

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P198431

Luminaire Tested: **TT-C4-LED-E1-CQ-MS/DIM-UPL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P198431
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (P27139) AND DOWNLIGHT
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: TT-C4-LED-E1-CQ-MS/DIM-UPL
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
CONCENTRATED DISTRIBUTION WITH DIMMING OCCUPANCY SENSOR
Light Source: (160) 4000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8183.4 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')
IES Classification: Type V - Short - Semi-Cutoff
BUG Rating: B2 - U4 - G1

Input Watts (W): 75.4
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: 25 FT

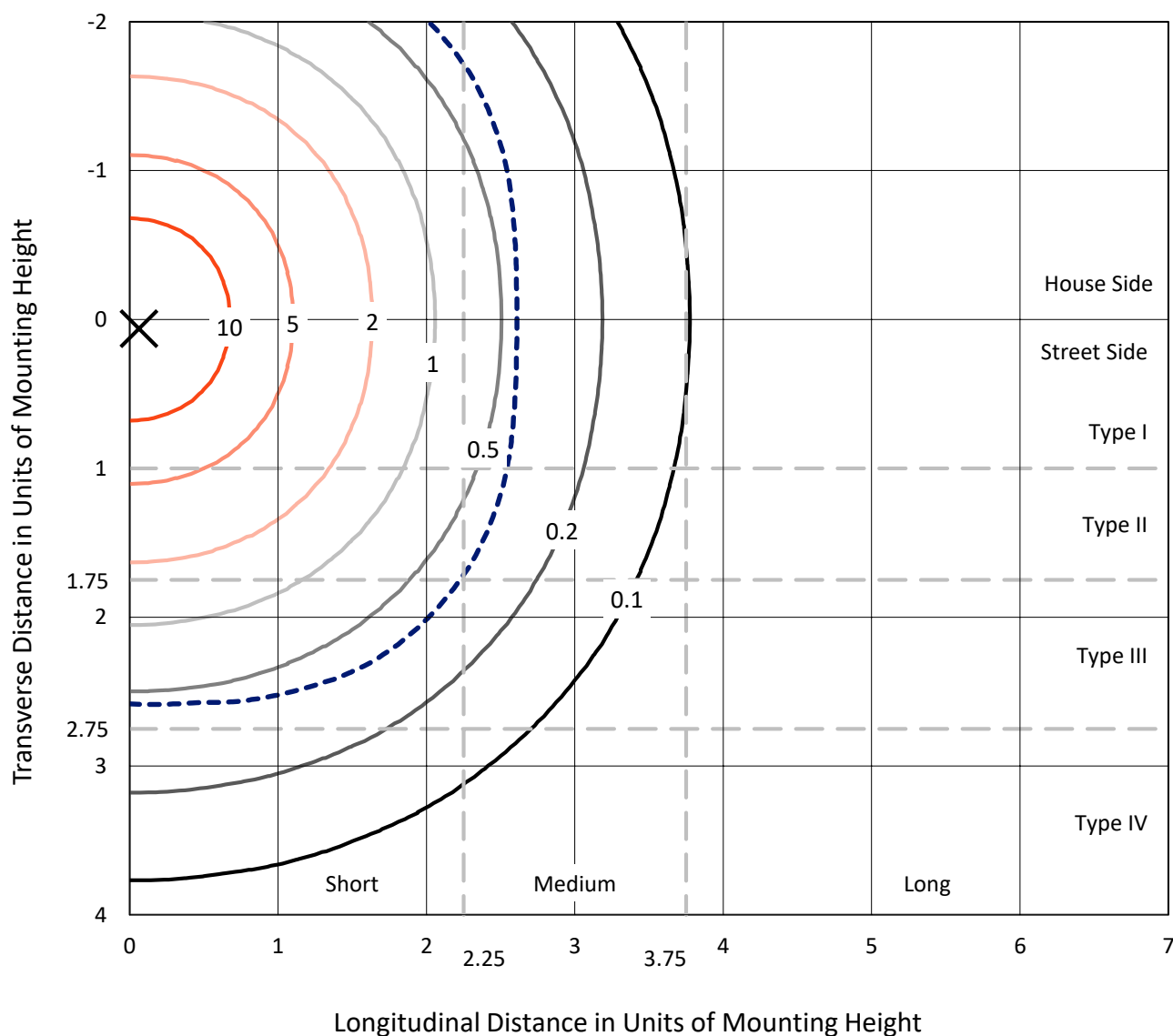


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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd
 - - - 1/2 Max cd

