

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: P776453

Luminaire Tested: HCDJBL3040CSD-HCD81TRMB-4000lm-4000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776453  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B045-HCD81TRMB)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD81TRMB-4000lm-4000K  
Description: 8 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

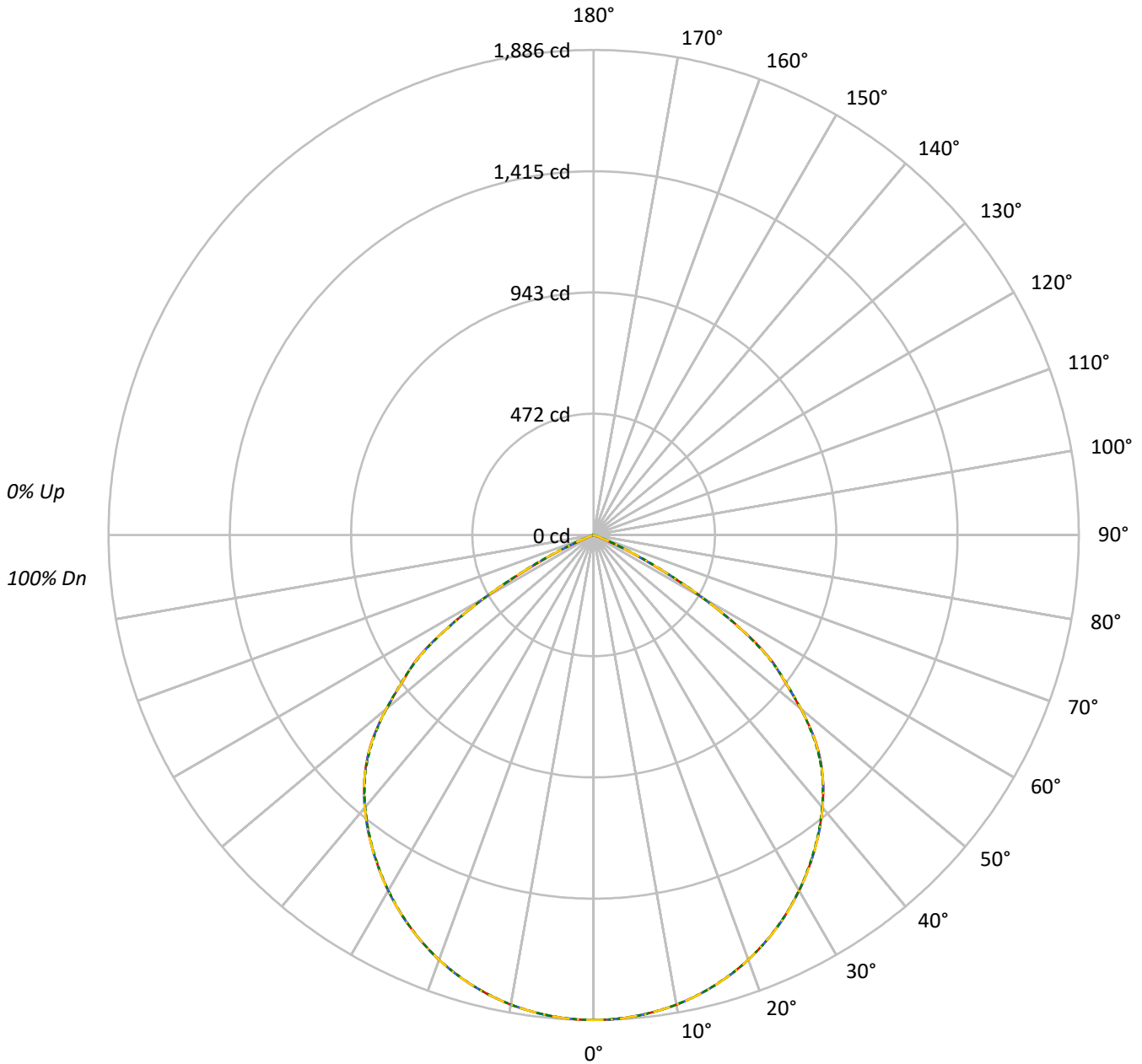
Lumens per Lamp: N/A  
Luminaire Lumens: 4260.7 lumens  
Efficiency: N/A  
Efficacy: 110.7 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.26 / 1.37  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

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			
1	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89					89			
2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	82	80	78					78			
3	95	86	80	74	93	85	79	74	82	77	72	80	75	71	77	73	70	68					68			
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59					59			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52					52			
6	75	63	55	50	74	62	55	49	61	54	49	59	53	49	58	52	48	46					46			
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41					41			
8	65	53	45	39	64	52	45	39	51	44	39	50	43	39	48	43	39	37					37			
9	61	48	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33					33			
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	42	36	32	30					30			

