

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: P776336

Luminaire Tested: HCDJBL3040CSD-HCD61TRC-4000lm-3000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776336  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B035-HCD61TRC)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD61TRC-4000lm-3000K  
Description: 6 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4831.1 lumens  
Efficiency: N/A  
Efficacy: 125.5 lumens/watt  
Spacing Criteria (0/90/45): 1.39 / 1.39 / 1.3  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

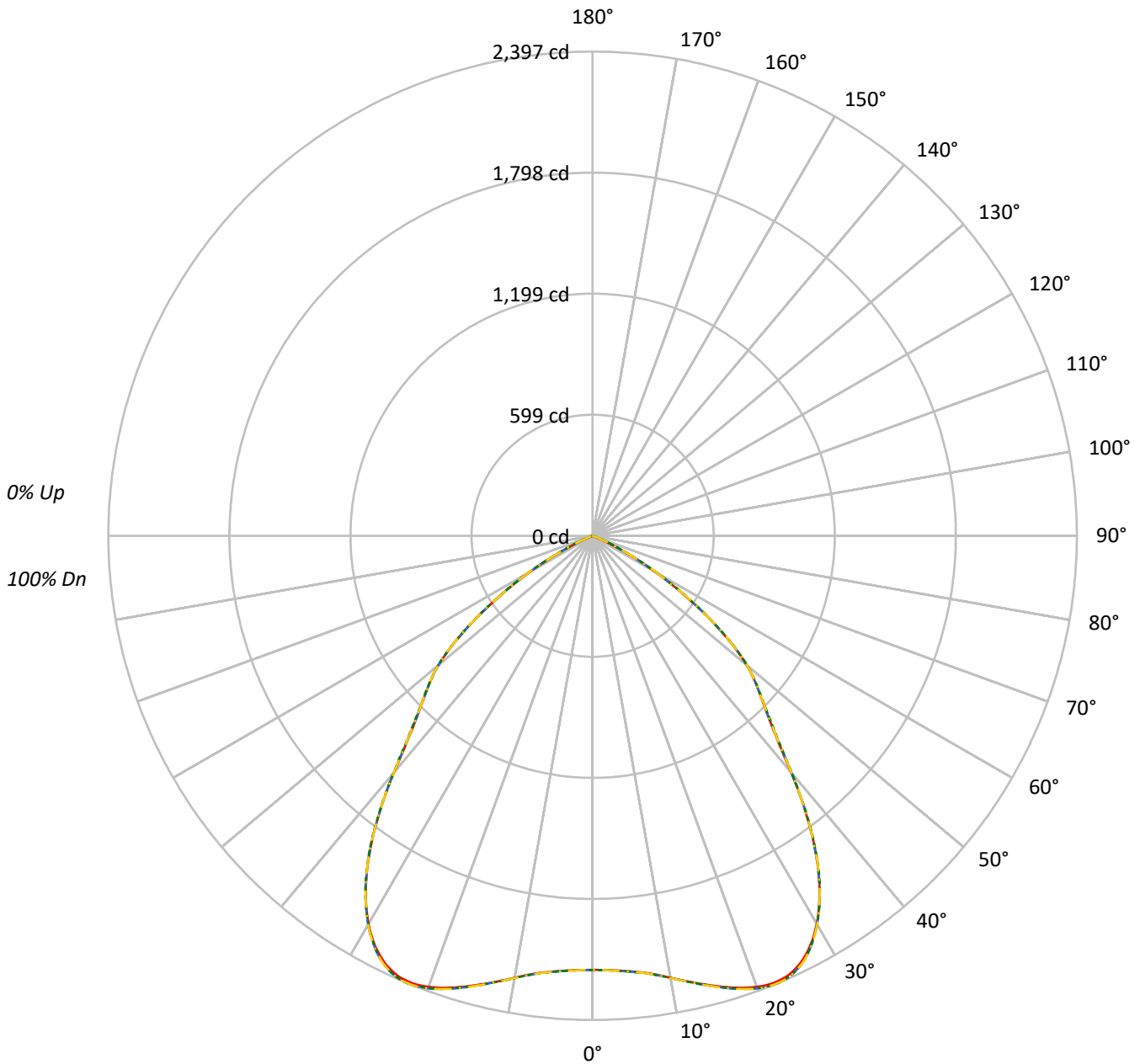
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
RC	80									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	112	108	105	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90																			
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80																			
3	97	88	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71																			
4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	63																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	66	59	53	76	65	58	53	64	57	52	62	56	52	61	56	52	50																			
7	72	61	53	48	71	60	53	47	58	52	47	57	51	47	56	51	47	45																			
8	68	56	48	43	66	55	48	43	54	47	43	53	47	42	52	46	42	40																			
9	63	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	38	37																			
10	60	48	40	36	58	47	40	36	46	40	35	45	39	35	44	39	35	34																			