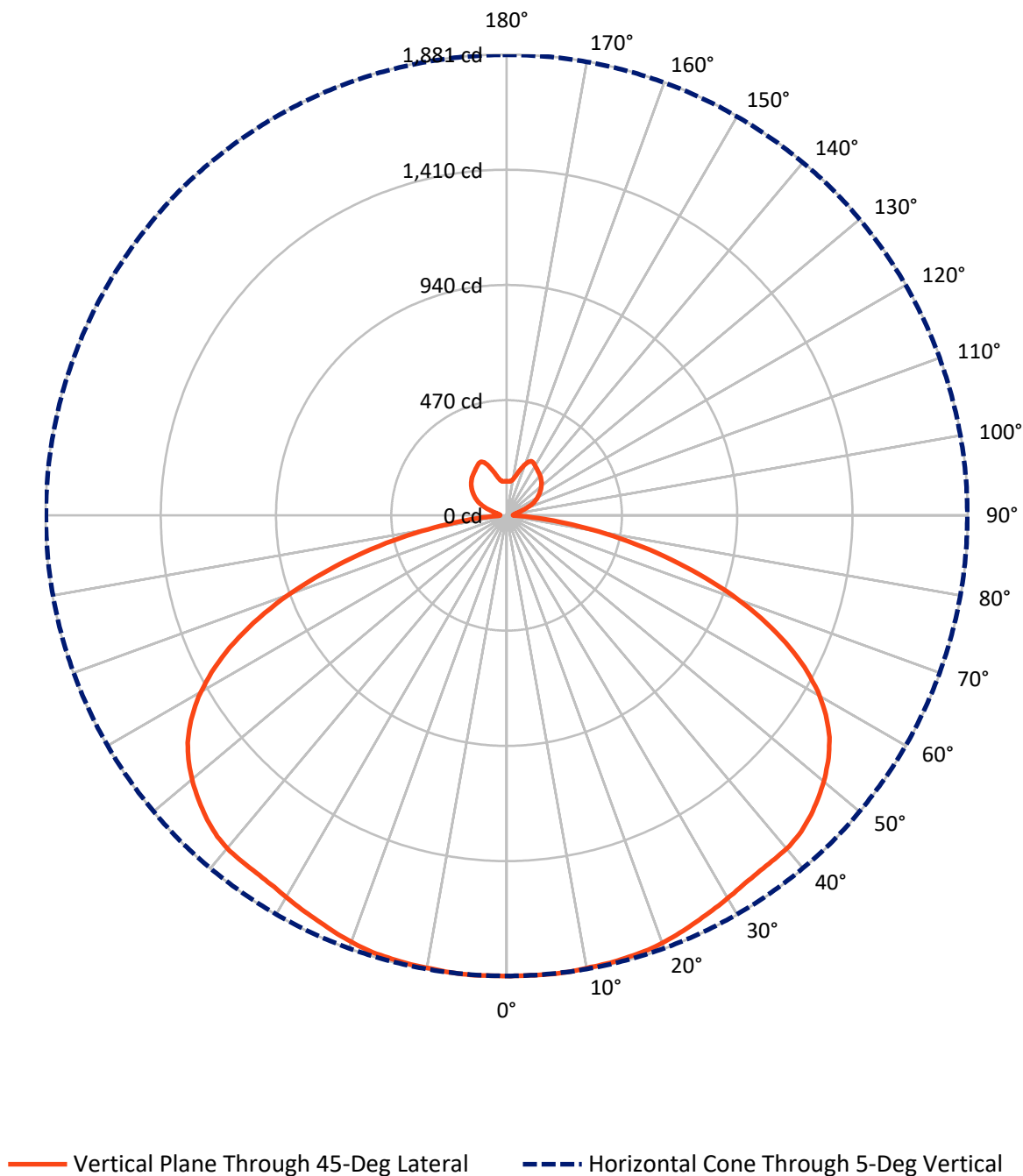


Based on 10 foot mounting height. Maximum calculated value = 18.8 fc
 Type V - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



