

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: P198312

Luminaire Tested: **TT-C2-LED-E1-DL-UPL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P198312
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (P27139) AND DOWNLIGHT
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: TT-C2-LED-E1-DL-UPL
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
DRIVE LANE DISTRIBUTION
Light Source: (160) 4000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4699.3 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U4 - G2

Input Watts (W): 58.8
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



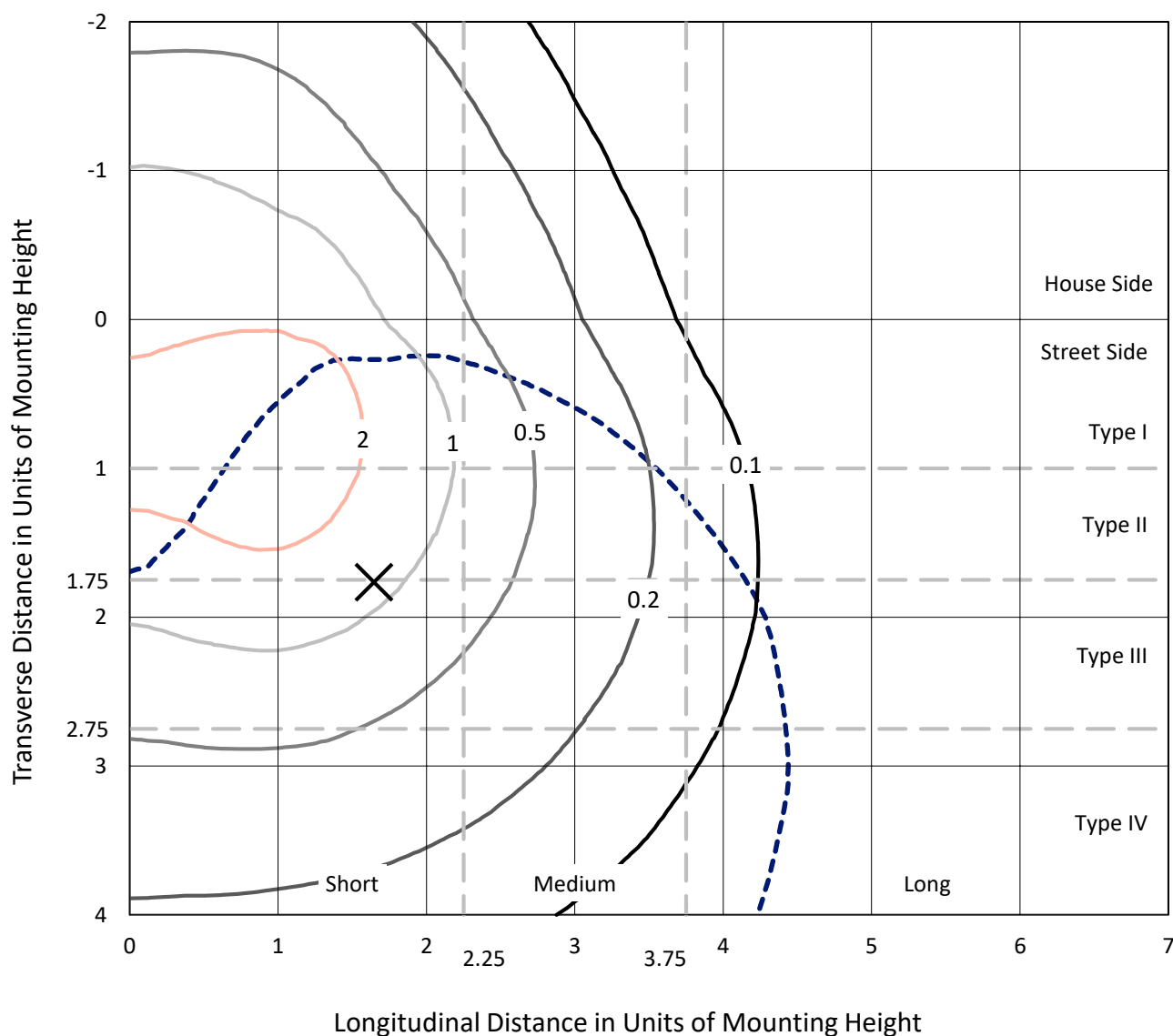
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Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

