.7	6007.9	5961.1	5954.5	5961.1	6007.9
11°	5851.2	5853.9	5914.2	5924.6	5958.0	5924.6	5914.2	5853.9	5851.2	5853.9	5914.2
11.5°	5743.4	5745.3	5813.2	5814.0	5855.1	5814.0	5813.2	5745.3	5743.4	5745.3	5813.2
12°	5634.7	5636.2	5702.3	5704.2	5744.5	5704.2	5702.3	5636.2	5634.7	5636.2	5702.3
12.5°	5520.3	5529.5	5582.1	5592.5	5621.3	5592.5	5582.1	5529.5	5520.3	5529.5	5582.1
13°	5407.8	5421.2	5458.1	5478.8	5497.6	5478.8	5458.1	5421.2	5407.8	5421.2	5458.1
13.5°	5291.0	5309.5	5328.7	5358.2	5365.1	5358.2	5328.7	5309.5	5291.0	5309.5	5328.7
14°	5173.5	5192.0	5199.7	5232.3	5231.9	5232.3	5199.7	5192.0	5173.5	5192.0	5199.7
14.5°	5051.4	5066.0	5071.8	5104.8	5100.2	5104.8	5071.8	5066.0	5051.4	5066.0	5071.8
15°	4925.1	4934.3	4943.6	4973.5	4967.7	4973.5	4943.6	4934.3	4925.1	4934.3	4943.6
15.5°	4790.0	4795.3	4815.7	4842.6	4843.7	4842.6	4815.7	4795.3	4790.0	4795.3	4815.7
16°	4652.5	4656.0	4686.7	4710.5	4716.2	4710.5	4686.7	4656.0	4652.5	4656.0	4686.7
16.5°	4507.8	4518.1	4554.6	4579.6	4593.4	4579.6	4554.6	4518.1	4507.8	4518.1	4554.6
17°	4367.6	4379.9	4420.2	4449.8	4467.4	4449.8	4420.2	4379.9	4367.6	4379.9	4420.2
17.5°	4225.9	4242.8	4279.3	4315.4	4332.7	4315.4	4279.3	4242.8	4225.9	4242.8	4279.3
18°	4089.6	4101.9	4135.3	4174.5	4189.4	4174.5	4135.3	4101.9	4089.6	4101.9	4135.3
18.5°	3947.5	3959.1	3984.8	4024.0	4035.5	4024.0	3984.8	3959.1	3947.5	3959.1	3984.8
19°	3802.0	3809.7	3829.7	3858.9	3870.8	3858.9	3829.7	3809.7	3802.0	3809.7	3829.7
19.5°	3650.0	3650.7	3665.7	3688.0	3699.1	3688.0	3665.7	3650.7	3650.0	3650.7	3665.7
20°	3489.1	3489.1	3497.2	3509.4	3503.7	3509.4	3497.2	3489.1	3489.1	3489.1	3497.2
20.5°	3330.9	3325.1	3328.6	3328.2	3311.3	3328.2	3328.6	3325.1	3330.9	3325.1	3328.6
21°	3168.1	3164.3	3150.1	3164.3	3158.9	3164.3	3150.1	3164.3	3168.1	3164.3	3150.1