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

	0°	90°	180°	270°
0°	117858	117858	117858	117858
5°	119150	119233	119150	119233
10°	123706	123751	123706	123751
15°	130880	131011	130880	131011
20°	138647	139032	138647	139032
25°	143252	143845	143252	143845
30°	140452	140623	140452	140623
35°	128947	129362	128947	129362
40°	109312	109756	109312	109756
45°	93630	94111	93630	94111
50°	84935	85132	84935	85132
55°	65403	66072	65403	66072
60°	39405	40644	39405	40644
65°	12336	15747	12336	15747
70°	64	625	64	625
75°	0	85	0	85
80°	0	0	0	0
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 94111 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.5	4.3
10°-20°	656.5	13.6
20°-30°	1085.4	22.5
30°-40°	1191.4	24.7
40°-50°	946.1	19.6
50°-60°	609.3	12.6
60°-70°	133.4	2.8
70°-80°	0.4	0.0
80°-90°	0.0	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1950.5	40.4
0°-40°	3141.9	65.0
0°-60°	4697.3	97.2
0°-90°	4831.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4831.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2150	2150	2150	2150	2150	
5°	2165	2167	2165	2167	2165	208
15°	2306	2308	2306	2308	2306	656
25°	2368	2378	2368	2378	2368	1083
35°	1927	1933	1927	1933	1927	1190
45°	1208	1214	1208	1214	1208	944
55°	684	691	684	691	684	606
65°	95	121	95	121	95	121
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2149.9	2149.9	2149.9	2149.9	2149.9	2149.9	2149.9	2149.9	2149.9	2149.9	2149.9
0.5°	2149.1	2149.9	2150.3	2150.7	2150.3	2150.7	2150.3	2149.9	2149.1	2149.9	2150.3
1°	2149.9	2150.3	2150.7	2151.1	2150.7	2151.1	2150.7	2150.3	2149.9	2150.3	2150.7
1.5°	2150.7	2151.1	2151.5	2151.9	2151.5	2151.9	2151.5	2151.1	2150.7	2151.1	2151.5
2°	2151.9	2152.3	2152.6	2152.6	2152.3	2152.6	2152.6	2152.3	2151.9	2152.3	2152.6
2.5°	2153.0	2153.4	2154.2	2154.2	2153.8	2154.2	2154.2	2153.4	2153.0	2153.4	2154.2
3°	2155.0	2155.4	2155.8	2155.8	2155.4	2155.8	2155.8	2155.4	2155.0	2155.4	2155.8
3.5°	2157.0	2157.3	2158.1	2158.1	2157.7	2158.1	2158.1	2157.3	2157.0	2157.3	2158.1
4°	2159.3	2159.7	2160.5	2160.9	2160.5	2160.9	2160.5	2159.7	2159.3	2159.7	2160.5
4.5°	2162.0	2162.4	2163.2	2163.6	2163.2	2163.6	2163.2	2162.4	2162.0	2162.4	2163.2
5°	2165.2	2165.6	2166.3	2166.7	2166.3	2166.7	2166.3	2165.6	2165.2	2165.6	2166.3
5.5°	2168.3	2169.1	2169.9	2170.7	2170.3	2170.7	2169.9	2169.1	2168.3	2169.1	2169.9
6°	2172.2	2172.6	2173.8	2174.6	2174.2	2174.6	2173.8	2172.6	2172.2	2172.6	2173.8