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

	0°	90°	180°	270°
0°	57589	57589	57589	57589
5°	57573	57549	57573	57549
10°	57501	57489	57501	57489
15°	57351	57339	57351	57339
20°	57120	57107	57120	57107
25°	56768	56741	56768	56741
30°	56314	56271	56314	56271
35°	55783	55708	55783	55708
40°	55155	55043	55155	55043
45°	53906	53716	53906	53716
50°	49924	49924	49924	49924
55°	44435	43940	44435	43940
60°	29669	30085	29669	30085
65°	10504	12570	10504	12570
70°	107	1187	107	1187
75°	0	0	0	0
80°	0	0	0	0
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 53906 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.6	4.2
10°-20°	512.1	12.0
20°-30°	776.5	18.2
30°-40°	936.2	22.0
40°-50°	954.3	22.4
50°-60°	717.2	16.8
60°-70°	185.3	4.3
70°-80°	0.5	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°	1467.2	34.4
0°-40°	2403.4	56.4
0°-60°	4074.9	95.6
0°-90°	4260.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4260.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1886	1886	1886	1886	1886	
5°	1879	1878	1879	1878	1879	179
15°	1814	1814	1814	1814	1814	512
25°	1685	1684	1685	1684	1685	777
35°	1497	1495	1497	1495	1497	936
45°	1248	1244	1248	1244	1248	955
55°	835	826	835	826	835	717
65°	145	174	145	174	145	173
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°	1886.3	1886.3	1886.3	1886.3	1886.3	1886.3	1886.3	1886.3	1886.3	1886.3	1886.3
0.5°	1886.3	1886.3	1886.3	1886.3	1885.9	1886.3	1886.3	1886.3	1886.3	1886.3	1886.3
1°	1886.3	1886.3	1886.3	1885.9	1885.5	1885.9	1886.3	1886.3	1886.3	1886.3	1886.3
1.5°	1885.9	1885.9	1885.9	1885.9	1885.5	1885.9	1885.9	1885.9	1885.9	1885.9	1885.9
2°	1885.5	1885.5	1885.5	1885.0	1884.6	1885.0	1885.5	1885.5	1885.5	1885.5	1885.5
2.5°	1884.2	1884.6	1884.6	1884.6	1883.8	1884.6	1884.6	1884.6	1884.2	1884.6	1884.6
3°	1883.4	1883.8	1883.8	1883.8	1883.0	1883.8	1883.8	1883.8	1883.4	1883.8	1883.8
3.5°	1882.6	1882.6	1882.6	1882.6	1882.2	1882.6	1882.6	1882.6	1882.6	1882.6	1882.6
4°	1881.4	1881.4	1881.4	1881.4	1880.6	1881.4	1881.4	1881.4	1881.4	1881.4	1881.4
4.5°	1880.2	1880.2	1880.2	1880.2	1879.4	1880.2	1880.2	1880.2	1880.2	1880.2	1880.2
5°	1878.6	1878.6	1878.6	1878.6	1877.8	1878.6	1878.6	1878.6	1878.6	1878.6	1878.6
5.5°	1877.0	1877.0	1877.0	1877.0	1876.2	1877.0	1877.0	1877.0	1877.0	1877.0	1877.0
6°	1875.0	1875.4	1875.0	1875.0	1874.6	1875.0	1875.0	1875.4	1875.0	1875.4	1875.0
6.5°	1873.0	1873.4	1873.4	1873.0	1872.6	1873.0	1873.4	1873.4	1873.0	1873.4	1873.4