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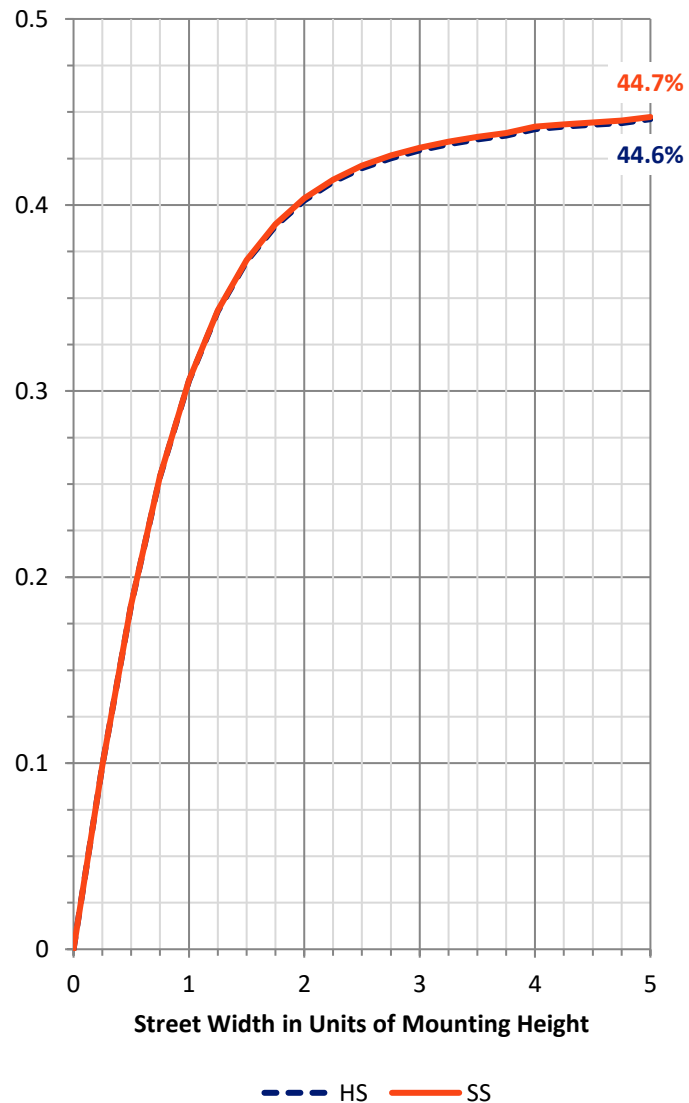
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3679.7	412.0	4091.7
	% Fixture	45.0	5.0	50.0
Street Side	Lumens	3679.7	412.0	4091.7
	% Fixture	45.0	5.0	50.0
Total	Lumens	7359.4	824.0	8183.4
	% Fixture	89.9	10.1	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.2	2.2
10°-20°	528.6	6.5
20°-30°	843.6	10.3
30°-40°	1111.2	13.6
40°-50°	1321.8	16.2
50°-60°	1383.4	16.9
60°-70°	1176.4	14.4
70°-80°	668.5	8.2
80°-90°	146.5	1.8
90°-100°	38.3	0.5
100°-110°	59.4	0.7
110°-120°	119.3	1.5
120°-130°	148.7	1.8
130°-140°	153.2	1.9
140°-150°	136.0	1.7
150°-160°	103.7	1.3
160°-170°	51.8	0.6
170°-180°	13.6	0.2
0°-90°	7359.4	89.9
0°-180°	8183.4	100.0