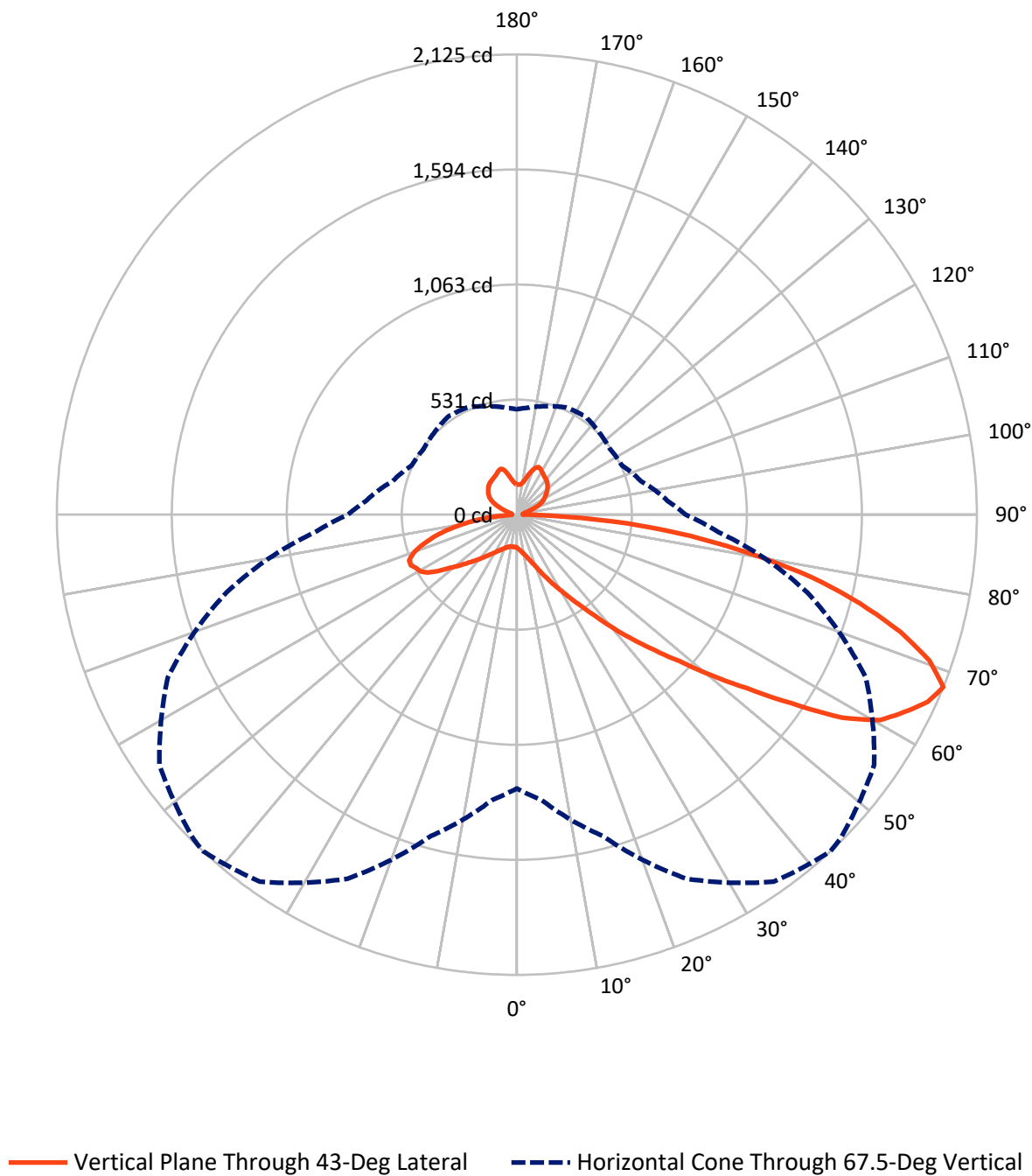


Based on 10 foot mounting height. Maximum calculated value = 3.2 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