6.5°	2176.5	2176.9	2178.1	2178.5	2178.1	2178.5	2178.1	2176.9	2176.5	2176.9	2178.1
7°	2181.2	2181.6	2182.8	2183.2	2182.8	2183.2	2182.8	2181.6	2181.2	2181.6	2182.8
7.5°	2186.7	2187.1	2188.3	2188.3	2187.7	2188.3	2188.3	2187.1	2186.7	2187.1	2188.3
8°	2192.2	2193.0	2194.1	2194.5	2194.1	2194.5	2194.1	2193.0	2192.2	2193.0	2194.1
8.5°	2198.8	2199.6	2201.2	2201.2	2200.8	2201.2	2201.2	2199.6	2198.8	2199.6	2201.2
9°	2206.3	2207.1	2208.2	2208.6	2207.8	2208.6	2208.2	2207.1	2206.3	2207.1	2208.2
9.5°	2214.1	2214.9	2216.1	2216.5	2215.3	2216.5	2216.1	2214.9	2214.1	2214.9	2216.1
10°	2222.3	2223.1	2224.3	2224.3	2223.1	2224.3	2224.3	2223.1	2222.3	2223.1	2224.3
10.5°	2230.5	2231.3	2232.1	2232.1	2231.3	2232.1	2232.1	2231.3	2230.5	2231.3	2232.1
11°	2238.8	2239.9	2240.7	2240.3	2239.6	2240.3	2240.7	2239.9	2238.8	2239.9	2240.7
11.5°	2247.4	2248.2	2248.9	2248.6	2247.8	2248.6	2248.9	2248.2	2247.4	2248.2	2248.9
12°	2255.6	2256.4	2257.2	2257.2	2256.4	2257.2	2257.2	2256.4	2255.6	2256.4	2257.2
12.5°	2263.8	2265.0	2265.8	2265.8	2265.0	2265.8	2265.8	2265.0	2263.8	2265.0	2265.8
13°	2272.0	2273.6	2274.4	2274.4	2273.6	2274.4	2274.4	2273.6	2272.0	2273.6	2274.4
13.5°	2280.7	2282.2	2283.4	2283.0	2282.2	2283.0	2283.4	2282.2	2280.7	2282.2	2283.4
14°	2288.9	2290.8	2292.4	2292.4	2290.8	2292.4	2292.4	2290.8	2288.9	2290.8	2292.4
14.5°	2297.5	2299.4	2301.0	2301.4	2299.8	2301.4	2301.0	2299.4	2297.5	2299.4	2301.0
15°	2306.1	2308.1	2310.0	2310.4	2308.4	2310.4	2310.0	2308.1	2306.1	2308.1	2310.0
15.5°	2314.3	2316.7	2319.0	2319.0	2317.1	2319.0	2319.0	2316.7	2314.3	2316.7	2319.0
16°	2322.5	2325.3	2327.6	2327.6	2325.7	2327.6	2327.6	2325.3	2322.5	2325.3	2327.6
16.5°	2330.4	2333.1	2335.9	2335.9	2333.9	2335.9	2335.9	2333.1	2330.4	2333.1	2335.9
17°	2338.6	2341.3	2344.1	2344.1	2341.7	2344.1	2344.1	2341.3	2338.6	2341.3	2344.1
17.5°	2346.0	2349.2	2351.9	2351.9	2349.6	2351.9	2351.9	2349.2	2346.0	2349.2	2351.9
18°	2353.1	2356.6	2359.3	2359.3	2357.4	2359.3	2359.3	2356.6	2353.1	2356.6	2359.3
18.5°	2359.7	2363.6	2366.4	2366.4	2364.4	2366.4	2366.4	2363.6	2359.7	2363.6	2366.4
19°	2366.0	2369.9	2373.0	2372.6	2371.1	2372.6	2373.0	2369.9	2366.0	2369.9	2373.0
19.5°	2371.5	2375.4	2379.3	2378.5	2377.3	2378.5	2379.3	2375.4	2371.5	2375.4	2379.3
20°	2376.6	2380.5	2384.8	2383.6	2383.2	2383.6	2384.8	2380.5	2376.6	2380.5	2384.8
20.5°	2380.9	2384.8	2389.1	2387.9	2387.9	2387.9	2389.1	2384.8	2380.9	2384.8	2389.1
21°	2384.0	2387.9	2392.6	2391.0	2391.8	2391.0	2392.6	2387.9	2384.0	2387.9	2392.6