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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°	2712.7	2730.8	2755.3	2784.9	2771.8	2784.9	2755.3	2730.8	2712.7	2730.8	2755.3
23°	2606.4	2618.6	2644.0	2684.3	2684.7	2684.3	2644.0	2618.6	2606.4	2618.6	2644.0
23.5°	2528.0	2526.1	2542.2	2581.0	2586.0	2581.0	2542.2	2526.1	2528.0	2526.1	2542.2
24°	2443.9	2452.4	2462.4	2493.9	2496.2	2493.9	2462.4	2452.4	2443.9	2452.4	2462.4
24.5°	2379.4	2383.7	2392.5	2412.5	2412.5	2412.5	2392.5	2383.7	2379.4	2383.7	2392.5
25°	2318.4	2323.8	2333.0	2351.4	2350.6	2351.4	2333.0	2323.8	2318.4	2323.8	2333.0
25.5°	2261.6	2264.2	2273.8	2291.1	2292.3	2291.1	2273.8	2264.2	2261.6	2264.2	2273.8
26°	2206.6	2209.0	2215.9	2228.9	2230.8	2228.9	2215.9	2209.0	2206.6	2209.0	2215.9
26.5°	2154.8	2155.6	2163.6	2175.5	2176.7	2175.5	2163.6	2155.6	2154.8	2155.6	2163.6
27°	2102.2	2104.5	2113.0	2127.9	2131.8	2127.9	2113.0	2104.5	2102.2	2104.5	2113.0
27.5°	2052.7	2055.7	2063.8	2078.4	2083.8	2078.4	2063.8	2055.7	2052.7	2055.7	2063.8
28°	2005.8	2008.9	2016.6	2027.3	2032.3	2027.3	2016.6	2008.9	2005.8	2008.9	2016.6
28.5°	1962.4	1964.0	1971.3	1979.7	1983.9	1979.7	1971.3	1964.0	1962.4	1964.0	1971.3
29°	1919.4	1920.6	1927.5	1934.8	1939.4	1934.8	1927.5	1920.6	1919.4	1920.6	1927.5
29.5°	1876.8	1879.1	1884.9	1892.9	1896.8	1892.9	1884.9	1879.1	1876.8	1879.1	1884.9
30°	1835.4	1837.7	1843.0	1850.7	1854.6	1850.7	1843.0	1837.7	1835.4	1837.7	1843.0
30.5°	1795.0	1797.0	1802.3	1809.6	1812.3	1809.6	1802.3	1797.0	1795.0	1797.0	1802.3
31°	1755.5	1757.4	1762.4	1770.1	1773.9	1770.1	1762.4	1757.4	1755.5	1757.4	1762.4
31.5°	1717.5	1719.4	1724.8	1731.7	1734.4	1731.7	1724.8	1719.4	1717.5	1719.4	1724.8
32°	1681.0	1682.5	1687.5	1694.4	1697.1	1694.4	1687.5	1682.5	1681.0	1682.5	1687.5
32.5°	1646.1	1647.6	1651.1	1657.6	1659.9	1657.6	1651.1	1647.6	1646.1	1647.6	1651.1
33°	1612.3	1613.0	1615.0	1618.0	1620.3	1618.0	1615.0	1613.0	1612.3	1613.0	1615.0
33.5°	1577.3	1577.3	1576.6	1575.0	1578.5	1575.0	1576.6	1577.3	1577.3	1577.3	1576.6
34°	1537.8	1536.2	1535.5	1530.5	1538.2	1530.5	1535.5	1536.2	1537.8	1536.2	1535.5
34.5°	1495.2	1491.7	1491.3	1484.8	1490.6	1484.8	1491.3	1491.7	1495.2	1491.7	1491.3
35°	1449.1	1444.5	1444.5	1438.3	1442.2	1438.3	1444.5	1444.5	1449.1	1444.5	1444.5
35.5°	1398.8	1396.9	1394.6	1389.2	1391.5	1389.2	1394.6	1396.9	1398.8	1396.9	1394.6
36°	1346.6	1345.8	1341.6	1338.5	1338.9	1338.5	1341.6	1345.8	1346.6	1345.8	1341.6
36.5°	1291.3	1292.8	1286.7	1284.7	1282.4	1284.7	1286.7	1292.8	1291.3	1292.8	1286.7
37°	1231.8	1236.4	1231.0	1229.8	1226.8	1229.8	1231.0	1236.4	1231.8	1236.4	1231.0
37.5°	1172.6	1176.1	1174.5	1172.6	1171.5	1172.6	1174.5	1176.1	1172.6	1176.1	1174.5
38°	1113.5	1116.2	1114.3	1115.8	1114.7	1115.8	1114.3	1116.2	1113.5	1116.2	1114.3
38.5°	1054.4	1052.8	1053.6	1054.0	1057.1	1054.0	1053.6	1052.8	1054.4	1052.8	1053.6
39°	994.1	990.6	992.6	992.6	998.7	992.6	992.6	990.6	994.1	990.6	992.6
39.5°	930.7	928.8	931.5	933.8	938.4	933.8	931.5	928.8	930.7	928.8	931.5
40°	867.4	868.9	872.4	875.8	879.3	875.8	872.4	868.9	867.4	868.9	872.4
40.5°	804.4	808.2	811.7	820.1	819.8	820.1	811.7	808.2	804.4	808.2	811.7