7°	1870.9	1870.9	1870.9	1870.9	1870.5	1870.9	1870.9	1870.9	1870.9	1870.9	1870.9
7.5°	1868.5	1868.5	1868.5	1868.9	1868.1	1868.9	1868.5	1868.5	1868.5	1868.5	1868.5
8°	1866.1	1866.1	1866.1	1866.1	1865.7	1866.1	1866.1	1866.1	1866.1	1866.1	1866.1
8.5°	1863.7	1863.7	1863.7	1863.7	1862.9	1863.7	1863.7	1863.7	1863.7	1863.7	1863.7
9°	1860.9	1860.9	1860.9	1860.9	1860.5	1860.9	1860.9	1860.9	1860.9	1860.9	1860.9
9.5°	1857.7	1858.1	1858.1	1858.1	1857.3	1858.1	1858.1	1858.1	1857.7	1858.1	1858.1
10°	1854.8	1854.8	1854.8	1854.8	1854.4	1854.8	1854.8	1854.8	1854.8	1854.8	1854.8
10.5°	1851.6	1851.6	1851.6	1851.6	1851.2	1851.6	1851.6	1851.6	1851.6	1851.6	1851.6
11°	1848.0	1848.0	1848.0	1848.4	1847.6	1848.4	1848.0	1848.0	1848.0	1848.0	1848.0
11.5°	1844.4	1844.4	1844.4	1844.8	1844.0	1844.8	1844.4	1844.4	1844.4	1844.4	1844.4
12°	1840.7	1840.7	1840.7	1840.7	1840.3	1840.7	1840.7	1840.7	1840.7	1840.7	1840.7
12.5°	1836.7	1836.7	1836.7	1837.1	1836.3	1837.1	1836.7	1836.7	1836.7	1836.7	1836.7
13°	1832.7	1832.7	1832.7	1832.7	1832.3	1832.7	1832.7	1832.7	1832.7	1832.7	1832.7
13.5°	1828.2	1828.6	1828.6	1828.6	1827.8	1828.6	1828.6	1828.6	1828.2	1828.6	1828.6
14°	1823.8	1824.2	1824.2	1824.2	1823.4	1824.2	1824.2	1824.2	1823.8	1824.2	1824.2
14.5°	1819.4	1819.4	1819.4	1819.4	1819.0	1819.4	1819.4	1819.4	1819.4	1819.4	1819.4
15°	1814.5	1814.5	1814.5	1814.9	1814.1	1814.9	1814.5	1814.5	1814.5	1814.5	1814.5
15.5°	1809.7	1809.7	1809.7	1809.7	1809.3	1809.7	1809.7	1809.7	1809.7	1809.7	1809.7
16°	1804.5	1804.9	1804.9	1804.9	1804.1	1804.9	1804.9	1804.9	1804.5	1804.9	1804.9
16.5°	1799.2	1799.2	1799.6	1799.6	1799.2	1799.6	1799.6	1799.2	1799.2	1799.2	1799.6
17°	1794.0	1794.0	1794.4	1794.0	1793.6	1794.0	1794.4	1794.0	1794.0	1794.0	1794.4
17.5°	1788.4	1788.4	1788.8	1788.8	1788.4	1788.8	1788.8	1788.4	1788.4	1788.4	1788.8
18°	1782.7	1782.7	1782.7	1782.7	1782.3	1782.7	1782.7	1782.7	1782.7	1782.7	1782.7
18.5°	1776.7	1776.7	1777.1	1777.1	1776.3	1777.1	1777.1	1776.7	1776.7	1776.7	1777.1
19°	1770.6	1770.6	1771.0	1771.0	1770.2	1771.0	1771.0	1770.6	1770.6	1770.6	1771.0
19.5°	1764.6	1764.6	1764.6	1764.6	1764.2	1764.6	1764.6	1764.6	1764.6	1764.6	1764.6
20°	1758.1	1758.1	1758.1	1758.1	1757.7	1758.1	1758.1	1758.1	1758.1	1758.1	1758.1
20.5°	1751.3	1751.7	1751.7	1751.7	1750.9	1751.7	1751.7	1751.7	1751.3	1751.7	1751.7
21°	1744.8	1744.8	1744.8	1744.8	1744.4	1744.8	1744.8	1744.8	1744.8	1744.8	1744.8