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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°	2387.9	2391.4	2396.9	2395.0	2397.3	2395.0	2396.9	2391.4	2387.9	2391.4	2396.9
23°	2387.1	2390.3	2396.1	2393.8	2396.5	2393.8	2396.1	2390.3	2387.1	2390.3	2396.1
23.5°	2384.8	2387.9	2393.8	2391.0	2394.6	2391.0	2393.8	2387.9	2384.8	2387.9	2393.8
24°	2380.9	2384.0	2389.9	2387.5	2390.7	2387.5	2389.9	2384.0	2380.9	2384.0	2389.9
24.5°	2375.4	2378.5	2384.4	2382.4	2385.2	2382.4	2384.4	2378.5	2375.4	2378.5	2384.4
25°	2368.3	2371.9	2377.3	2375.8	2378.1	2375.8	2377.3	2371.9	2368.3	2371.9	2377.3
25.5°	2360.5	2363.6	2369.1	2368.0	2369.1	2368.0	2369.1	2363.6	2360.5	2363.6	2369.1
26°	2350.7	2353.9	2358.9	2358.6	2358.9	2358.6	2358.9	2353.9	2350.7	2353.9	2358.9
26.5°	2338.6	2342.1	2347.2	2347.6	2346.8	2347.6	2347.2	2342.1	2338.6	2342.1	2347.2
27°	2326.1	2329.6	2333.9	2335.1	2333.1	2335.1	2333.9	2329.6	2326.1	2329.6	2333.9
27.5°	2311.6	2315.1	2319.0	2321.0	2317.8	2321.0	2319.0	2315.1	2311.6	2315.1	2319.0
28°	2295.5	2299.1	2302.2	2305.3	2301.0	2305.3	2302.2	2299.1	2295.5	2299.1	2302.2
28.5°	2278.7	2281.4	2284.6	2288.5	2283.0	2288.5	2284.6	2281.4	2278.7	2281.4	2284.6
29°	2259.9	2262.6	2265.0	2269.7	2263.8	2269.7	2265.0	2262.6	2259.9	2262.6	2265.0
29.5°	2239.9	2242.3	2245.0	2248.9	2243.5	2248.9	2245.0	2242.3	2239.9	2242.3	2245.0
30°	2218.8	2220.4	2222.3	2227.0	2221.5	2227.0	2222.3	2220.4	2218.8	2220.4	2222.3
30.5°	2196.1	2196.9	2199.2	2203.9	2198.4	2203.9	2199.2	2196.9	2196.1	2196.9	2199.2
31°	2171.4	2172.2	2174.6	2178.9	2174.2	2178.9	2174.6	2172.2	2171.4	2172.2	2174.6
31.5°	2146.0	2146.0	2148.7	2152.3	2148.7	2152.3	2148.7	2146.0	2146.0	2146.0	2148.7
32°	2119.0	2118.6	2120.9	2124.5	2122.1	2124.5	2120.9	2118.6	2119.0	2118.6	2120.9
32.5°	2090.4	2089.6	2092.8	2095.1	2094.3	2095.1	2092.8	2089.6	2090.4	2089.6	2092.8
33°	2060.7	2059.9	2062.6	2064.6	2065.0	2064.6	2062.6	2059.9	2060.7	2059.9	2062.6
33.5°	2029.3	2027.8	2031.3	2032.5	2033.6	2032.5	2031.3	2027.8	2029.3	2027.8	2031.3
34°	1996.8	1995.3	1998.4	1998.8	2001.9	1998.8	1998.4	1995.3	1996.8	1995.3	1998.4
34.5°	1962.0	1962.0	1964.0	1964.4	1967.9	1964.4	1964.0	1962.0	1962.0	1962.0	1964.0
35°	1926.8	1926.4	1928.3	1929.1	1933.0	1929.1	1928.3	1926.4	1926.8	1926.4	1928.3
35.5°	1890.8	1890.8	1892.3	1893.1	1897.0	1893.1	1892.3	1890.8	1890.8	1890.8	1892.3
36°	1854.0	1854.0	1855.1	1856.3	1859.1	1856.3	1855.1	1854.0	1854.0	1854.0	1855.1
36.5°	1816.0	1816.4	1817.2	1817.9	1821.1	1817.9	1817.2	1816.4	1816.0	1816.4	1817.2
37°	1776.5	1777.2	1777.6	1778.8	1781.1	1778.8	1777.6	1777.2	1776.5	1777.2	1777.6
37.5°	1736.9	1737.3	1738.1	1739.3	1740.4	1739.3	1738.1	1737.3	1736.9	1737.3	1738.1
38°	1696.6	1696.6	1697.8	1698.6	1699.7	1698.6	1697.8	1696.6	1696.6	1696.6	1697.8
38.5°	1655.5	1655.5	1656.7	1657.4	1658.2	1657.4	1656.7	1655.5	1655.5	1655.5	1656.7
39°	1613.6	1613.6	1615.2	1616.3	1616.7	1616.3	1615.2	1613.6	1613.6	1613.6	1615.2
39.5°	1570.5	1570.9	1572.5	1574.8	1575.2	1574.8	1572.5	1570.9	1570.5	1570.9	1572.5
40°	1527.5	1527.9	1530.6	1532.6	1533.7	1532.6	1530.6	1527.9	1527.5	1527.9	1530.6
40.5°	1485.2	1486.0	1489.5	1493.0	1493.8	1493.0	1489.5	1486.0	1485.2	1486.0	1489.5
41°	1445.3	1446.4	1450.0	1453.9	1455.5	1453.9	1450.0	1446.4	1445.3	1446.4	1450.0
41.5°	1407.7	1409.3	1412.4	1416.3	1417.5	1416.3	1412.4	1409.3	1407.7	1409.3	1412.4
42°	1373.2	1374.0	1377.2	1379.9	1382.3	1379.9	1377.2	1374.0	1373.2	1374.0	1377.2
