

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: P198351

Luminaire Tested: **TT-C2-LED-E1-WQ-LWR-LW-UPL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P198351
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-C2-LED-E1-WQ-LWR-LW-UPL
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
WIDE DISTRIBUTION WITH LumaWatt WIRELESS SENSOR
Light Source: (168) 4000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4844.9 lumens
Efficiency: N/A
Efficacy: 94.3 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')
IES Classification: Type V - Short - Non-Cutoff
BUG Rating: B2 - U4 - G2

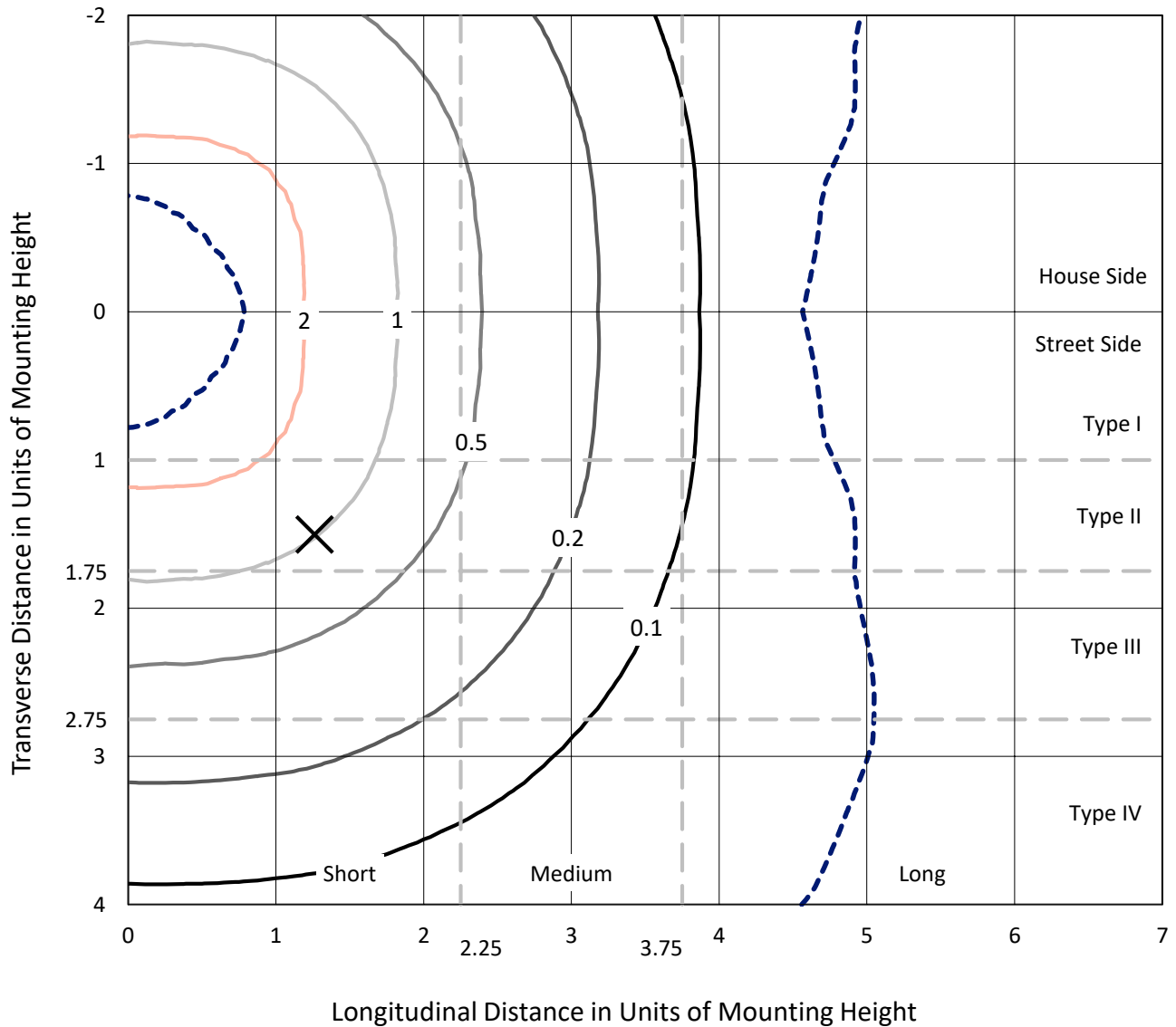
Input Watts (W): 51.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P198351
 CATALOG NUMBER: TT-C2-LED-E1-WQ-LWR-LW-UPL