Coefficient of Utilization



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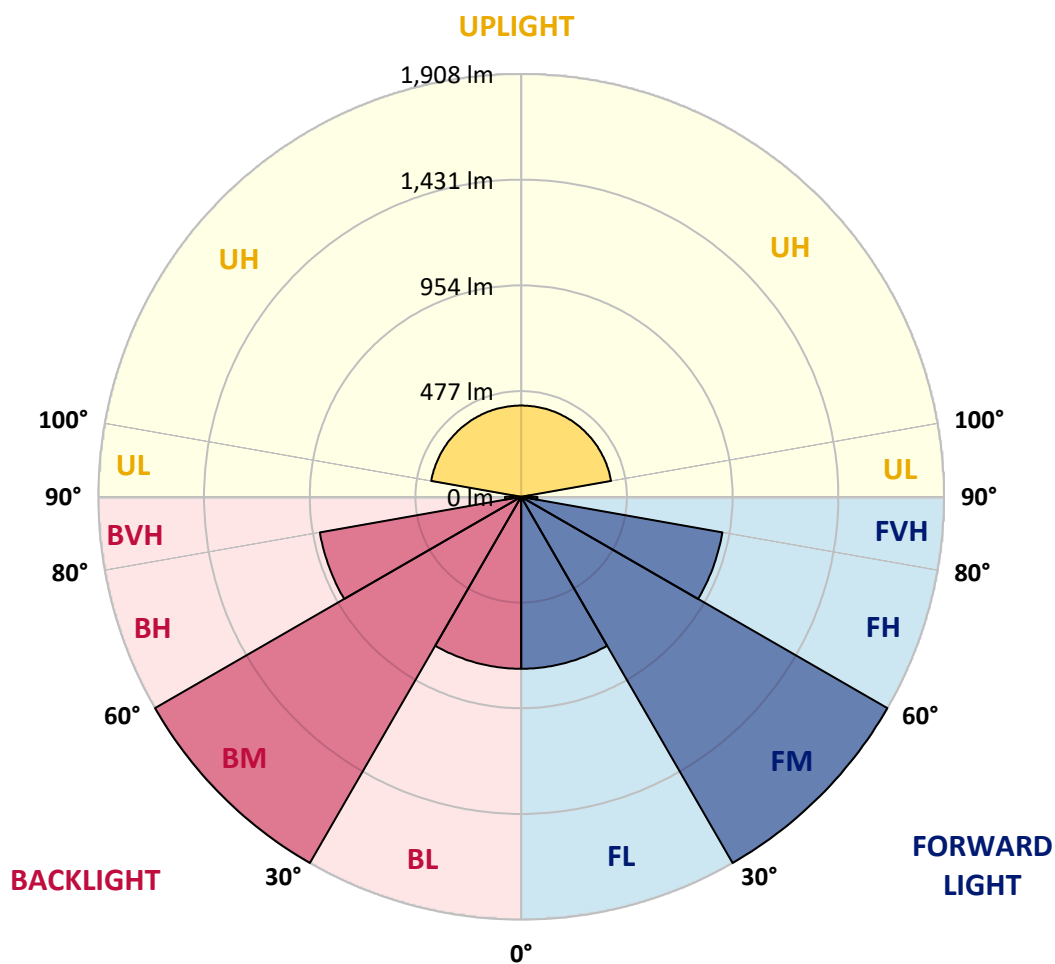
CATALOG NUMBER: TT-C4-LED-E1-CQ-MS/DIM-UPL

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	775.8	9.5			
FM	(30°-60°)	1908.2	23.3			
FH	(60°-80°)	922.5	11.3			G1/1800
FVH	(80°-90°)	73.3	0.9			G1/100
BL	(0°-30°)	775.8	9.5	B2/1000		
BM	(30°-60°)	1908.2	23.3	B2/2500		
BH	(60°-80°)	922.5	11.3	B2/1000		G1/1800
BVH	(80°-90°)	73.3	0.9			G1/100
UL	(90°-100°)	38.3	0.5		U2/50	
UH	(100°-180°)	412.0	5.0		U3/500	