42.5°	1341.1	1341.5	1345.5	1348.2	1349.8	1348.2	1345.5	1341.5	1341.1	1341.5	1345.5
43°	1309.8	1310.2	1314.5	1317.7	1321.2	1317.7	1314.5	1310.2	1309.8	1310.2	1314.5
43.5°	1280.9	1282.0	1285.2	1288.3	1291.0	1288.3	1285.2	1282.0	1280.9	1282.0	1285.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1207.7	1207.7	1210.4	1211.6	1213.9	1211.6	1210.4	1207.7	1207.7	1207.7	1210.4
45.5°	1185.3	1185.3	1188.1	1189.3	1190.4	1189.3	1188.1	1185.3	1185.3	1185.3	1188.1
46°	1163.8	1164.2	1166.2	1167.7	1168.5	1167.7	1166.2	1164.2	1163.8	1164.2	1166.2
46.5°	1143.1	1143.1	1145.0	1146.2	1147.8	1146.2	1145.0	1143.1	1143.1	1143.1	1145.0
47°	1122.7	1122.7	1124.3	1125.8	1127.0	1125.8	1124.3	1122.7	1122.7	1122.7	1124.3
47.5°	1102.4	1102.4	1104.3	1105.5	1105.9	1105.5	1104.3	1102.4	1102.4	1102.4	1104.3
48°	1082.8	1082.4	1084.3	1085.5	1086.3	1085.5	1084.3	1082.4	1082.8	1082.4	1084.3
48.5°	1062.4	1062.4	1064.0	1065.6	1065.9	1065.6	1064.0	1062.4	1062.4	1062.4	1064.0
49°	1041.3	1041.7	1043.2	1044.4	1045.2	1044.4	1043.2	1041.7	1041.3	1041.7	1043.2
49.5°	1019.8	1019.4	1021.3	1022.5	1022.9	1022.5	1021.3	1019.4	1019.8	1019.4	1021.3
50°	995.9	995.9	997.1	998.2	998.2	998.2	997.1	995.9	995.9	995.9	997.1
50.5°	969.6	969.6	970.4	972.0	972.0	972.0	970.4	969.6	969.6	969.6	970.4
51°	941.9	941.5	942.6	943.8	945.0	943.8	942.6	941.5	941.9	941.5	942.6
51.5°	912.5	912.1	913.7	915.2	915.6	915.2	913.7	912.1	912.5	912.1	913.7
52°	882.0	882.4	883.5	884.7	885.5	884.7	883.5	882.4	882.0	882.4	883.5
52.5°	850.6	850.3	852.2	853.8	854.2	853.8	852.2	850.3	850.6	850.3	852.2
53°	817.8	818.2	820.1	822.1	821.7	822.1	820.1	818.2	817.8	818.2	820.1
53.5°	784.9	785.3	787.6	789.2	790.0	789.2	787.6	785.3	784.9	785.3	787.6
54°	751.2	752.0	754.3	755.9	756.3	755.9	754.3	752.0	751.2	752.0	754.3
54.5°	717.9	717.9	721.1	723.0	723.8	723.0	721.1	717.9	717.9	717.9	721.1
55°	684.3	684.7	688.2	689.8	691.3	689.8	688.2	684.7	684.3	684.7	688.2
55.5°	649.8	650.6	654.1	656.5	658.0	656.5	654.1	650.6	649.8	650.6	654.1
56°	615.8	616.9	620.9	622.8	624.8	622.8	620.9	616.9	615.8	616.9	620.9
56.5°	582.1	583.3	587.2	589.5	591.5	589.5	587.2	583.3	582.1	583.3	587.2
57°	548.4	550.4	553.9	556.7	558.6	556.7	553.9	550.4	548.4	550.4	553.9
57.5°	515.6	517.5	521.0	524.2	526.1	524.2	521.0	517.5	515.6	517.5	521.0
58°	483.1	484.6	488.5	492.5	494.0	492.5	488.5	484.6	483.1	484.6	488.5
58.5°	450.6	452.9	456.8	461.5	462.7	461.5	456.8	452.9	450.6	452.9	456.8
59°	419.3	422.0	425.1	430.2	431.4	430.2	425.1	422.0	419.3	422.0	425.1
59.5°	389.1	391.1	394.6	399.7	400.9	399.7	394.6	391.1	389.1	391.1	394.6
60°	359.4	360.9	364.5	369.1	370.7	369.1	364.5	360.9	359.4	360.9	364.5
60.5°	329.6	331.2	334.7	339.4	341.7	339.4	334.7	331.2	329.6	331.2	334.7
61°	300.6	302.2	306.5	310.8	313.2	310.8	306.5	302.2	300.6	302.2	306.5
61.5°	271.3	274.4	278.7	283.0	286.5	283.0	278.7	274.4	271.3	274.4	278.7
62°	243.5	247.4	251.7	256.4	259.9	256.4	251.7	247.4	243.5	247.4	251.7
62.5°	215.7	220.8	225.5	230.2	234.1	230.2	225.5	220.8	215.7	220.8	225.5
63°	188.7	195.7	200.0	204.7	209.0	204.7	200.0	195.7	188.7	195.7	200.0
63.5°	162.8	171.9	176.5	180.9	185.6	180.9	176.5	171.9	162.8	171.9	176.5
64°	137.8	149.5	155.0	158.9	163.6	158.9	155.0	149.5	137.8	149.5	155.0
64.5°	115.5	129.2	134.3	137.8	142.5	137.8	134.3	129.2	115.5	129.2	134.3
65°	95.1	109.6	114.7	117.8	121.4	117.8	114.7	109.6	95.1	109.6	114.7
65.5°	75.9	92.4	96.7	98.3	101.4	98.3	96.7	92.4	75.9	92.4	96.7
66°	59.5	76.7	79.9	82.2	83.8	82.2	79.9	76.7	59.5	76.7	79.9