Iso-Footcandle Lines of Horizontal Illumination

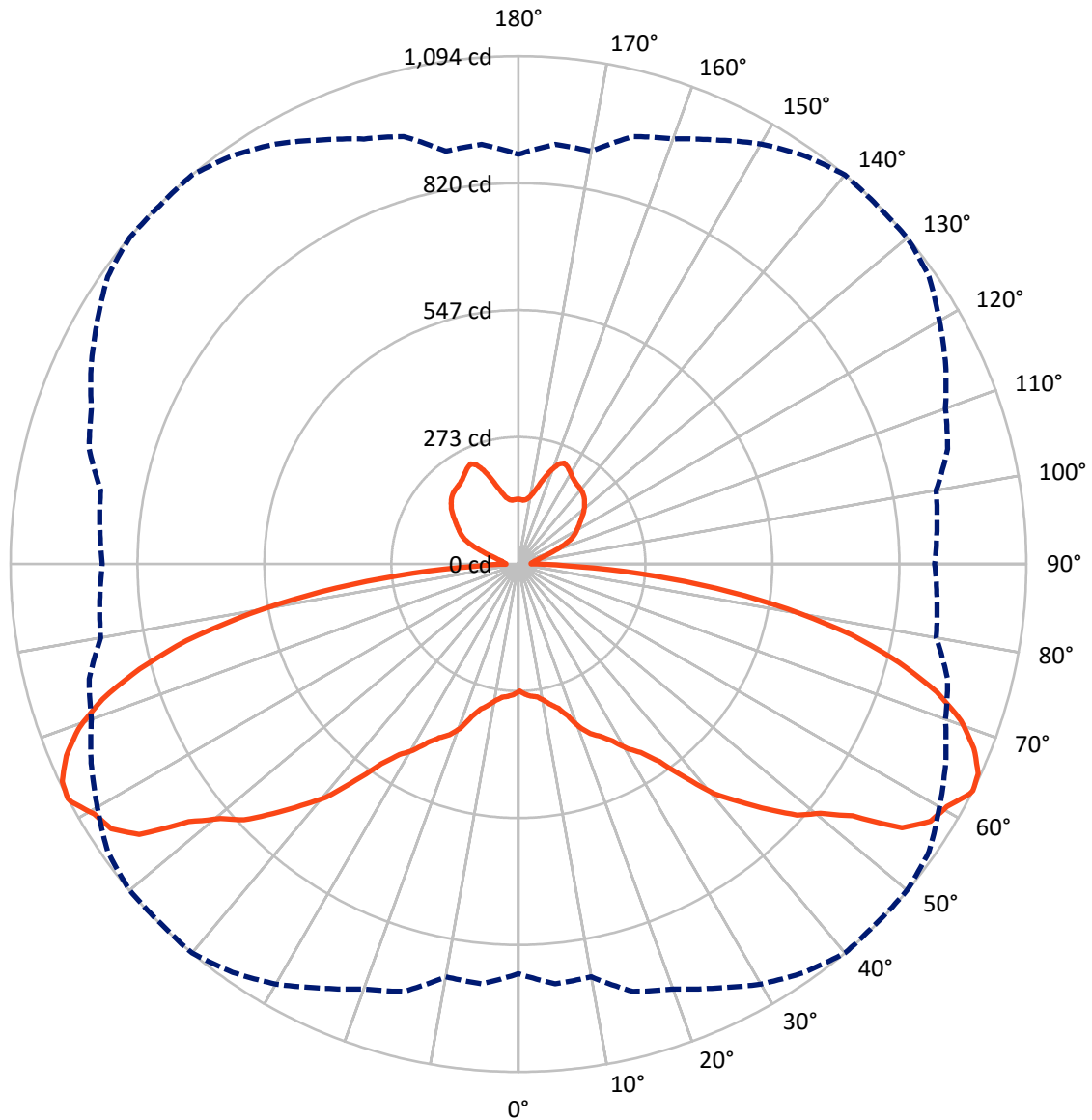
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.1 fc
 Type V - Short - Non-Cutoff

REPORT NUMBER: P198351
CATALOG NUMBER: TT-C2-LED-E1-WQ-LWR-LW-UPL

Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral - - - Horizontal Cone Through 63-Deg Vertical