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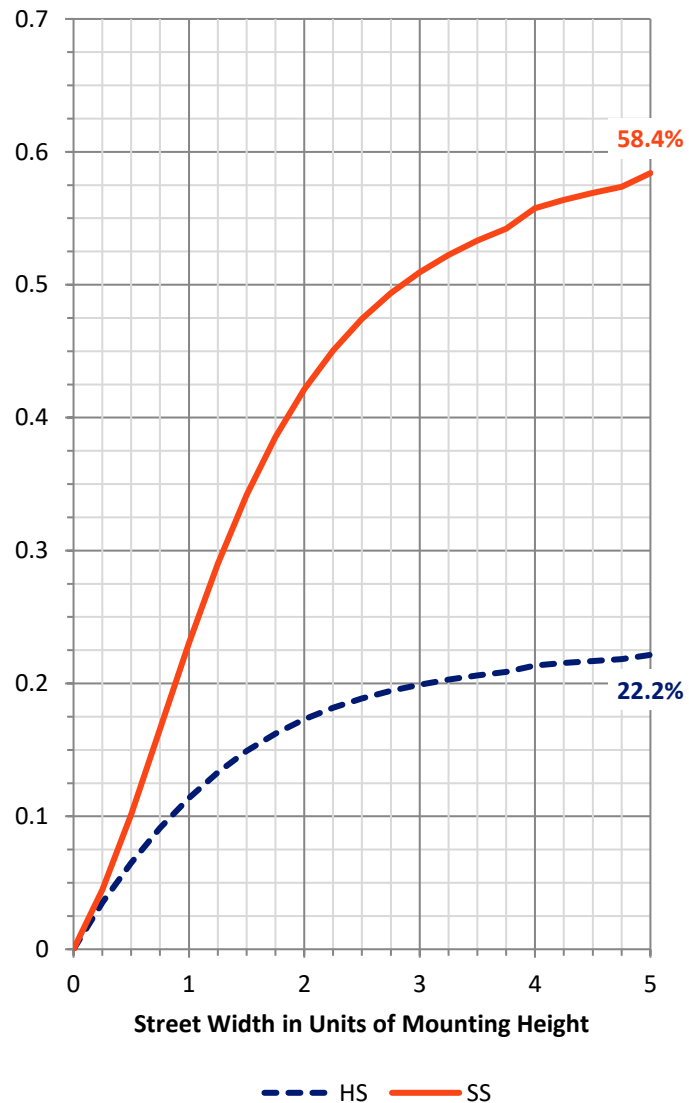
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1065.1	387.3	1452.4
	% Fixture	22.7	8.2	30.9
Street Side	Lumens	2834.3	412.6	3246.9
	% Fixture	60.3	8.8	69.1
Total	Lumens	3899.4	799.9	4699.3
	% Fixture	83.0	17.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.3	0.3
10°-20°	53.2	1.1
20°-30°	116.2	2.5
30°-40°	230.1	4.9
40°-50°	435.6	9.3
50°-60°	773.4	16.5
60°-70°	1071.1	22.8
70°-80°	918.7	19.6
80°-90°	285.8	6.1
90°-100°	36.3	0.8
100°-110°	55.2	1.2
110°-120°	110.8	2.4
120°-130°	144.2	3.1
130°-140°	148.0	3.1
140°-150°	133.4	2.8
150°-160°	102.6	2.2
160°-170°	55.1	1.2
170°-180°	14.3	0.3
0°-90°	3899.4	83.0
0°-180°	4699.3	100.0