TEST NUMBER: P776336

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	18.4	35.6	38.4	40.7	43.1	40.7	38.4	35.6	18.4	35.6	38.4
68°	11.0	25.1	27.4	30.5	35.2	30.5	27.4	25.1	11.0	25.1	27.4
68.5°	6.7	16.4	19.6	21.5	27.4	21.5	19.6	16.4	6.7	16.4	19.6
69°	3.9	9.8	12.1	13.7	19.6	13.7	12.1	9.8	3.9	9.8	12.1
69.5°	2.3	6.3	7.0	7.0	11.7	7.0	7.0	6.3	2.3	6.3	7.0
70°	0.4	3.1	3.9	3.9	3.9	3.9	3.9	3.1	0.4	3.1	3.9
70.5°	0.4	1.2	2.3	2.3	1.6	2.3	2.3	1.2	0.4	1.2	2.3
71°	0.4	0.4	1.2	1.2	0.4	1.2	1.2	0.4	0.4	0.4	1.2
71.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
74°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
75.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776336

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-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: P776336

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2149.9	2149.9	2149.9	2149.9	2149.9	2149.9
0.5°	2150.7	2150.3	2150.7	2150.3	2149.9	2149.1
1°	2151.1	2150.7	2151.1	2150.7	2150.3	2149.9
1.5°	2151.9	2151.5	2151.9	2151.5	2151.1	2150.7
2°	2152.6	2152.3	2152.6	2152.6	2152.3	2151.9
2.5°	2154.2	2153.8	2154.2	2154.2	2153.4	2153.0
3°	2155.8	2155.4	2155.8	2155.8	2155.4	2155.0
3.5°	2158.1	2157.7	2158.1	2158.1	2157.3	2157.0
4°	2160.9	2160.5	2160.9	2160.5	2159.7	2159.3
4.5°	2163.6	2163.2	2163.6	2163.2	2162.4	2162.0
5°	2166.7	2166.7	2166.7	2166.3	2165.6	2165.2
5.5°	2170.7	2170.3	2170.7	2169.9	2169.1	2168.3
6°	2174.6	2174.2	2174.6	2173.8	2172.6	2172.2
6.5°	2178.5	2178.1	2178.5	2178.1	2176.9	2176.5
7°	2183.2	2182.8	2183.2	2182.8	2181.6	2181.2
7.5°	2188.3	2187.9	2188.3	2188.3	2187.1	2186.7
8°	2194.5	2194.1	2194.5	2194.1	2193.0	2192.2
8.5°	2201.2	2200.8	2201.2	2201.2	2199.6	2198.8
9°	2208.6	2207.8	2208.6	2208.2	2207.1	2206.3
9.5°	2216.5	2215.3	2216.5	2216.1	2214.9	2214.1
10°	2224.3	2223.1	2224.3	2224.3	2223.1	2222.3
10.5°	2232.1	2231.3	2232.1	2232.1	2231.3	2230.5
11°	2240.3	2239.6	2240.3	2240.7	2239.9	2238.8
11.5°	2248.6	2247.8	2248.6	2248.9	2248.2	2247.4
12°	2257.2	2256.4	2257.2	2257.2	2256.4	2255.6
12.5°	2265.8	2265.0	2265.8	2265.8	2265.0	2263.8
13°	2274.4	2273.6	2274.4	2274.4	2273.6	2272.0
13.5°	2283.0	2282.2	2283.0	2283.4	2282.2	2280.7
14°	2292.4	2290.8	2292.4	2292.4	2290.8	2288.9
14.5°	2301.4	2299.8	2301.4	2301.0	2299.4	2297.5
15°	2310.4	2308.4	2310.4	2310.0	2308.1	2306.1
15.5°	2319.0	2317.1	2319.0	2319.0	2316.7	2314.3
16°	2327.6	2325.7	2327.6	2327.6	2325.3	2322.5
16.5°	2335.9	2333.9	2335.9	2335.9	2333.1	2330.4
17°	2344.1	2341.7	2344.1	2344.1	2341.3	2338.6
17.5°	2351.9	2349.6	2351.9	2351.9	2349.2	2346.0
18°	2359.3	2357.4	2359.3	2359.3	2356.6	2353.1
18.5°	2366.4	2364.4	2366.4	2366.4	2363.6	2359.7
19°	2372.6	2371.1	2372.6	2373.0	2369.9	2366.0
19.5°	2378.5	2377.3	2378.5	2379.3	2375.4	2371.5
20°	2383.6	2383.2	2383.6	2384.8	2380.5	2376.6
20.5°	2387.9	2387.9	2387.9	2389.1	2384.8	2380.9
21°	2391.0	2391.8	2391.0	2392.6	2387.9	2384.0