BUG Rating: B2-U4-G1

Type V Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2
2.5°	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2
5°	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1880.6	1879.2
7.5°	1877.7	1877.7	1877.7	1877.7	1879.2	1877.7	1877.7	1879.2	1879.2	1879.2	1879.2
10°	1874.8	1873.4	1873.4	1874.8	1874.8	1874.8	1874.8	1874.8	1876.3	1874.8	1874.8
12.5°	1870.5	1869.0	1870.5	1870.5	1870.5	1871.9	1871.9	1871.9	1873.4	1873.4	1871.9
15°	1866.1	1866.1	1866.1	1866.1	1866.1	1867.6	1867.6	1869.0	1869.0	1869.0	1869.0
17.5°	1860.3	1860.3	1860.3	1861.8	1861.8	1863.2	1863.2	1863.2	1864.7	1864.7	1864.7
20°	1850.2	1848.7	1850.2	1850.2	1851.6	1853.1	1853.1	1854.5	1854.5	1854.5	1854.5
22.5°	1835.7	1835.7	1837.1	1837.1	1838.6	1840.0	1840.0	1841.5	1841.5	1841.5	1841.5
25°	1821.2	1822.6	1822.6	1824.1	1824.1	1825.5	1827.0	1827.0	1827.0	1827.0	1827.0
27.5°	1806.7	1808.1	1808.1	1808.1	1809.6	1811.0	1812.5	1813.9	1815.4	1813.9	1813.9
30°	1790.7	1790.7	1792.2	1793.6	1795.1	1796.5	1799.4	1800.9	1802.3	1800.9	1800.9
32.5°	1773.3	1774.8	1776.2	1777.7	1780.6	1783.5	1786.4	1787.8	1789.3	1787.8	1787.8
35°	1760.3	1760.3	1763.2	1766.1	1769.0	1773.3	1776.2	1779.1	1782.0	1780.6	1779.1
37.5°	1747.2	1747.2	1750.1	1754.5	1760.3	1766.1	1771.9	1776.2	1777.7	1777.7	1776.2
40°	1731.3	1732.7	1735.6	1742.9	1751.6	1758.8	1766.1	1771.9	1774.8	1774.8	1771.9
42.5°	1713.9	1715.3	1719.7	1726.9	1737.1	1745.8	1754.5	1758.8	1763.2	1763.2	1760.3
45°	1689.2	1690.7	1696.5	1703.7	1713.9	1722.6	1732.7	1737.1	1742.9	1741.4	1740.0
47.5°	1657.3	1658.8	1664.6	1671.8	1682.0	1692.1	1702.3	1709.5	1713.9	1713.9	1712.4
50°	1618.2	1619.6	1625.4	1632.7	1645.7	1657.3	1667.5	1674.7	1682.0	1682.0	1680.5
52.5°	1568.9	1571.8	1576.1	1586.3	1600.8	1613.8	1626.9	1638.5	1642.8	1644.3	1642.8
55°	1508.0	1510.9	1516.7	1528.3	1544.2	1560.2	1574.7	1587.7	1593.5	1597.9	1595.0
57.5°	1436.9	1439.8	1447.1	1460.1	1477.5	1493.5	1512.3	1526.8	1531.2	1535.5	1534.1
60°	1352.8	1357.2	1364.4	1378.9	1396.3	1413.7	1431.1	1448.5	1452.9	1458.7	1455.8
62.5°	1254.2	1258.6	1265.8	1281.8	1300.6	1316.6	1336.9	1352.8	1357.2	1363.0	1361.5
65°	1141.1	1145.5	1152.7	1170.1	1187.5	1204.9	1223.8	1241.2	1245.5	1251.3	1249.9
67.5°	1012.1	1016.4	1023.7	1044.0	1061.4	1078.8	1094.7	1112.1	1115.0	1120.8	1119.4
70°	875.8	881.6	887.4	906.2	922.2	936.7	954.1	968.6	974.4	977.3	974.4
72.5°	739.5	743.8	749.6	762.7	774.3	787.3	804.7	814.9	819.2	820.7	820.7
75°	598.8	603.2	603.2	617.7	626.4	633.6	648.1	655.4	658.3	661.2	661.2
77.5°	465.4	462.5	465.4	471.2	477.0	482.8	491.5	495.9	498.8	504.6	501.7
80°	326.2	327.7	329.1	333.5	336.4	337.8	343.6	345.1	346.5	352.3	349.4
82.5°	210.2	207.3	210.2	208.8	211.7	207.3	210.2	214.6	211.7	214.6	216.0
85°	110.2	105.8	105.8	107.3	108.7	105.8	107.3	105.8	105.8	108.7	107.3
87.5°	34.8	33.3	34.8	33.3	34.8	33.3	34.8	36.2	34.8	34.8	36.2
90°	36.0	36.0	36.0	36.0	35.0	34.0	31.0	29.0	27.0	26.0	26.0
92.5°	40.0	39.0	39.0	38.0	36.0	34.0	32.0	29.0	27.0	27.0	27.0
95°	44.0	43.0	42.0	41.0	38.0	36.0	34.0	32.0	31.0	30.0	30.0
97.5°	42.0	42.0	41.0	40.0	38.0	37.0	36.0	35.0	34.0	33.0	32.0
100°	45.0	45.0	45.0	44.0	42.0	40.0	39.0	38.0	36.0	36.0	35.0
102.5°	51.0	51.0	50.0	49.0	47.0	46.0	45.0	44.0	42.0	42.0	42.0
105°	60.0	60.0	59.0	57.0	55.0	54.0	53.0	53.0	51.0	52.0	52.0
107.5°	72.0	72.0	72.0	70.0	68.0	67.0	66.0	66.0	66.0	68.0	68.0
110°	86.0	86.0	87.0	89.0	86.0	85.0	85.0	86.0	86.0	87.0	86.0