Coefficient of Utilization



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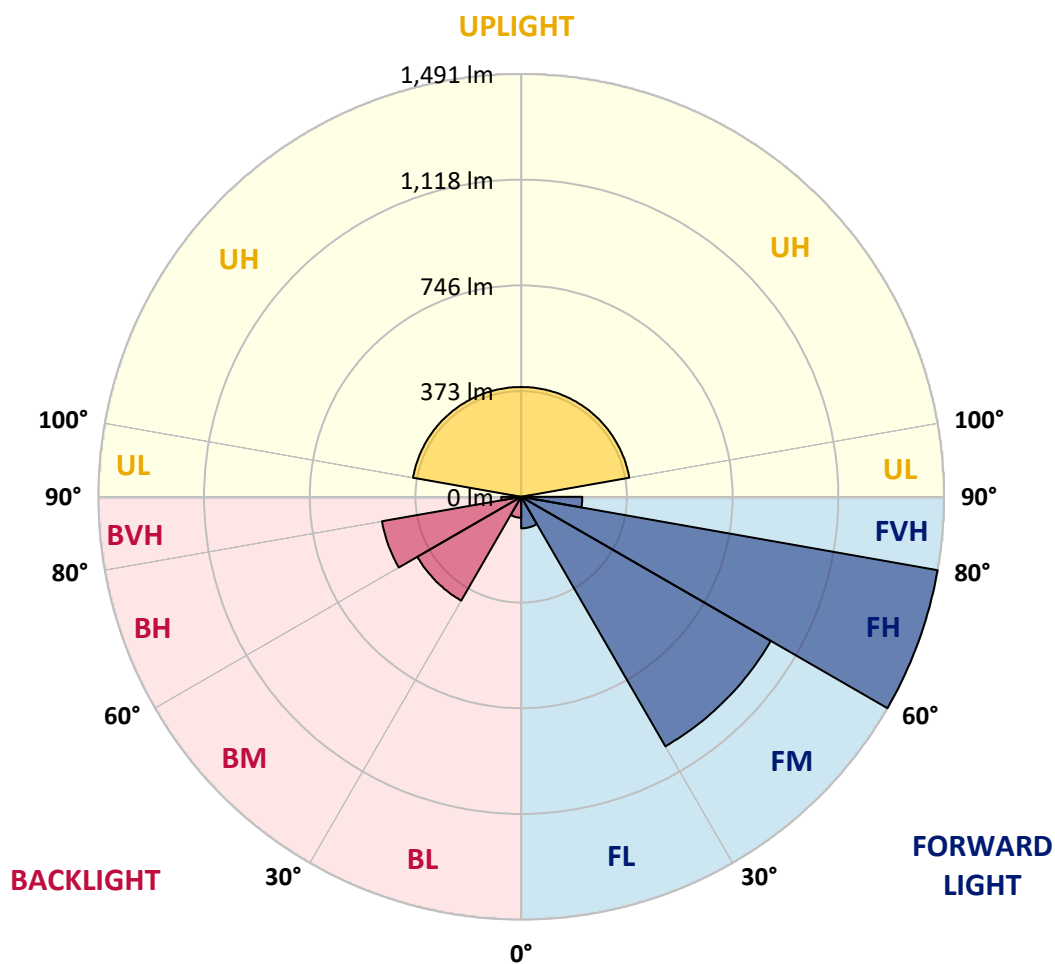
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	111.0	2.4			
FM	(30°-60°)	1016.3	21.6			
FH	(60°-80°)	1491.2	31.7			G1/1800
FVH	(80°-90°)	215.7	4.6			G2/225
BL	(0°-30°)	73.7	1.6	B0/110		
BM	(30°-60°)	422.8	9.0	B1/1000		
BH	(60°-80°)	498.6	10.6	B1/500		G1/500
BVH	(80°-90°)	70.0	1.5			G1/100
UL	(90°-100°)	36.3	0.8		U2/50	
UH	(100°-180°)	387.3	8.2		U3/500	