REPORT NUMBER: P198351

CATALOG NUMBER: TT-C2-LED-E1-WQ-LWR-LW-UPL

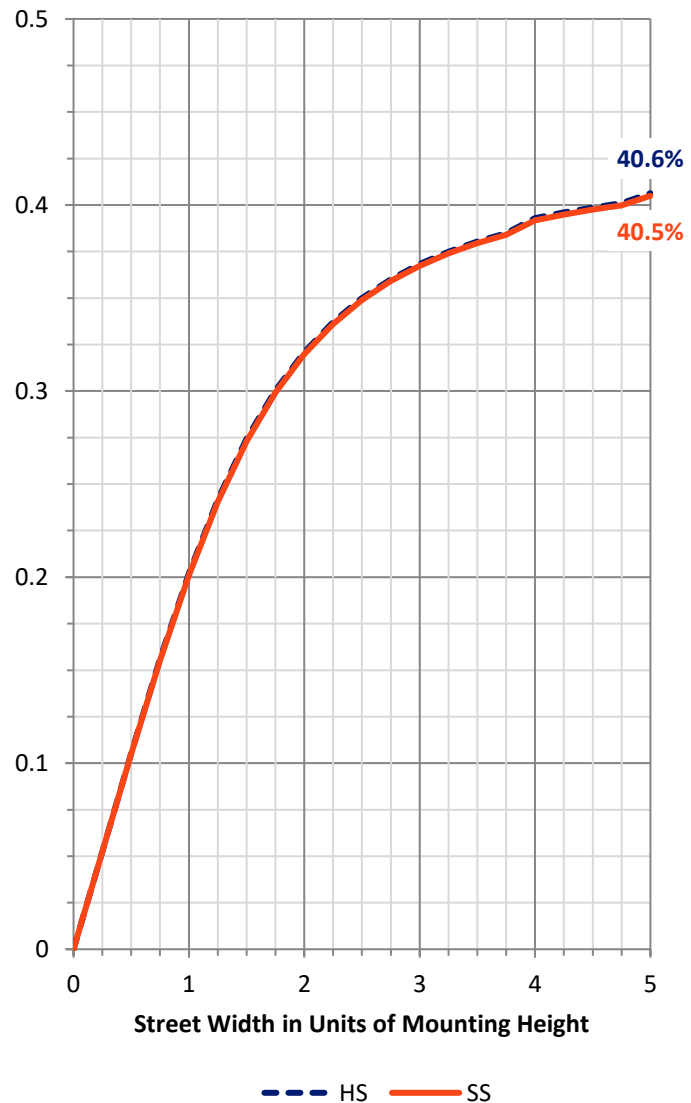
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2010.4	412.0	2422.4
	% Fixture	41.5	8.5	50.0
Street Side	Lumens	2010.4	412.0	2422.4
	% Fixture	41.5	8.5	50.0
Total	Lumens	4020.9	824.0	4844.9
	% Fixture	83.0	17.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.6	0.6
10°-20°	93.8	1.9
20°-30°	190.8	3.9
30°-40°	328.8	6.8
40°-50°	553.8	11.4
50°-60°	815.6	16.8
60°-70°	969.8	20.0
70°-80°	785.1	16.2
80°-90°	255.6	5.3
90°-100°	38.3	0.8
100°-110°	59.4	1.2
110°-120°	119.3	2.5
120°-130°	148.7	3.1
130°-140°	153.2	3.2
140°-150°	136.0	2.8
150°-160°	103.7	2.1
160°-170°	51.8	1.1
170°-180°	13.6	0.3
0°-90°	4020.9	83.0
0°-180°	4844.9	100.0