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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	101.0	102.0	104.0	108.0	106.0	107.0	107.0	110.0	108.0	107.0	103.0
115°	121.0	122.0	123.0	128.0	126.0	128.0	127.0	129.0	126.0	124.0	120.0
117.5°	140.0	141.0	141.0	144.0	141.0	141.0	140.0	141.0	138.0	136.0	135.0
120°	152.0	153.0	154.0	155.0	151.0	149.0	147.0	149.0	147.0	147.0	148.0
122.5°	161.0	162.0	163.0	164.0	159.0	154.0	153.0	155.0	156.0	158.0	158.0
125°	169.0	169.0	170.0	172.0	168.0	163.0	160.0	165.0	166.0	168.0	167.0
127.5°	177.0	177.0	179.0	181.0	177.0	171.0	170.0	176.0	177.0	178.0	175.0
130°	187.0	188.0	190.0	191.0	185.0	179.0	179.0	186.0	187.0	186.0	183.0
132.5°	198.0	199.0	200.0	201.0	193.0	186.0	187.0	193.0	195.0	195.0	191.0
135°	210.0	210.0	211.0	209.0	199.0	192.0	193.0	199.0	202.0	201.0	197.0
137.5°	221.0	219.0	217.0	213.0	203.0	197.0	198.0	205.0	207.0	208.0	203.0
140°	229.0	226.0	222.0	216.0	205.0	200.0	201.0	207.0	210.0	213.0	212.0
142.5°	235.0	231.0	225.0	218.0	206.0	201.0	202.0	208.0	212.0	218.0	218.0
145°	235.0	230.0	225.0	218.0	207.0	202.0	204.0	211.0	215.0	223.0	225.0
147.5°	230.0	227.0	223.0	219.0	210.0	207.0	209.0	216.0	220.0	229.0	233.0
150°	224.0	221.0	219.0	220.0	215.0	214.0	216.0	222.0	227.0	235.0	239.0
152.5°	216.0	214.0	216.0	221.0	220.0	220.0	224.0	230.0	234.0	241.0	241.0
155°	208.0	207.0	211.0	219.0	222.0	224.0	229.0	237.0	239.0	243.0	239.0
157.5°	203.0	203.0	207.0	216.0	220.0	224.0	229.0	234.0	232.0	235.0	230.0
160°	199.0	198.0	203.0	210.0	212.0	213.0	216.0	219.0	216.0	219.0	216.0
162.5°	185.0	184.0	188.0	193.0	194.0	193.0	196.0	198.0	195.0	198.0	196.0
165°	169.0	167.0	169.0	173.0	173.0	173.0	175.0	176.0	174.0	177.0	175.0
167.5°	154.0	152.0	153.0	156.0	156.0	155.0	157.0	159.0	157.0	159.0	158.0
170°	142.0	141.0	142.0	145.0	144.0	144.0	146.0	147.0	146.0	147.0	147.0
172.5°	137.0	135.0	136.0	139.0	139.0	138.0	140.0	141.0	140.0	141.0	140.0
175°	136.0	134.0	135.0	137.0	137.0	137.0	138.0	139.0	138.0	139.0	138.0
177.5°	137.0	136.0	136.0	139.0	138.0	138.0	139.0	140.0	139.0	139.0	138.0
180°	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0