41°	743.4	747.6	752.6	762.6	761.0	762.6	752.6	747.6	743.4	747.6	752.6
41.5°	681.9	687.3	693.8	705.7	703.0	705.7	693.8	687.3	681.9	687.3	693.8
42°	623.6	628.9	637.8	649.7	647.7	649.7	637.8	628.9	623.6	628.9	637.8
42.5°	567.1	572.1	583.6	595.9	594.8	595.9	583.6	572.1	567.1	572.1	583.6
43°	512.6	519.1	531.0	544.8	543.7	544.8	531.0	519.1	512.6	519.1	531.0
43.5°	463.8	467.3	479.2	492.6	493.8	492.6	479.2	467.3	463.8	467.3	479.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	324.1	325.6	338.7	350.9	355.9	350.9	338.7	325.6	324.1	325.6	338.7
45.5°	279.5	283.0	297.6	308.3	314.9	308.3	297.6	283.0	279.5	283.0	297.6
46°	240.4	243.0	258.8	271.1	278.0	271.1	258.8	243.0	240.4	243.0	258.8
46.5°	205.0	209.6	221.9	237.3	245.4	237.3	221.9	209.6	205.0	209.6	221.9
47°	172.8	178.2	187.8	205.0	212.7	205.0	187.8	178.2	172.8	178.2	187.8
47.5°	145.1	150.5	159.3	174.3	180.1	174.3	159.3	150.5	145.1	150.5	159.3
48°	120.2	126.7	132.9	146.3	147.4	146.3	132.9	126.7	120.2	126.7	132.9
48.5°	99.1	104.8	109.8	121.3	119.4	121.3	109.8	104.8	99.1	104.8	109.8
49°	82.2	85.6	89.1	99.8	96.8	99.8	89.1	85.6	82.2	85.6	89.1
49.5°	68.7	69.9	73.7	80.2	76.8	80.2	73.7	69.9	68.7	69.9	73.7
50°	55.3	54.9	59.1	65.3	61.4	65.3	59.1	54.9	55.3	54.9	59.1
50.5°	41.9	43.4	45.7	51.8	48.4	51.8	45.7	43.4	41.9	43.4	45.7
51°	32.3	33.0	37.2	41.5	38.4	41.5	37.2	33.0	32.3	33.0	37.2
51.5°	24.2	27.3	29.6	34.6	34.2	34.6	29.6	27.3	24.2	27.3	29.6
52°	21.1	22.7	25.0	27.3	29.9	27.3	25.0	22.7	21.1	22.7	25.0
52.5°	19.2	19.6	21.5	23.0	25.3	23.0	21.5	19.6	19.2	19.6	21.5
53°	18.0	18.4	18.4	20.0	21.1	20.0	18.4	18.4	18.0	18.4	18.4
53.5°	17.3	17.3	17.7	17.3	16.9	17.3	17.7	17.3	17.3	17.3	17.7
54°	16.5	16.5	16.5	16.5	16.1	16.5	16.5	16.5	16.5	16.5	16.5
54.5°	15.7	15.7	15.7	15.7	15.4	15.7	15.7	15.7	15.7	15.7	15.7
55°	15.0	15.0	15.0	15.0	14.6	15.0	15.0	15.0	15.0	15.0	15.0
55.5°	14.2	14.2	14.2	14.2	13.8	14.2	14.2	14.2	14.2	14.2	14.2
56°	13.4	13.4	13.4	13.4	13.1	13.4	13.4	13.4	13.4	13.4	13.4
56.5°	12.7	12.7	13.1	12.7	12.3	12.7	13.1	12.7	12.7	12.7	13.1
57°	11.9	11.9	12.3	11.9	11.9	11.9	12.3	11.9	11.9	11.9	12.3
57.5°	11.1	11.5	11.5	11.1	11.1	11.1	11.5	11.5	11.1	11.5	11.5
58°	10.8	10.8	10.8	10.8	10.4	10.8	10.8	10.8	10.8	10.8	10.8
58.5°	10.0	10.4	10.4	10.0	10.0	10.0	10.4	10.4	10.0	10.4	10.4
59°	9.6	9.6	9.6	9.6	9.2	9.6	9.6	9.6	9.6	9.6	9.6
59.5°	8.8	9.2	9.2	9.2	8.8	9.2	9.2	9.2	8.8	9.2	9.2
60°	8.4	8.4	8.8	8.4	8.4	8.4	8.8	8.4	8.4	8.4	8.8
60.5°	8.1	8.1	8.4	8.1	8.1	8.1	8.4	8.1	8.1	8.1	8.4
61°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
61.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
62°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
62.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
63°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
63.5°	5.8	5.8	6.1	5.8	5.8	5.8	6.1	5.8	5.8	5.8	6.1
64°	5.4	5.4	5.8	5.8	5.4	5.8	5.8	5.4	5.4	5.4	5.8
64.5°	5.0	5.4	5.4	5.4	5.0	5.4	5.4	5.4	5.0	5.4	5.4
65°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
65.5°	4.6	4.6	5.0	4.6	4.6	4.6	5.0	4.6	4.6	4.6	5.0
66°	4.2	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.6	4.6