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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°	1723.5	1723.9	1723.9	1723.9	1723.1	1723.9	1723.9	1723.9	1723.5	1723.9	1723.9
23°	1716.2	1716.2	1716.2	1716.2	1715.8	1716.2	1716.2	1716.2	1716.2	1716.2	1716.2
23.5°	1708.6	1709.0	1709.0	1709.0	1708.2	1709.0	1709.0	1709.0	1708.6	1709.0	1709.0
24°	1700.9	1700.9	1701.3	1700.9	1700.5	1700.9	1701.3	1700.9	1700.9	1700.9	1701.3
24.5°	1692.9	1693.3	1693.7	1693.3	1692.5	1693.3	1693.7	1693.3	1692.9	1693.3	1693.7
25°	1685.2	1685.2	1685.6	1685.2	1684.4	1685.2	1685.6	1685.2	1685.2	1685.2	1685.6
25.5°	1676.8	1677.2	1677.6	1677.2	1676.4	1677.2	1677.6	1677.2	1676.8	1677.2	1677.6
26°	1668.7	1668.7	1669.1	1668.7	1667.9	1668.7	1669.1	1668.7	1668.7	1668.7	1669.1
26.5°	1660.2	1660.6	1660.6	1660.2	1659.4	1660.2	1660.6	1660.6	1660.2	1660.6	1660.6
27°	1651.8	1651.8	1652.2	1651.8	1651.0	1651.8	1652.2	1651.8	1651.8	1651.8	1652.2
27.5°	1642.9	1643.3	1643.3	1642.9	1642.1	1642.9	1643.3	1643.3	1642.9	1643.3	1643.3
28°	1634.1	1634.5	1634.5	1634.1	1633.3	1634.1	1634.5	1634.5	1634.1	1634.5	1634.5
28.5°	1625.2	1625.2	1625.6	1625.2	1624.4	1625.2	1625.6	1625.2	1625.2	1625.2	1625.6
29°	1615.9	1616.3	1616.3	1615.9	1614.7	1615.9	1616.3	1616.3	1615.9	1616.3	1616.3
29.5°	1606.7	1607.1	1607.1	1606.7	1605.5	1606.7	1607.1	1607.1	1606.7	1607.1	1607.1
30°	1597.4	1597.8	1597.8	1597.0	1596.2	1597.0	1597.8	1597.8	1597.4	1597.8	1597.8
30.5°	1588.1	1588.1	1588.1	1587.7	1586.5	1587.7	1588.1	1588.1	1588.1	1588.1	1588.1
31°	1578.1	1578.5	1578.9	1577.7	1576.9	1577.7	1578.9	1578.5	1578.1	1578.5	1578.9
31.5°	1568.4	1568.8	1568.8	1568.0	1566.8	1568.0	1568.8	1568.8	1568.4	1568.8	1568.8
32°	1558.7	1559.1	1559.1	1558.3	1556.7	1558.3	1559.1	1559.1	1558.7	1559.1	1559.1
32.5°	1548.6	1549.1	1549.1	1547.8	1546.6	1547.8	1549.1	1549.1	1548.6	1549.1	1549.1
33°	1538.2	1539.0	1539.0	1538.2	1536.6	1538.2	1539.0	1539.0	1538.2	1539.0	1539.0
33.5°	1528.1	1528.5	1528.9	1527.7	1526.1	1527.7	1528.9	1528.5	1528.1	1528.5	1528.9
34°	1517.6	1518.0	1518.4	1517.2	1516.0	1517.2	1518.4	1518.0	1517.6	1518.0	1518.4
34.5°	1507.2	1507.6	1508.0	1506.8	1505.5	1506.8	1508.0	1507.6	1507.2	1507.6	1508.0
35°	1496.7	1497.1	1497.5	1496.3	1494.7	1496.3	1497.5	1497.1	1496.7	1497.1	1497.5
35.5°	1485.8	1486.6	1486.6	1485.4	1483.8	1485.4	1486.6	1486.6	1485.8	1486.6	1486.6
36°	1475.3	1475.7	1476.1	1474.5	1472.9	1474.5	1476.1	1475.7	1475.3	1475.7	1476.1
36.5°	1464.4	1464.9	1465.3	1463.6	1462.0	1463.6	1465.3	1464.9	1464.4	1464.9	1465.3
37°	1453.2	1453.6	1454.0	1452.4	1451.2	1452.4	1454.0	1453.6	1453.2	1453.6	1454.0
37.5°	1441.9	1442.7	1443.1	1441.1	1439.5	1441.1	1443.1	1442.7	1441.9	1442.7	1443.1
38°	1430.6	1431.0	1431.8	1429.8	1428.6	1429.8	1431.8	1431.0	1430.6	1431.0	1431.8
38.5°	1418.9	1419.7	1420.1	1418.5	1416.9	1418.5	1420.1	1419.7	1418.9	1419.7	1420.1
39°	1407.6	1408.4	1408.9	1406.8	1405.2	1406.8	1408.9	1408.4	1407.6	1408.4	1408.9
39.5°	1396.0	1396.4	1396.8	1395.2	1393.1	1395.2	1396.8	1396.4	1396.0	1396.4	1396.8
40°	1383.9	1384.7	1384.7	1383.1	1381.1	1383.1	1384.7	1384.7	1383.9	1384.7	1384.7
40.5°	1371.8	1372.2	1372.6	1370.6	1369.0	1370.6	1372.6	1372.2	1371.8	1372.2	1372.6
41°	1359.3	1360.1	1360.5	1358.5	1356.5	1358.5	1360.5	1360.1	1359.3	1360.1	1360.5
41.5°	1346.8	1347.2	1347.6	1345.6	1344.0	1345.6	1347.6	1347.2	1346.8	1347.2	1347.6
42°	1333.9	1334.3	1334.7	1332.7	1330.7	1332.7	1334.7	1334.3	1333.9	1334.3	1334.7
42.5°	1320.6	1321.4	1321.4	1319.4	1317.4	1319.4	1321.4	1321.4	1320.6	1321.4	1321.4
43°	1307.3	1307.7	1307.7	1305.7	1303.7	1305.7	1307.7	1307.7	1307.3	1307.7	1307.7
43.5°	1293.2	1293.6	1293.6	1291.6	1289.6	1291.6	1293.6	1293.6	1293.2	1293.6	1293.6