BUG Rating: B1-U4-G2

Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	43°	45°	55°	65°	75°	85°
0°	152.1	152.1	152.1	152.1	152.1	152.1	152.1	152.1	152.1	152.1	152.1
2.5°	160.6	159.9	159.9	159.9	159.2	158.5	158.5	157.8	157.1	156.4	154.9
5°	169.1	167.7	167.7	167.7	167.0	166.3	165.5	164.1	162.0	159.9	158.5
7.5°	179.0	179.7	179.7	177.6	176.2	174.7	174.0	171.2	168.4	164.8	162.0
10°	191.0	191.7	191.7	190.3	187.5	186.1	184.6	181.8	176.9	171.9	167.7
12.5°	204.5	205.9	206.6	204.5	200.9	198.1	198.8	193.8	187.5	181.1	174.7
15°	224.3	223.6	225.7	221.4	217.9	214.4	213.7	206.6	200.2	191.7	183.9
17.5°	248.3	245.5	245.5	243.4	241.2	235.6	232.8	225.7	215.1	205.2	193.1
20°	273.1	272.4	271.0	269.5	265.3	258.9	259.6	248.3	235.6	221.4	206.6
22.5°	302.1	304.9	300.7	300.7	297.1	292.2	290.1	275.2	258.2	238.4	221.4
25°	333.2	333.9	333.9	335.3	334.6	326.1	321.9	308.5	288.6	262.5	237.7
27.5°	365.1	367.9	367.2	370.7	372.8	367.2	363.6	348.1	319.8	290.8	259.6
30°	400.4	402.6	406.1	414.6	416.7	411.0	408.2	389.8	361.5	320.5	281.6
32.5°	440.8	443.6	447.1	463.4	471.2	464.8	460.6	444.3	408.9	363.6	314.1
35°	485.3	485.3	497.4	517.2	529.2	524.9	526.4	509.4	471.2	414.6	353.7
37.5°	534.8	534.8	550.4	575.2	598.5	599.9	607.7	587.9	541.2	468.3	392.6
40°	578.7	587.9	611.3	643.1	679.9	691.9	695.4	675.6	618.3	532.0	435.8
42.5°	629.6	640.3	669.3	716.7	763.4	789.5	791.0	771.9	712.4	612.7	498.1
45°	681.3	694.7	730.1	790.2	861.7	892.8	893.5	894.2	839.8	708.9	570.9
47.5°	740.0	750.6	797.3	868.8	960.0	1011.0	1028.0	1030.1	955.8	808.6	634.6
50°	803.7	807.2	871.6	972.8	1095.9	1166.6	1176.5	1183.6	1078.9	921.8	701.8
52.5°	869.5	874.4	949.4	1089.5	1244.4	1332.2	1349.1	1352.0	1267.8	1086.0	832.0
55°	937.4	941.6	1038.6	1228.9	1421.3	1536.6	1567.0	1586.1	1453.9	1191.4	884.3
57.5°	1006.7	1017.3	1146.8	1373.9	1616.6	1769.4	1790.6	1761.6	1559.3	1245.1	899.2
60°	1076.1	1095.2	1264.2	1535.9	1809.0	1927.1	1932.8	1852.2	1610.2	1274.9	904.9
62.5°	1141.1	1173.0	1387.3	1685.9	1937.1	2008.5	2008.5	1901.7	1683.1	1371.1	969.9
65°	1206.9	1245.1	1480.0	1792.7	2007.1	2085.6	2094.8	2034.7	1809.0	1429.8	989.0
67.5°	1264.2	1323.0	1536.6	1855.0	2069.4	2125.2	2114.6	2015.6	1778.6	1388.8	936.0
70°	1327.9	1368.2	1577.0	1853.6	2013.5	2022.7	2017.0	1910.2	1682.4	1312.4	868.1
72.5°	1353.4	1385.9	1549.4	1757.4	1854.3	1852.9	1843.0	1748.9	1533.1	1193.5	774.7
75°	1327.2	1325.1	1422.0	1561.4	1636.4	1637.1	1629.3	1549.4	1340.7	1025.1	655.8
77.5°	1185.0	1180.8	1223.2	1308.1	1388.8	1395.8	1382.4	1293.3	1116.4	849.0	548.3
80°	956.5	938.8	970.6	1040.0	1102.2	1095.9	1107.2	1009.6	867.4	655.1	414.6
82.5°	647.3	653.0	692.6	734.4	801.6	807.2	795.2	741.4	627.5	475.4	291.5
85°	334.6	342.4	392.6	457.7	481.1	508.0	505.1	467.6	379.2	275.9	173.3
87.5°	58.7	50.9	71.5	108.2	131.6	157.1	156.4	111.8	87.7	59.4	36.8
90°	36.0	36.0	36.0	34.0	29.0	26.4	26.0	28.0	32.0	34.0	34.0
92.5°	40.0	39.0	38.0	34.0	29.0	27.0	27.0	28.0	32.0	35.0	36.0
95°	44.0	43.0	41.0	36.0	32.0	30.4	30.0	30.0	34.0	37.0	39.0
97.5°	42.0	42.0	40.0	37.0	35.0	33.4	33.0	33.0	34.0	36.0	36.0
100°	45.0	45.0	44.0	40.0	38.0	36.0	36.0	36.0	38.0	38.0	37.0
102.5°	51.0	51.0	49.0	46.0	44.0	42.0	42.0	43.0	44.0	42.0	41.0
105°	60.0	60.0	57.0	54.0	53.0	51.6	52.0	54.0	53.0	49.0	48.0
107.5°	72.0	72.0	70.0	67.0	66.0	67.2	68.0	68.0	66.0	60.0	59.0
110°	86.0	86.0	89.0	85.0	86.0	86.6	87.0	84.0	84.0	78.0	74.0