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CATALOG NUMBER: TT-C4-LED-E1-CQ-MS/DIM-UPL

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2
2.5°	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2
5°	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2	1879.2
7.5°	1877.7	1877.7	1877.7	1877.7	1877.7	1877.7	1876.3	1877.7
10°	1874.8	1874.8	1874.8	1874.8	1873.4	1873.4	1873.4	1873.4
12.5°	1871.9	1871.9	1870.5	1870.5	1870.5	1870.5	1869.0	1869.0
15°	1869.0	1867.6	1867.6	1866.1	1866.1	1866.1	1864.7	1866.1
17.5°	1864.7	1863.2	1863.2	1861.8	1861.8	1860.3	1860.3	1860.3
20°	1854.5	1853.1	1853.1	1851.6	1851.6	1850.2	1848.7	1848.7
22.5°	1840.0	1840.0	1840.0	1838.6	1837.1	1837.1	1835.7	1835.7
25°	1827.0	1825.5	1825.5	1824.1	1822.6	1822.6	1821.2	1821.2
27.5°	1813.9	1812.5	1811.0	1808.1	1808.1	1806.7	1805.2	1803.8
30°	1799.4	1796.5	1793.6	1792.2	1790.7	1787.8	1786.4	1784.9
32.5°	1784.9	1782.0	1779.1	1776.2	1771.9	1770.4	1767.5	1767.5
35°	1776.2	1771.9	1767.5	1761.7	1757.4	1753.0	1750.1	1748.7
37.5°	1771.9	1766.1	1758.8	1751.6	1744.3	1738.5	1734.2	1734.2
40°	1766.1	1758.8	1750.1	1740.0	1731.3	1724.0	1719.7	1718.2
42.5°	1754.5	1747.2	1735.6	1726.9	1715.3	1708.1	1702.3	1700.8
45°	1734.2	1726.9	1716.8	1705.2	1693.6	1684.9	1679.1	1677.6
47.5°	1708.1	1699.4	1687.8	1676.2	1664.6	1654.4	1648.6	1647.2
50°	1674.7	1666.0	1654.4	1642.8	1629.8	1619.6	1612.4	1612.4
52.5°	1637.0	1626.9	1613.8	1600.8	1586.3	1576.1	1568.9	1567.4
55°	1587.7	1576.1	1563.1	1548.6	1532.6	1521.0	1512.3	1510.9
57.5°	1526.8	1513.8	1499.3	1483.3	1467.4	1454.3	1444.2	1442.7
60°	1450.0	1435.5	1421.0	1405.0	1387.6	1373.1	1363.0	1360.1
62.5°	1355.7	1339.8	1323.8	1309.3	1290.5	1276.0	1265.8	1262.9
65°	1244.1	1231.0	1215.1	1197.7	1177.4	1162.9	1152.7	1151.3
67.5°	1113.6	1100.5	1084.6	1068.6	1048.3	1035.3	1025.1	1022.2
70°	970.0	958.4	945.4	929.4	912.0	899.0	888.8	887.4
72.5°	817.8	807.6	796.0	784.4	767.0	756.9	748.2	746.7
75°	661.2	651.0	642.3	633.6	620.6	613.3	604.6	604.6
77.5°	501.7	498.8	493.0	482.8	475.6	469.8	465.4	462.5
80°	350.9	348.0	345.1	339.3	334.9	333.5	330.6	327.7
82.5°	214.6	213.1	214.6	211.7	210.2	210.2	208.8	205.9
85°	108.7	110.2	108.7	107.3	107.3	107.3	107.3	105.8
87.5°	34.8	36.2	34.8	33.3	33.3	33.3	33.3	31.9
90°	28.0	30.0	32.0	33.0	34.0	34.0	34.0	34.0
92.5°	28.0	30.0	32.0	33.0	35.0	36.0	36.0	36.0
95°	30.0	32.0	34.0	35.0	37.0	38.0	39.0	38.0
97.5°	33.0	34.0	34.0	35.0	36.0	36.0	36.0	36.0
100°	36.0	37.0	38.0	38.0	38.0	38.0	37.0	37.0
102.5°	43.0	44.0	44.0	42.0	42.0	41.0	41.0	41.0
105°	54.0	54.0	53.0	51.0	49.0	48.0	48.0	49.0
107.5°	68.0	68.0	66.0	63.0	60.0	59.0	59.0	60.0
110°	84.0	83.0	84.0	81.0	78.0	76.0	74.0	75.0