TEST NUMBER: P776453

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1248.5	1248.5	1248.1	1246.1	1244.1	1246.1	1248.1	1248.5	1248.5	1248.5	1248.1
45.5°	1232.4	1232.4	1232.0	1229.6	1227.6	1229.6	1232.0	1232.4	1232.4	1232.4	1232.0
46°	1215.9	1215.9	1215.1	1212.7	1210.2	1212.7	1215.1	1215.9	1215.9	1215.9	1215.1
46.5°	1198.1	1198.1	1197.3	1194.5	1192.9	1194.5	1197.3	1198.1	1198.1	1198.1	1197.3
47°	1179.6	1179.6	1178.4	1176.0	1174.0	1176.0	1178.4	1179.6	1179.6	1179.6	1178.4
47.5°	1160.3	1160.3	1159.1	1156.7	1154.6	1156.7	1159.1	1160.3	1160.3	1160.3	1159.1
48°	1140.1	1140.1	1139.3	1136.9	1135.3	1136.9	1139.3	1140.1	1140.1	1140.1	1139.3
48.5°	1119.2	1119.2	1118.4	1116.8	1115.2	1116.8	1118.4	1119.2	1119.2	1119.2	1118.4
49°	1097.0	1097.0	1096.6	1095.4	1094.6	1095.4	1096.6	1097.0	1097.0	1097.0	1096.6
49.5°	1074.9	1074.5	1074.9	1073.7	1073.3	1073.7	1074.9	1074.5	1074.9	1074.5	1074.9
50°	1051.1	1051.5	1052.3	1051.5	1051.1	1051.5	1052.3	1051.5	1051.1	1051.5	1052.3
50.5°	1026.5	1028.1	1029.3	1028.9	1028.9	1028.9	1029.3	1028.1	1026.5	1028.1	1029.3
51°	1003.2	1004.0	1005.2	1006.4	1007.2	1006.4	1005.2	1004.0	1003.2	1004.0	1005.2
51.5°	980.2	980.6	982.2	983.4	984.6	983.4	982.2	980.6	980.2	980.6	982.2
52°	957.2	958.0	959.6	961.3	963.3	961.3	959.6	958.0	957.2	958.0	959.6
52.5°	935.5	936.3	938.3	940.3	941.9	940.3	938.3	936.3	935.5	936.3	938.3
53°	914.9	915.7	917.7	919.4	921.0	919.4	917.7	915.7	914.9	915.7	917.7
53.5°	895.6	896.4	897.2	898.0	899.2	898.0	897.2	896.4	895.6	896.4	897.2
54°	877.5	876.7	876.7	876.3	876.3	876.3	876.7	876.7	877.5	876.7	876.7
54.5°	857.3	856.5	854.9	852.9	851.3	852.9	854.9	856.5	857.3	856.5	854.9
55°	834.8	833.1	830.7	827.9	825.5	827.9	830.7	833.1	834.8	833.1	830.7
55.5°	808.2	806.2	803.7	801.3	798.9	801.3	803.7	806.2	808.2	806.2	803.7
56°	778.4	777.1	774.7	772.3	769.5	772.3	774.7	777.1	778.4	777.1	774.7
56.5°	745.7	744.5	743.7	741.3	739.3	741.3	743.7	744.5	745.7	744.5	743.7
57°	711.5	710.7	710.3	708.3	705.8	708.3	710.3	710.7	711.5	710.7	710.3
57.5°	675.2	675.2	675.2	673.2	671.6	673.2	675.2	675.2	675.2	675.2	675.2
58°	638.6	639.0	639.4	638.2	636.5	638.2	639.4	639.0	638.6	639.0	639.4
58.5°	601.1	601.1	602.3	601.9	600.3	601.9	602.3	601.1	601.1	601.1	602.3
59°	562.8	563.6	564.8	565.2	564.8	565.2	564.8	563.6	562.8	563.6	564.8
59.5°	524.5	525.3	527.4	529.0	529.0	529.0	527.4	525.3	524.5	525.3	527.4
60°	485.9	487.5	489.9	493.1	492.7	493.1	489.9	487.5	485.9	487.5	489.9
60.5°	447.6	449.6	452.8	456.5	456.9	456.5	452.8	449.6	447.6	449.6	452.8
61°	410.5	412.9	416.2	420.2	421.4	420.2	416.2	412.9	410.5	412.9	416.2
61.5°	374.3	376.3	380.7	384.3	386.8	384.3	380.7	376.3	374.3	376.3	380.7
62°	338.0	340.8	345.7	350.1	353.3	350.1	345.7	340.8	338.0	340.8	345.7
62.5°	302.2	305.4	311.8	316.7	319.9	316.7	311.8	305.4	302.2	305.4	311.8
63°	267.9	271.5	278.8	284.0	287.7	284.0	278.8	271.5	267.9	271.5	278.8
63.5°	235.3	238.9	246.6	253.0	259.0	253.0	246.6	238.9	235.3	238.9	246.6
64°	203.9	207.9	215.5	224.0	230.8	224.0	215.5	207.9	203.9	207.9	215.5
64.5°	173.6	178.9	186.9	195.8	202.2	195.8	186.9	178.9	173.6	178.9	186.9
65°	145.4	152.3	159.9	168.4	174.0	168.4	159.9	152.3	145.4	152.3	159.9
65.5°	119.7	127.3	134.2	142.2	147.5	142.2	134.2	127.3	119.7	127.3	134.2
66°	95.9	105.2	110.4	118.4	123.3	118.4	110.4	105.2	95.9	105.2	110.4