TEST NUMBER: P776336

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2395.0	2397.3	2395.0	2396.9	2391.4	2387.9
23°	2393.8	2396.5	2393.8	2396.1	2390.3	2387.1
23.5°	2391.0	2394.6	2391.0	2393.8	2387.9	2384.8
24°	2387.5	2390.7	2387.5	2389.9	2384.0	2380.9
24.5°	2382.4	2385.2	2382.4	2384.4	2378.5	2375.4
25°	2375.8	2378.1	2375.8	2377.3	2371.9	2368.3
25.5°	2368.0	2369.1	2368.0	2369.1	2363.6	2360.5
26°	2358.6	2358.9	2358.6	2358.9	2353.9	2350.7
26.5°	2347.6	2346.8	2347.6	2347.2	2342.1	2338.6
27°	2335.1	2333.1	2335.1	2333.9	2329.6	2326.1
27.5°	2321.0	2317.8	2321.0	2319.0	2315.1	2311.6
28°	2305.3	2301.0	2305.3	2302.2	2299.1	2295.5
28.5°	2288.5	2283.0	2288.5	2284.6	2281.4	2278.7
29°	2269.7	2263.8	2269.7	2265.0	2262.6	2259.9
29.5°	2248.9	2243.5	2248.9	2245.0	2242.3	2239.9
30°	2227.0	2221.5	2227.0	2222.3	2220.4	2218.8
30.5°	2203.9	2198.4	2203.9	2199.2	2196.9	2196.1
31°	2178.9	2174.2	2178.9	2174.6	2172.2	2171.4
31.5°	2152.3	2148.7	2152.3	2148.7	2146.0	2146.0
32°	2124.5	2122.1	2124.5	2120.9	2118.6	2119.0
32.5°	2095.1	2094.3	2095.1	2092.8	2089.6	2090.4
33°	2064.6	2065.0	2064.6	2062.6	2059.9	2060.7
33.5°	2032.5	2033.6	2032.5	2031.3	2027.8	2029.3
34°	1998.8	2001.9	1998.8	1998.4	1995.3	1996.8
34.5°	1964.4	1967.9	1964.4	1964.0	1962.0	1962.0
35°	1929.1	1933.0	1929.1	1928.3	1926.4	1926.8
35.5°	1893.1	1897.0	1893.1	1892.3	1890.8	1890.8
36°	1856.3	1859.1	1856.3	1855.1	1854.0	1854.0
36.5°	1817.9	1821.1	1817.9	1817.2	1816.4	1816.0
37°	1778.8	1781.1	1778.8	1777.6	1777.2	1776.5
37.5°	1739.3	1740.4	1739.3	1738.1	1737.3	1736.9
38°	1698.6	1699.7	1698.6	1697.8	1696.6	1696.6
38.5°	1657.4	1658.2	1657.4	1656.7	1655.5	1655.5
39°	1616.3	1616.7	1616.3	1615.2	1613.6	1613.6
39.5°	1574.8	1575.2	1574.8	1572.5	1570.9	1570.5
40°	1532.6	1533.7	1532.6	1530.6	1527.9	1527.5
40.5°	1493.0	1493.8	1493.0	1489.5	1486.0	1485.2
41°	1453.9	1455.5	1453.9	1450.0	1446.4	1445.3
41.5°	1416.3	1417.5	1416.3	1412.4	1409.3	1407.7
42°	1379.9	1382.3	1379.9	1377.2	1374.0	1373.2
42.5°	1348.2	1349.8	1348.2	1345.5	1341.5	1341.1
43°	1317.7	1321.2	1317.7	1314.5	1310.2	1309.8
43.5°	1288.3	1291.0	1288.3	1285.2	1282.0	1280.9