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	43°	45°	55°	65°	75°	85°
112.5°	101.0	102.0	108.0	107.0	110.0	107.4	107.0	102.0	105.0	100.0	95.0
115°	121.0	122.0	128.0	128.0	129.0	124.8	124.0	121.0	125.0	123.0	116.0
117.5°	140.0	141.0	144.0	141.0	141.0	136.8	136.0	138.0	141.0	139.0	133.0
120°	152.0	153.0	155.0	149.0	149.0	147.0	147.0	150.0	153.0	148.0	145.0
122.5°	161.0	162.0	164.0	154.0	155.0	157.2	158.0	159.0	162.0	155.0	153.0
125°	169.0	169.0	172.0	163.0	165.0	167.2	168.0	167.0	168.0	163.0	160.0
127.5°	177.0	177.0	181.0	171.0	176.0	177.6	178.0	176.0	175.0	173.0	166.0
130°	187.0	188.0	191.0	179.0	186.0	186.4	186.0	183.0	183.0	184.0	171.0
132.5°	198.0	199.0	201.0	186.0	193.0	195.0	195.0	190.0	192.0	192.0	179.0
135°	210.0	210.0	209.0	192.0	199.0	201.4	201.0	196.0	201.0	199.0	185.0
137.5°	221.0	219.0	213.0	197.0	205.0	207.6	208.0	203.0	210.0	204.0	191.0
140°	229.0	226.0	216.0	200.0	207.0	211.8	213.0	212.0	217.0	209.0	195.0
142.5°	235.0	231.0	218.0	201.0	208.0	215.6	218.0	220.0	223.0	211.0	198.0
145°	235.0	230.0	218.0	202.0	211.0	219.8	223.0	230.0	227.0	211.0	201.0
147.5°	230.0	227.0	219.0	207.0	216.0	225.4	229.0	239.0	229.0	212.0	204.0
150°	224.0	221.0	220.0	214.0	222.0	231.8	235.0	242.0	232.0	214.0	210.0
152.5°	216.0	214.0	221.0	220.0	230.0	238.2	241.0	242.0	235.0	219.0	215.0
155°	208.0	207.0	219.0	224.0	237.0	241.4	243.0	238.0	234.0	224.0	220.0
157.5°	203.0	203.0	216.0	224.0	234.0	233.8	235.0	228.0	229.0	226.0	222.0
160°	199.0	198.0	210.0	213.0	219.0	217.8	219.0	215.0	219.0	221.0	218.0
162.5°	185.0	184.0	193.0	193.0	198.0	196.8	198.0	196.0	200.0	204.0	207.0
165°	169.0	167.0	173.0	173.0	176.0	175.8	177.0	176.0	181.0	185.0	190.0
167.5°	154.0	152.0	156.0	155.0	159.0	158.2	159.0	160.0	165.0	168.0	172.0
170°	142.0	141.0	145.0	144.0	147.0	146.6	147.0	148.0	152.0	155.0	159.0
172.5°	137.0	135.0	139.0	138.0	141.0	140.6	141.0	141.0	145.0	146.0	149.0
175°	136.0	134.0	137.0	137.0	139.0	138.6	139.0	138.0	141.0	141.0	143.0
177.5°	137.0	136.0	139.0	138.0	140.0	139.0	139.0	138.0	140.0	140.0	141.0
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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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	152.1	152.1	152.1	152.1	152.1	152.1	152.1	152.1	152.1	152.1	152.1
2.5°	154.9	154.2	153.5	152.1	150.7	150.0	149.3	148.6	148.6	147.9	147.9
5°	157.8	156.4	154.9	152.8	151.4	150.0	148.6	147.9	147.2	146.4	146.4
7.5°	160.6	159.2	156.4	153.5	150.7	149.3	148.6	147.2	146.4	145.7	145.7
10°	165.5	163.4	159.2	154.9	152.1	150.0	147.9	147.2	146.4	146.4	145.7
12.5°	171.2	167.7	162.7	157.8	153.5	150.7	149.3	148.6	147.9	147.9	147.2