TEST NUMBER: P776453

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	36.7	49.6	55.2	62.0	65.7	62.0	55.2	49.6	36.7	49.6	55.2
68°	21.4	34.2	41.9	46.7	51.2	46.7	41.9	34.2	21.4	34.2	41.9
68.5°	8.1	23.0	30.2	35.5	40.7	35.5	30.2	23.0	8.1	23.0	30.2
69°	4.0	13.7	19.3	24.6	30.2	24.6	19.3	13.7	4.0	13.7	19.3
69.5°	2.4	6.0	10.9	16.1	21.8	16.1	10.9	6.0	2.4	6.0	10.9
70°	1.2	2.8	6.0	9.3	13.3	9.3	6.0	2.8	1.2	2.8	6.0
70.5°	0.4	1.6	3.6	4.4	5.2	4.4	3.6	1.6	0.4	1.6	3.6
71°	0.4	0.8	2.0	2.4	2.0	2.4	2.0	0.8	0.4	0.8	2.0
71.5°	0.4	0.4	1.2	1.2	0.4	1.2	1.2	0.4	0.4	0.4	1.2
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°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
73.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.0	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: P776453  
CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMB-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: P776453

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1886.3	1886.3	1886.3	1886.3	1886.3	1886.3
0.5°	1886.3	1885.9	1886.3	1886.3	1886.3	1886.3
1°	1885.9	1885.5	1885.9	1886.3	1886.3	1886.3
1.5°	1885.9	1885.5	1885.9	1885.9	1885.9	1885.9
2°	1885.0	1884.6	1885.0	1885.5	1885.5	1885.5
2.5°	1884.6	1883.8	1884.6	1884.6	1884.6	1884.2
3°	1883.8	1883.0	1883.8	1883.8	1883.8	1883.4
3.5°	1882.6	1882.2	1882.6	1882.6	1882.6	1882.6
4°	1881.4	1880.6	1881.4	1881.4	1881.4	1881.4
4.5°	1880.2	1879.4	1880.2	1880.2	1880.2	1880.2
5°	1878.6	1877.8	1878.6	1878.6	1878.6	1878.6
5.5°	1877.0	1876.2	1877.0	1877.0	1877.0	1877.0
6°	1875.0	1874.6	1875.0	1875.0	1875.4	1875.0
6.5°	1873.0	1872.6	1873.0	1873.4	1873.4	1873.0
7°	1870.9	1870.5	1870.9	1870.9	1870.9	1870.9
7.5°	1868.9	1868.1	1868.9	1868.5	1868.5	1868.5
8°	1866.1	1865.7	1866.1	1866.1	1866.1	1866.1
8.5°	1863.7	1862.9	1863.7	1863.7	1863.7	1863.7
9°	1860.9	1860.5	1860.9	1860.9	1860.9	1860.9
9.5°	1858.1	1857.3	1858.1	1858.1	1858.1	1857.7
10°	1854.8	1854.4	1854.8	1854.8	1854.8	1854.8
10.5°	1851.6	1851.2	1851.6	1851.6	1851.6	1851.6
11°	1848.4	1847.6	1848.4	1848.0	1848.0	1848.0
11.5°	1844.8	1844.0	1844.8	1844.4	1844.4	1844.4
12°	1840.7	1840.3	1840.7	1840.7	1840.7	1840.7
12.5°	1837.1	1836.3	1837.1	1836.7	1836.7	1836.7
13°	1832.7	1832.3	1832.7	1832.7	1832.7	1832.7
13.5°	1828.6	1827.8	1828.6	1828.6	1828.6	1828.2
14°	1824.2	1823.4	1824.2	1824.2	1824.2	1823.8
14.5°	1819.4	1819.0	1819.4	1819.4	1819.4	1819.4
15°	1814.9	1814.1	1814.9	1814.5	1814.5	1814.5
15.5°	1809.7	1809.3	1809.7	1809.7	1809.7	1809.7
16°	1804.9	1804.1	1804.9	1804.9	1804.9	1804.5
16.5°	1799.6	1799.2	1799.6	1799.6	1799.2	1799.2
17°	1794.0	1793.6	1794.0	1794.4	1794.0	1794.0
17.5°	1788.8	1788.4	1788.8	1788.8	1788.4	1788.4
18°	1782.7	1782.3	1782.7	1782.7	1782.7	1782.7
18.5°	1777.1	1776.3	1777.1	1777.1	1776.7	1776.7
19°	1771.0	1770.2	1771.0	1771.0	1770.6	1770.6
19.5°	1764.6	1764.2	1764.6	1764.6	1764.6	1764.6
20°	1758.1	1757.7	1758.1	1758.1	1758.1	1758.1
20.5°	1751.7	1750.9	1751.7	1751.7	1751.7	1751.3
21°	1744.8	1744.4	1744.8	1744.8	1744.8	1744.8