REPORT NUMBER: P198351

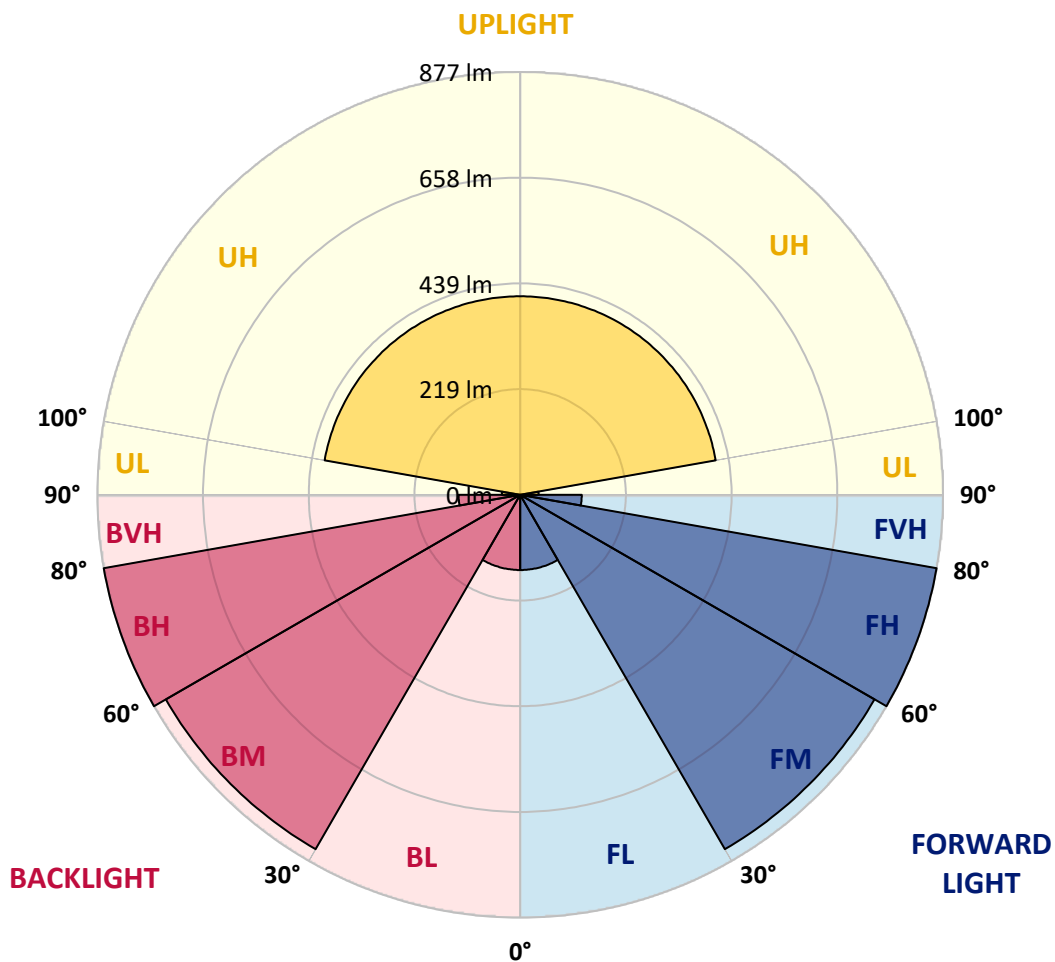
CATALOG NUMBER: TT-C2-LED-E1-WQ-LWR-LW-UPL

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	156.1	3.2			
FM	(30°-60°)	849.1	17.5			
FH	(60°-80°)	877.5	18.1			G1/1800
FVH	(80°-90°)	127.8	2.6			G2/225
BL	(0°-30°)	156.1	3.2	B1/500		
BM	(30°-60°)	849.1	17.5	B1/1000		
BH	(60°-80°)	877.5	18.1	B2/1000		G1/1800
BVH	(80°-90°)	127.8	2.6			G2/225
UL	(90°-100°)	38.3	0.8		U2/50	
UH	(100°-180°)	412.0	8.5		U3/500	