15°	179.7	176.2	168.4	161.3	157.8	154.2	152.1	151.4	150.7	151.4	150.7
17.5°	188.2	183.9	174.0	167.0	161.3	158.5	156.4	155.6	154.9	156.4	156.4
20°	199.5	193.1	182.5	173.3	167.0	163.4	162.7	161.3	162.0	162.7	162.7
22.5°	211.5	203.8	191.0	180.4	174.7	170.5	169.8	169.8	169.8	170.5	171.2
25°	226.4	216.5	200.2	189.6	182.5	179.0	178.3	178.3	179.0	179.7	179.7
27.5°	244.8	232.1	212.2	198.8	191.0	187.5	186.8	187.5	188.9	189.6	189.6
30°	266.0	251.2	225.7	211.5	202.3	198.1	198.1	198.8	200.2	201.6	199.5
32.5°	291.5	272.4	244.1	225.0	215.1	210.8	210.8	212.2	211.5	212.2	214.4
35°	324.0	301.4	266.0	243.4	230.6	225.7	225.7	226.4	226.4	227.8	228.5
37.5°	358.7	331.1	289.4	264.6	250.4	243.4	241.2	242.0	243.4	242.7	244.1
40°	396.9	363.6	316.9	285.8	271.0	263.2	258.9	258.9	258.2	257.5	256.8
42.5°	447.8	408.9	350.9	312.7	294.3	285.8	278.7	276.6	275.2	275.9	271.0
45°	512.2	466.9	394.1	352.3	321.9	308.5	301.4	297.1	293.6	290.8	287.9
47.5°	566.7	509.4	433.7	386.3	354.4	338.2	326.9	319.8	312.7	309.9	309.9
50°	625.4	567.4	479.7	418.1	389.8	370.0	358.0	345.2	335.3	329.0	332.5
52.5°	739.3	665.7	549.0	479.0	426.6	404.7	390.5	373.5	360.1	351.6	352.3
55°	772.6	695.4	586.5	519.3	474.0	452.8	430.8	408.2	387.7	375.7	376.4
57.5°	777.5	699.0	593.6	534.8	508.7	494.5	475.4	445.7	419.5	400.4	398.3
60°	774.0	696.9	592.9	533.4	514.3	517.2	511.5	486.0	450.7	427.3	424.5
62.5°	825.6	735.8	623.3	545.5	520.7	524.9	532.0	517.2	482.5	450.7	445.7
65°	829.9	742.8	627.5	561.0	541.9	541.9	546.2	534.8	506.5	474.0	466.2
67.5°	779.6	701.8	594.3	536.3	526.4	537.7	552.5	545.5	517.9	494.5	486.7
70°	723.7	647.3	551.1	495.9	491.0	506.5	530.6	537.0	524.2	505.1	502.3
72.5°	636.0	578.0	488.2	445.0	443.6	459.1	483.9	501.6	505.1	505.8	504.4
75°	548.3	488.9	416.0	383.4	386.3	403.3	425.2	444.3	463.4	479.0	485.3
77.5°	449.2	405.4	347.4	316.2	321.9	341.0	358.7	377.8	397.6	424.5	428.0
80°	344.5	314.8	262.5	249.0	248.3	263.9	285.1	296.4	324.7	346.7	344.5
82.5°	243.4	220.0	190.3	178.3	181.1	191.7	205.2	212.9	233.5	245.5	249.0
85°	143.6	133.7	116.7	105.4	108.2	118.9	121.0	130.9	135.8	143.6	141.5
87.5°	30.4	26.2	23.3	24.1	21.2	21.9	24.8	24.1	24.1	28.3	26.9
90°	34.0	34.0	34.0	32.0	27.0	21.0	25.0	30.0	33.0	34.0	34.0
92.5°	36.0	35.0	33.0	31.0	27.0	23.0	25.0	29.0	34.0	36.0	36.0
95°	38.0	38.0	35.0	33.0	29.0	26.0	27.0	31.0	34.0	35.0	36.0
97.5°	36.0	35.0	35.0	34.0	30.0	25.0	26.0	30.0	33.0	35.0	35.0
100°	37.0	37.0	38.0	38.0	33.0	27.0	28.0	32.0	35.0	36.0	36.0
102.5°	41.0	42.0	43.0	45.0	39.0	32.0	33.0	35.0	38.0	40.0	41.0
105°	49.0	49.0	52.0	54.0	48.0	39.0	38.0	41.0	44.0	48.0	49.0
107.5°	60.0	61.0	65.0	65.0	58.0	50.0	47.0	50.0	54.0	60.0	61.0
110°	75.0	77.0	78.0	75.0	71.0	65.0	60.0	62.0	67.0	73.0	74.0