TEST NUMBER: P776453

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1723.9	1723.1	1723.9	1723.9	1723.9	1723.5
23°	1716.2	1715.8	1716.2	1716.2	1716.2	1716.2
23.5°	1709.0	1708.2	1709.0	1709.0	1709.0	1708.6
24°	1700.9	1700.5	1700.9	1701.3	1700.9	1700.9
24.5°	1693.3	1692.5	1693.3	1693.7	1693.3	1692.9
25°	1685.2	1684.4	1685.2	1685.6	1685.2	1685.2
25.5°	1677.2	1676.4	1677.2	1677.6	1677.2	1676.8
26°	1668.7	1667.9	1668.7	1669.1	1668.7	1668.7
26.5°	1660.2	1659.4	1660.2	1660.6	1660.6	1660.2
27°	1651.8	1651.0	1651.8	1652.2	1651.8	1651.8
27.5°	1642.9	1642.1	1642.9	1643.3	1643.3	1642.9
28°	1634.1	1633.3	1634.1	1634.5	1634.5	1634.1
28.5°	1625.2	1624.4	1625.2	1625.6	1625.2	1625.2
29°	1615.9	1614.7	1615.9	1616.3	1616.3	1615.9
29.5°	1606.7	1605.5	1606.7	1607.1	1607.1	1606.7
30°	1597.0	1596.2	1597.0	1597.8	1597.8	1597.4
30.5°	1587.7	1586.5	1587.7	1588.1	1588.1	1588.1
31°	1577.7	1576.9	1577.7	1578.9	1578.5	1578.1
31.5°	1568.0	1566.8	1568.0	1568.8	1568.8	1568.4
32°	1558.3	1556.7	1558.3	1559.1	1559.1	1558.7
32.5°	1547.8	1546.6	1547.8	1549.1	1549.1	1548.6
33°	1538.2	1536.6	1538.2	1539.0	1539.0	1538.2
33.5°	1527.7	1526.1	1527.7	1528.9	1528.5	1528.1
34°	1517.2	1516.0	1517.2	1518.4	1518.0	1517.6
34.5°	1506.8	1505.5	1506.8	1508.0	1507.6	1507.2
35°	1496.3	1494.7	1496.3	1497.5	1497.1	1496.7
35.5°	1485.4	1483.8	1485.4	1486.6	1486.6	1485.8
36°	1474.5	1472.9	1474.5	1476.1	1475.7	1475.3
36.5°	1463.6	1462.0	1463.6	1465.3	1464.9	1464.4
37°	1452.4	1451.2	1452.4	1454.0	1453.6	1453.2
37.5°	1441.1	1439.5	1441.1	1443.1	1442.7	1441.9
38°	1429.8	1428.6	1429.8	1431.8	1431.0	1430.6
38.5°	1418.5	1416.9	1418.5	1420.1	1419.7	1418.9
39°	1406.8	1405.2	1406.8	1408.9	1408.4	1407.6
39.5°	1395.2	1393.1	1395.2	1396.8	1396.4	1396.0
40°	1383.1	1381.1	1383.1	1384.7	1384.7	1383.9
40.5°	1370.6	1369.0	1370.6	1372.6	1372.2	1371.8
41°	1358.5	1356.5	1358.5	1360.5	1360.1	1359.3
41.5°	1345.6	1344.0	1345.6	1347.6	1347.2	1346.8
42°	1332.7	1330.7	1332.7	1334.7	1334.3	1333.9
42.5°	1319.4	1317.4	1319.4	1321.4	1321.4	1320.6
43°	1305.7	1303.7	1305.7	1307.7	1307.7	1307.3
43.5°	1291.6	1289.6	1291.6	1293.6	1293.6	1293.2