TEST NUMBER: P776460

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
68°	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.5	3.5	3.8
68.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
69°	3.1	3.1	3.5	3.5	3.1	3.5	3.5	3.1	3.1	3.1	3.5
69.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
70°	2.7	2.7	3.1	3.1	3.1	3.1	3.1	2.7	2.7	2.7	3.1
70.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
71°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
71.5°	2.3	2.3	2.7	2.7	2.3	2.7	2.7	2.3	2.3	2.3	2.7
72°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
72.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
73°	1.9	1.9	1.9	2.3	1.9	2.3	1.9	1.9	1.9	1.9	1.9
73.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
74°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
74.5°	1.5	1.5	1.9	1.9	1.5	1.9	1.9	1.5	1.5	1.5	1.9
75°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
75.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
76°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
76.5°	1.2	1.2	1.2	1.5	1.5	1.5	1.2	1.2	1.2	1.2	1.2
77°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
78°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
78.5°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2
79°	0.8	0.8	0.8	1.2	0.8	1.2	0.8	0.8	0.8	0.8	0.8
79.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
81°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
81.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
82°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
85.5°	0.0	0.0	0.0	0.4	0.4	0.4	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: P776460  
CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-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: P776460

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	6990.9	6990.9	6990.9	6990.9	6990.9	6990.9
0.5°	6985.1	6992.8	6985.1	6992.0	6988.6	6987.8
1°	6980.9	6988.9	6980.9	6987.4	6982.0	6980.5
1.5°	6974.0	6982.4	6974.0	6979.0	6970.9	6967.4
2°	6963.6	6975.5	6963.6	6967.0	6954.8	6950.2
2.5°	6949.8	6962.8	6949.8	6950.5	6935.2	6927.9
3°	6931.0	6945.9	6931.0	6930.6	6911.8	6902.2
3.5°	6907.1	6924.0	6907.1	6906.0	6884.9	6872.2
4°	6878.4	6896.8	6878.4	6876.8	6855.7	6838.8
4.5°	6845.3	6863.8	6845.3	6841.9	6821.1	6800.0
5°	6806.9	6824.6	6806.9	6801.9	6782.7	6756.3
5.5°	6763.9	6779.3	6763.9	6754.3	6739.0	6707.5
6°	6716.3	6725.9	6716.3	6701.7	6689.4	6654.1
6.5°	6662.9	6666.4	6662.9	6641.8	6633.8	6595.8
7°	6605.7	6600.4	6605.7	6576.9	6571.6	6534.3
7.5°	6543.2	6531.2	6543.2	6505.5	6503.2	6469.0
8°	6475.2	6456.8	6475.2	6431.0	6429.5	6399.2
8.5°	6400.7	6380.7	6400.7	6351.6	6347.7	6322.8
9°	6319.3	6300.1	6319.3	6269.4	6260.6	6241.4
9.5°	6231.0	6220.6	6231.0	6185.7	6165.3	6151.5
10°	6134.2	6137.3	6134.2	6098.1	6066.3	6055.9
10.5°	6031.7	6051.7	6031.7	6007.9	5961.1	5954.5
11°	5924.6	5958.0	5924.6	5914.2	5853.9	5851.2
11.5°	5814.0	5855.1	5814.0	5813.2	5745.3	5743.4
12°	5704.2	5744.5	5704.2	5702.3	5636.2	5634.7
12.5°	5592.5	5621.3	5592.5	5582.1	5529.5	5520.3
13°	5478.8	5497.6	5478.8	5458.1	5421.2	5407.8
13.5°	5358.2	5365.1	5358.2	5328.7	5309.5	5291.0
14°	5232.3	5231.9	5232.3	5199.7	5192.0	5173.5
14.5°	5104.8	5100.2	5104.8	5071.8	5066.0	5051.4
15°	4973.5	4967.7	4973.5	4943.6	4934.3	4925.1
15.5°	4842.6	4843.7	4842.6	4815.7	4795.3	4790.0
16°	4710.5	4716.2	4710.5	4686.7	4656.0	4652.5
16.5°	4579.6	4593.4	4579.6	4554.6	4518.1	4507.8
17°	4449.8	4467.4	4449.8	4420.2	4379.9	4367.6
17.5°	4315.4	4332.7	4315.4	4279.3	4242.8	4225.9
18°	4174.5	4189.4	4174.5	4135.3	4101.9	4089.6
18.5°	4024.0	4035.5	4024.0	3984.8	3959.1	3947.5
19°	3858.9	3870.8	3858.9	3829.7	3809.7	3802.0
19.5°	3688.0	3699.1	3688.0	3665.7	3650.7	3650.0
20°	3509.4	3503.7	3509.4	3497.2	3489.1	3489.1
20.5°	3328.2	3311.3	3328.2	3328.6	3325.1	3330.9
21°	3164.3	3158.9	3164.3	3150.1	3164.3	3168.1