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CATALOG NUMBER: TT-C4-LED-E1-CQ-MS/DIM-UPL

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	102.0	102.0	105.0	103.0	100.0	98.0	95.0	94.0
115°	121.0	123.0	125.0	124.0	123.0	121.0	116.0	113.0
117.5°	138.0	140.0	141.0	139.0	139.0	139.0	133.0	129.0
120°	150.0	151.0	153.0	148.0	148.0	148.0	145.0	142.0
122.5°	159.0	160.0	162.0	156.0	155.0	156.0	153.0	150.0
125°	167.0	167.0	168.0	164.0	163.0	164.0	160.0	158.0
127.5°	176.0	175.0	175.0	173.0	173.0	173.0	166.0	163.0
130°	183.0	182.0	183.0	181.0	184.0	181.0	171.0	169.0
132.5°	190.0	189.0	192.0	189.0	192.0	190.0	179.0	176.0
135°	196.0	197.0	201.0	199.0	199.0	195.0	185.0	184.0
137.5°	203.0	205.0	210.0	207.0	204.0	198.0	191.0	190.0
140°	212.0	214.0	217.0	214.0	209.0	202.0	195.0	195.0
142.5°	220.0	222.0	223.0	217.0	211.0	204.0	198.0	198.0
145°	230.0	230.0	227.0	217.0	211.0	205.0	201.0	202.0
147.5°	239.0	236.0	229.0	218.0	212.0	207.0	204.0	206.0
150°	242.0	240.0	232.0	220.0	214.0	211.0	210.0	211.0
152.5°	242.0	241.0	235.0	223.0	219.0	217.0	215.0	216.0
155°	238.0	237.0	234.0	227.0	224.0	223.0	220.0	219.0
157.5°	228.0	229.0	229.0	226.0	226.0	225.0	222.0	219.0
160°	215.0	217.0	219.0	219.0	221.0	222.0	218.0	215.0
162.5°	196.0	199.0	200.0	201.0	204.0	208.0	207.0	207.0
165°	176.0	179.0	181.0	181.0	185.0	189.0	190.0	192.0
167.5°	160.0	163.0	165.0	164.0	168.0	171.0	172.0	174.0
170°	148.0	150.0	152.0	152.0	155.0	158.0	159.0	160.0
172.5°	141.0	144.0	145.0	144.0	146.0	149.0	149.0	151.0
175°	138.0	140.0	141.0	140.0	141.0	143.0	143.0	144.0
177.5°	138.0	140.0	140.0	138.0	140.0	141.0	141.0	141.0
180°	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0

(END OF REPORT)