TEST NUMBER: P776453

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1246.1	1244.1	1246.1	1248.1	1248.5	1248.5
45.5°	1229.6	1227.6	1229.6	1232.0	1232.4	1232.4
46°	1212.7	1210.2	1212.7	1215.1	1215.9	1215.9
46.5°	1194.5	1192.9	1194.5	1197.3	1198.1	1198.1
47°	1176.0	1174.0	1176.0	1178.4	1179.6	1179.6
47.5°	1156.7	1154.6	1156.7	1159.1	1160.3	1160.3
48°	1136.9	1135.3	1136.9	1139.3	1140.1	1140.1
48.5°	1116.8	1115.2	1116.8	1118.4	1119.2	1119.2
49°	1095.4	1094.6	1095.4	1096.6	1097.0	1097.0
49.5°	1073.7	1073.3	1073.7	1074.9	1074.5	1074.9
50°	1051.5	1051.1	1051.5	1052.3	1051.5	1051.1
50.5°	1028.9	1028.9	1028.9	1029.3	1028.1	1026.5
51°	1006.4	1007.2	1006.4	1005.2	1004.0	1003.2
51.5°	983.4	984.6	983.4	982.2	980.6	980.2
52°	961.3	963.3	961.3	959.6	958.0	957.2
52.5°	940.3	941.9	940.3	938.3	936.3	935.5
53°	919.4	921.0	919.4	917.7	915.7	914.9
53.5°	898.0	899.2	898.0	897.2	896.4	895.6
54°	876.3	876.3	876.3	876.7	876.7	877.5
54.5°	852.9	851.3	852.9	854.9	856.5	857.3
55°	827.9	825.5	827.9	830.7	833.1	834.8
55.5°	801.3	798.9	801.3	803.7	806.2	808.2
56°	772.3	769.5	772.3	774.7	777.1	778.4
56.5°	741.3	739.3	741.3	743.7	744.5	745.7
57°	708.3	705.8	708.3	710.3	710.7	711.5
57.5°	673.2	671.6	673.2	675.2	675.2	675.2
58°	638.2	636.5	638.2	639.4	639.0	638.6
58.5°	601.9	600.3	601.9	602.3	601.1	601.1
59°	565.2	564.8	565.2	564.8	563.6	562.8
59.5°	529.0	529.0	529.0	527.4	525.3	524.5
60°	493.1	492.7	493.1	489.9	487.5	485.9
60.5°	456.5	456.9	456.5	452.8	449.6	447.6
61°	420.2	421.4	420.2	416.2	412.9	410.5
61.5°	384.3	386.8	384.3	380.7	376.3	374.3
62°	350.1	353.3	350.1	345.7	340.8	338.0
62.5°	316.7	319.9	316.7	311.8	305.4	302.2
63°	284.0	287.7	284.0	278.8	271.5	267.9
63.5°	253.0	259.0	253.0	246.6	238.9	235.3
64°	224.0	230.8	224.0	215.5	207.9	203.9
64.5°	195.8	202.2	195.8	186.9	178.9	173.6
65°	168.4	174.0	168.4	159.9	152.3	145.4
65.5°	142.2	147.5	142.2	134.2	127.3	119.7
66°	118.4	123.3	118.4	110.4	105.2	95.9



TEST NUMBER: P776453

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	62.0	65.7	62.0	55.2	49.6	36.7
68°	46.7	51.2	46.7	41.9	34.2	21.4
68.5°	35.5	40.7	35.5	30.2	23.0	8.1
69°	24.6	30.2	24.6	19.3	13.7	4.0
69.5°	16.1	21.8	16.1	10.9	6.0	2.4
70°	9.3	13.3	9.3	6.0	2.8	1.2
70.5°	4.4	5.2	4.4	3.6	1.6	0.4
71°	2.4	2.0	2.4	2.0	0.8	0.4
71.5°	1.2	0.4	1.2	1.2	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	0.0	0.0	0.0
73.5°	0.0	0.0	0.0	0.0	0.0	0.0
74°	0.0	0.0	0.0	0.0	0.0	0.0
74.5°	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0
75.5°	0.0	0.0	0.0	0.0	0.0	0.0
76°	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
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: P776453  
CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMB-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



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Peachtree City, GA 30269

Scaled Data Report





21.5°	1738.0	1738.0	1738.0	1738.0	1737.2	1738.0	1738.0	1738.0	1738.0	1738.0	1738.0	1738.0
22°	1730.7	1730.7	1731.2	1731.2	1730.3	1731.2	1731.2	1730.7	1730.7	1730.7	1730.7	1731.2



44°	1278.7	1279.1	1278.7	1276.7	1275.1	1276.7	1278.7	1279.1	1278.7	1279.1	1278.7
44.5°	1263.8	1264.2	1264.2	1261.8	1259.4	1261.8	1264.2	1264.2	1263.8	1264.2	1264.2



66.5°	75.7	85.0	89.4	97.1	101.5	97.1	89.4	85.0	75.7	85.0	89.4
67°	56.0	65.3	71.7	78.2	81.8	78.2	71.7	65.3	56.0	65.3	71.7



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°	1738.0	1737.2	1738.0	1738.0	1738.0	1738.0
22°	1731.2	1730.3	1731.2	1731.2	1730.7	1730.7



44°	1276.7	1275.1	1276.7	1278.7	1279.1	1278.7
44.5°	1261.8	1259.4	1261.8	1264.2	1264.2	1263.8



66.5°	97.1	101.5	97.1	89.4	85.0	75.7
67°	78.2	81.8	78.2	71.7	65.3	56.0

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

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Scaled Data Report



(END OF REPORT)