TEST NUMBER: P776460

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2784.9	2771.8	2784.9	2755.3	2730.8	2712.7
23°	2684.3	2684.7	2684.3	2644.0	2618.6	2606.4
23.5°	2581.0	2586.0	2581.0	2542.2	2526.1	2528.0
24°	2493.9	2496.2	2493.9	2462.4	2452.4	2443.9
24.5°	2412.5	2412.5	2412.5	2392.5	2383.7	2379.4
25°	2351.4	2350.6	2351.4	2333.0	2323.8	2318.4
25.5°	2291.1	2292.3	2291.1	2273.8	2264.2	2261.6
26°	2228.9	2230.8	2228.9	2215.9	2209.0	2206.6
26.5°	2175.5	2176.7	2175.5	2163.6	2155.6	2154.8
27°	2127.9	2131.8	2127.9	2113.0	2104.5	2102.2
27.5°	2078.4	2083.8	2078.4	2063.8	2055.7	2052.7
28°	2027.3	2032.3	2027.3	2016.6	2008.9	2005.8
28.5°	1979.7	1983.9	1979.7	1971.3	1964.0	1962.4
29°	1934.8	1939.4	1934.8	1927.5	1920.6	1919.4
29.5°	1892.9	1896.8	1892.9	1884.9	1879.1	1876.8
30°	1850.7	1854.6	1850.7	1843.0	1837.7	1835.4
30.5°	1809.6	1812.3	1809.6	1802.3	1797.0	1795.0
31°	1770.1	1773.9	1770.1	1762.4	1757.4	1755.5
31.5°	1731.7	1734.4	1731.7	1724.8	1719.4	1717.5
32°	1694.4	1697.1	1694.4	1687.5	1682.5	1681.0
32.5°	1657.6	1659.9	1657.6	1651.1	1647.6	1646.1
33°	1618.0	1620.3	1618.0	1615.0	1613.0	1612.3
33.5°	1575.0	1578.5	1575.0	1576.6	1577.3	1577.3
34°	1530.5	1538.2	1530.5	1535.5	1536.2	1537.8
34.5°	1484.8	1490.6	1484.8	1491.3	1491.7	1495.2
35°	1438.3	1442.2	1438.3	1444.5	1444.5	1449.1
35.5°	1389.2	1391.5	1389.2	1394.6	1396.9	1398.8
36°	1338.5	1338.9	1338.5	1341.6	1345.8	1346.6
36.5°	1284.7	1282.4	1284.7	1286.7	1292.8	1291.3
37°	1229.8	1226.8	1229.8	1231.0	1236.4	1231.8
37.5°	1172.6	1171.5	1172.6	1174.5	1176.1	1172.6
38°	1115.8	1114.7	1115.8	1114.3	1116.2	1113.5
38.5°	1054.0	1057.1	1054.0	1053.6	1052.8	1054.4
39°	992.6	998.7	992.6	992.6	990.6	994.1
39.5°	933.8	938.4	933.8	931.5	928.8	930.7
40°	875.8	879.3	875.8	872.4	868.9	867.4
40.5°	820.1	819.8	820.1	811.7	808.2	804.4