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CATALOG NUMBER: TT-C2-LED-E1-DL-UPL

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	94.0	94.0	91.0	86.0	84.0	82.0	77.0	80.0	85.0	87.0	87.0
115°	113.0	111.0	104.0	100.0	99.0	102.0	99.0	103.0	106.0	102.0	102.0
117.5°	129.0	128.0	121.0	117.0	116.0	120.0	121.0	125.0	125.0	120.0	120.0
120°	142.0	142.0	137.0	134.0	134.0	137.0	137.0	139.0	139.0	134.0	136.0
122.5°	150.0	153.0	151.0	148.0	149.0	149.0	145.0	148.0	149.0	145.0	146.0
125°	158.0	162.0	162.0	159.0	160.0	159.0	149.0	154.0	156.0	154.0	154.0
127.5°	163.0	169.0	170.0	168.0	168.0	169.0	154.0	158.0	163.0	160.0	161.0
130°	169.0	176.0	178.0	174.0	175.0	175.0	159.0	164.0	169.0	164.0	167.0
132.5°	176.0	182.0	186.0	181.0	183.0	181.0	165.0	171.0	176.0	171.0	174.0
135°	184.0	190.0	195.0	190.0	191.0	187.0	170.0	177.0	184.0	179.0	179.0
137.5°	190.0	196.0	204.0	200.0	199.0	191.0	175.0	182.0	192.0	187.0	187.0
140°	195.0	201.0	213.0	212.0	206.0	195.0	180.0	186.0	200.0	195.0	196.0
142.5°	198.0	204.0	220.0	222.0	212.0	197.0	184.0	190.0	205.0	204.0	205.0
145°	202.0	208.0	225.0	230.0	216.0	199.0	187.0	193.0	208.0	211.0	214.0
147.5°	206.0	212.0	230.0	236.0	219.0	202.0	191.0	195.0	212.0	220.0	225.0
150°	211.0	216.0	231.0	235.0	219.0	205.0	194.0	199.0	215.0	227.0	233.0
152.5°	216.0	220.0	229.0	230.0	220.0	208.0	201.0	205.0	219.0	232.0	239.0
155°	219.0	221.0	224.0	222.0	220.0	213.0	208.0	212.0	224.0	234.0	240.0
157.5°	219.0	219.0	216.0	213.0	216.0	219.0	215.0	220.0	229.0	232.0	235.0
160°	215.0	214.0	210.0	208.0	213.0	223.0	224.0	228.0	233.0	229.0	232.0
162.5°	207.0	207.0	204.0	204.0	209.0	221.0	227.0	231.0	230.0	224.0	226.0
165°	192.0	194.0	196.0	198.0	203.0	212.0	216.0	219.0	220.0	215.0	217.0
167.5°	174.0	177.0	181.0	184.0	189.0	195.0	196.0	199.0	200.0	197.0	200.0
170°	160.0	163.0	166.0	168.0	172.0	177.0	178.0	180.0	181.0	178.0	181.0
172.5°	151.0	153.0	155.0	156.0	159.0	162.0	162.0	164.0	165.0	163.0	166.0
175°	144.0	146.0	147.0	148.0	149.0	151.0	151.0	152.0	153.0	151.0	153.0
177.5°	141.0	142.0	142.0	142.0	143.0	144.0	143.0	144.0	145.0	143.0	145.0
180°	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0

(END OF REPORT)