TEST NUMBER: P776336

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1211.6	1213.9	1211.6	1210.4	1207.7	1207.7
45.5°	1189.3	1190.4	1189.3	1188.1	1185.3	1185.3
46°	1167.7	1168.5	1167.7	1166.2	1164.2	1163.8
46.5°	1146.2	1147.8	1146.2	1145.0	1143.1	1143.1
47°	1125.8	1127.0	1125.8	1124.3	1122.7	1122.7
47.5°	1105.5	1105.9	1105.5	1104.3	1102.4	1102.4
48°	1085.5	1086.3	1085.5	1084.3	1082.4	1082.8
48.5°	1065.6	1065.9	1065.6	1064.0	1062.4	1062.4
49°	1044.4	1045.2	1044.4	1043.2	1041.7	1041.3
49.5°	1022.5	1022.9	1022.5	1021.3	1019.4	1019.8
50°	998.2	998.2	998.2	997.1	995.9	995.9
50.5°	972.0	972.0	972.0	970.4	969.6	969.6
51°	943.8	945.0	943.8	942.6	941.5	941.9
51.5°	915.2	915.6	915.2	913.7	912.1	912.5
52°	884.7	885.5	884.7	883.5	882.4	882.0
52.5°	853.8	854.2	853.8	852.2	850.3	850.6
53°	822.1	821.7	822.1	820.1	818.2	817.8
53.5°	789.2	790.0	789.2	787.6	785.3	784.9
54°	755.9	756.3	755.9	754.3	752.0	751.2
54.5°	723.0	723.8	723.0	721.1	717.9	717.9
55°	689.8	691.3	689.8	688.2	684.7	684.3
55.5°	656.5	658.0	656.5	654.1	650.6	649.8
56°	622.8	624.8	622.8	620.9	616.9	615.8
56.5°	589.5	591.5	589.5	587.2	583.3	582.1
57°	556.7	558.6	556.7	553.9	550.4	548.4
57.5°	524.2	526.1	524.2	521.0	517.5	515.6
58°	492.5	494.0	492.5	488.5	484.6	483.1
58.5°	461.5	462.7	461.5	456.8	452.9	450.6
59°	430.2	431.4	430.2	425.1	422.0	419.3
59.5°	399.7	400.9	399.7	394.6	391.1	389.1
60°	369.1	370.7	369.1	364.5	360.9	359.4
60.5°	339.4	341.7	339.4	334.7	331.2	329.6
61°	310.8	313.2	310.8	306.5	302.2	300.6
61.5°	283.0	286.5	283.0	278.7	274.4	271.3
62°	256.4	259.9	256.4	251.7	247.4	243.5
62.5°	230.2	234.1	230.2	225.5	220.8	215.7
63°	204.7	209.0	204.7	200.0	195.7	188.7
63.5°	180.9	185.6	180.9	176.5	171.9	162.8
64°	158.9	163.6	158.9	155.0	149.5	137.8
64.5°	137.8	142.5	137.8	134.3	129.2	115.5
65°	117.8	121.4	117.8	114.7	109.6	95.1
65.5°	98.3	101.4	98.3	96.7	92.4	75.9
66°	82.2	83.8	82.2	79.9	76.7	59.5



TEST NUMBER: P776336

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	40.7	43.1	40.7	38.4	35.6	18.4
68°	30.5	35.2	30.5	27.4	25.1	11.0
68.5°	21.5	27.4	21.5	19.6	16.4	6.7
69°	13.7	19.6	13.7	12.1	9.8	3.9
69.5°	7.0	11.7	7.0	7.0	6.3	2.3
70°	3.9	3.9	3.9	3.9	3.1	0.4
70.5°	2.3	1.6	2.3	2.3	1.2	0.4
71°	1.2	0.4	1.2	1.2	0.4	0.4
71.5°	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4
74°	0.4	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.4	0.4	0.4	0.4	0.0	0.0
75.5°	0.4	0.4	0.4	0.0	0.0	0.0
76°	0.0	0.4	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776336

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-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°	2386.7	2390.3	2395.4	2393.4	2395.0	2393.4	2395.4	2390.3	2386.7	2390.3	2395.4
22°	2387.9	2391.4	2396.9	2394.6	2396.5	2394.6	2396.9	2391.4	2387.9	2391.4	2396.9



44°	1254.6	1255.4	1258.5	1260.5	1263.6	1260.5	1258.5	1255.4	1254.6	1255.4	1258.5
44.5°	1230.8	1231.1	1233.9	1235.5	1237.4	1235.5	1233.9	1231.1	1230.8	1231.1	1233.9



66.5°	43.5	61.1	65.0	67.3	67.7	67.3	65.0	61.1	43.5	61.1	65.0
67°	30.1	48.1	50.5	52.8	53.2	52.8	50.5	48.1	30.1	48.1	50.5



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



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21.5°	2393.4	2395.0	2393.4	2395.4	2390.3	2386.7
22°	2394.6	2396.5	2394.6	2396.9	2391.4	2387.9



44°	1260.5	1263.6	1260.5	1258.5	1255.4	1254.6
44.5°	1235.5	1237.4	1235.5	1233.9	1231.1	1230.8

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66.5°	67.3	67.7	67.3	65.0	61.1	43.5
67°	52.8	53.2	52.8	50.5	48.1	30.1

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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)