41°	762.6	761.0	762.6	752.6	747.6	743.4
41.5°	705.7	703.0	705.7	693.8	687.3	681.9
42°	649.7	647.7	649.7	637.8	628.9	623.6
42.5°	595.9	594.8	595.9	583.6	572.1	567.1
43°	544.8	543.7	544.8	531.0	519.1	512.6
43.5°	492.6	493.8	492.6	479.2	467.3	463.8



TEST NUMBER: P776460

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	350.9	355.9	350.9	338.7	325.6	324.1
45.5°	308.3	314.9	308.3	297.6	283.0	279.5
46°	271.1	278.0	271.1	258.8	243.0	240.4
46.5°	237.3	245.4	237.3	221.9	209.6	205.0
47°	205.0	212.7	205.0	187.8	178.2	172.8
47.5°	174.3	180.1	174.3	159.3	150.5	145.1
48°	146.3	147.4	146.3	132.9	126.7	120.2
48.5°	121.3	119.4	121.3	109.8	104.8	99.1
49°	99.8	96.8	99.8	89.1	85.6	82.2
49.5°	80.2	76.8	80.2	73.7	69.9	68.7
50°	65.3	61.4	65.3	59.1	54.9	55.3
50.5°	51.8	48.4	51.8	45.7	43.4	41.9
51°	41.5	38.4	41.5	37.2	33.0	32.3
51.5°	34.6	34.2	34.6	29.6	27.3	24.2
52°	27.3	29.9	27.3	25.0	22.7	21.1
52.5°	23.0	25.3	23.0	21.5	19.6	19.2
53°	20.0	21.1	20.0	18.4	18.4	18.0
53.5°	17.3	16.9	17.3	17.7	17.3	17.3
54°	16.5	16.1	16.5	16.5	16.5	16.5
54.5°	15.7	15.4	15.7	15.7	15.7	15.7
55°	15.0	14.6	15.0	15.0	15.0	15.0
55.5°	14.2	13.8	14.2	14.2	14.2	14.2
56°	13.4	13.1	13.4	13.4	13.4	13.4
56.5°	12.7	12.3	12.7	13.1	12.7	12.7
57°	11.9	11.9	11.9	12.3	11.9	11.9
57.5°	11.1	11.1	11.1	11.5	11.5	11.1
58°	10.8	10.4	10.8	10.8	10.8	10.8
58.5°	10.0	10.0	10.0	10.4	10.4	10.0
59°	9.6	9.2	9.6	9.6	9.6	9.6
59.5°	9.2	8.8	9.2	9.2	9.2	8.8
60°	8.4	8.4	8.4	8.8	8.4	8.4
60.5°	8.1	8.1	8.1	8.4	8.1	8.1
61°	7.7	7.7	7.7	7.7	7.7	7.7
61.5°	7.3	7.3	7.3	7.3	7.3	7.3
62°	6.9	6.9	6.9	6.9	6.9	6.9
62.5°	6.5	6.5	6.5	6.5	6.5	6.5
63°	6.1	6.1	6.1	6.1	6.1	6.1
63.5°	5.8	5.8	5.8	6.1	5.8	5.8
64°	5.8	5.4	5.8	5.8	5.4	5.4
64.5°	5.4	5.0	5.4	5.4	5.4	5.0
65°	5.0	5.0	5.0	5.0	5.0	5.0
65.5°	4.6	4.6	4.6	5.0	4.6	4.6
66°	4.6	4.6	4.6	4.6	4.6	4.2



TEST NUMBER: P776460

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	3.8	3.8	3.8	3.8	3.8	3.8
68°	3.8	3.5	3.8	3.8	3.5	3.5
68.5°	3.5	3.5	3.5	3.5	3.5	3.5
69°	3.5	3.1	3.5	3.5	3.1	3.1
69.5°	3.1	3.1	3.1	3.1	3.1	3.1
70°	3.1	3.1	3.1	3.1	2.7	2.7
70.5°	2.7	2.7	2.7	2.7	2.7	2.7
71°	2.7	2.7	2.7	2.7	2.7	2.7
71.5°	2.7	2.3	2.7	2.7	2.3	2.3
72°	2.3	2.3	2.3	2.3	2.3	2.3
72.5°	2.3	2.3	2.3	2.3	2.3	2.3
73°	2.3	1.9	2.3	1.9	1.9	1.9
73.5°	1.9	1.9	1.9	1.9	1.9	1.9
74°	1.9	1.9	1.9	1.9	1.9	1.9
74.5°	1.9	1.9	1.9	1.9	1.5	1.5
75°	1.5	1.5	1.5	1.5	1.5	1.5
75.5°	1.5	1.5	1.5	1.5	1.5	1.5
76°	1.5	1.5	1.5	1.5	1.5	1.5
76.5°	1.5	1.5	1.5	1.2	1.2	1.2
77°	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2
78°	1.2	1.2	1.2	1.2	1.2	1.2
78.5°	1.2	1.2	1.2	1.2	0.8	0.8
79°	1.2	0.8	1.2	0.8	0.8	0.8
79.5°	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8
80.5°	0.8	0.8	0.8	0.8	0.8	0.8
81°	0.8	0.8	0.8	0.8	0.8	0.8
81.5°	0.8	0.8	0.8	0.8	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.0	0.0
85.5°	0.4	0.4	0.4	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: P776460  
CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-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°	3002.2	3000.3	3005.7	3022.6	3020.3	3022.6	3005.7	3000.3	3002.2	3000.3	3005.7
22°	2833.7	2860.5	2873.2	2895.5	2892.8	2895.5	2873.2	2860.5	2833.7	2860.5	2873.2



44°	415.8	418.9	429.7	443.1	444.6	443.1	429.7	418.9	415.8	418.9	429.7
44.5°	369.4	371.3	381.7	395.5	399.3	395.5	381.7	371.3	369.4	371.3	381.7



66.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
67°	3.8	3.8	4.2	4.2	3.8	4.2	4.2	3.8	3.8	3.8	4.2



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°	3022.6	3020.3	3022.6	3005.7	3000.3	3002.2
22°	2895.5	2892.8	2895.5	2873.2	2860.5	2833.7



44°	443.1	444.6	443.1	429.7	418.9	415.8
44.5°	395.5	399.3	395.5	381.7	371.3	369.4

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66.5°	4.2	4.2	4.2	4.2	4.2	4.2
67°	4.2	3.8	4.2	4.2	3.8	3.8

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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)