BUG Rating: B2-U4-G2

Type V Short





REPORT NUMBER: P198351

CATALOG NUMBER: TT-C2-LED-E1-WQ-LWR-LW-UPL

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	273.5	273.5	273.5	273.5	273.5	273.5	273.5	273.5	273.5	273.5	273.5
2.5°	282.0	282.0	282.0	282.0	282.0	282.0	281.2	282.0	281.2	281.2	281.2
5°	287.5	287.5	287.5	287.5	286.6	286.6	285.9	285.9	285.9	285.1	285.9
7.5°	289.8	289.8	289.8	289.8	289.0	289.0	289.0	289.0	289.0	289.0	289.0
10°	295.2	295.2	296.0	296.8	298.3	298.3	298.3	299.1	298.3	298.3	298.3
12.5°	306.9	306.1	307.6	309.2	310.8	311.6	311.6	311.6	310.8	310.8	311.6
15°	323.2	321.6	322.4	323.2	324.0	324.7	324.7	324.0	322.4	322.4	322.4
17.5°	344.1	341.8	341.1	340.3	340.3	341.8	343.4	342.6	343.4	342.6	343.4
20°	369.1	367.4	367.4	367.4	368.2	371.4	374.5	376.0	375.3	373.6	376.0
22.5°	385.3	386.2	390.0	389.2	388.4	391.6	395.4	398.6	397.0	394.7	396.2
25°	403.2	403.2	408.6	411.0	408.6	408.6	410.2	412.5	411.0	409.5	411.0
27.5°	423.4	423.4	425.7	428.1	426.6	426.6	428.9	432.8	431.9	431.1	431.9
30°	447.5	444.4	442.0	445.9	449.9	450.6	452.9	459.1	460.7	459.9	461.5
32.5°	470.0	465.3	467.0	469.3	477.8	480.9	480.1	484.8	484.0	481.7	484.8
35°	491.8	497.2	500.3	505.0	508.1	512.0	512.0	520.5	522.1	519.8	522.1
37.5°	533.7	536.0	544.6	545.4	549.3	564.0	565.6	577.3	583.5	580.3	581.1
40°	591.2	590.5	596.7	605.9	613.8	632.4	637.8	645.6	651.0	648.7	651.8
42.5°	637.8	631.6	636.3	656.5	665.1	679.0	686.0	689.9	700.0	696.9	700.8
45°	671.3	673.6	679.8	700.0	705.5	717.1	733.4	740.4	753.6	749.7	752.1
47.5°	703.8	714.7	720.2	729.5	746.6	762.1	782.3	789.3	807.9	806.4	804.1
50°	746.6	755.1	761.3	768.3	791.7	817.3	834.4	837.5	843.7	839.1	846.8
52.5°	792.5	791.7	797.1	816.5	849.1	859.2	874.0	888.0	901.2	905.8	901.2
55°	853.0	833.6	856.2	884.1	898.1	922.2	957.9	977.4	1003.0	1006.9	999.1
57.5°	877.9	877.9	901.2	917.5	943.2	985.9	1024.0	1033.3	1046.4	1039.5	1047.3
60°	874.8	904.3	904.3	933.1	975.0	1013.1	1027.0	1042.6	1060.5	1059.7	1059.7
62.5°	878.7	907.4	899.6	949.4	975.0	1006.0	1037.2	1065.9	1090.8	1090.0	1089.2
63°	882.5	907.4	902.8	953.2	974.2	1007.7	1044.9	1073.7	1093.9	1092.3	1093.1
65°	894.2	887.2	915.2	947.0	971.1	1020.8	1051.9	1074.4	1088.5	1087.7	1087.7
67.5°	872.4	856.2	895.7	908.2	954.1	998.3	1022.4	1048.1	1058.1	1058.1	1056.6
70°	805.6	812.6	839.8	860.0	906.6	946.2	966.5	999.1	1011.5	1011.5	1010.7
72.5°	738.0	749.7	768.3	797.1	841.4	872.4	896.6	926.1	942.3	941.6	941.6
75°	651.8	662.7	684.4	711.7	750.4	780.8	800.2	828.2	846.8	853.8	846.0
77.5°	554.7	557.8	578.0	605.9	640.1	661.1	690.7	717.9	733.4	732.6	730.3
80°	436.6	440.5	457.6	489.4	508.1	533.0	560.2	574.9	588.1	588.1	586.5
82.5°	301.4	309.9	327.0	348.0	367.4	389.2	404.0	418.7	429.6	428.9	426.6
85°	170.1	174.0	190.4	203.5	218.3	232.3	242.4	251.7	261.0	261.0	259.5
87.5°	51.3	45.8	55.2	60.6	68.4	75.4	80.0	89.3	95.5	88.5	88.5
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



REPORT NUMBER: P198351

CATALOG NUMBER: TT-C2-LED-E1-WQ-LWR-LW-UPL

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
110°	86.0	86.0	87.0	89.0	86.0	85.0	85.0	86.0	86.0	87.0	86.0
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



REPORT NUMBER: P198351

CATALOG NUMBER: TT-C2-LED-E1-WQ-LWR-LW-UPL

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	273.5	273.5	273.5	273.5	273.5	273.5	273.5	273.5
2.5°	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0
5°	285.9	286.6	286.6	287.5	287.5	287.5	287.5	287.5
7.5°	289.0	289.0	289.0	289.0	289.8	289.8	289.8	289.8
10°	298.3	299.1	298.3	298.3	296.8	296.0	296.0	296.0
12.5°	311.6	312.3	312.3	310.8	309.2	307.6	306.9	306.1
15°	324.0	326.3	324.7	324.0	322.4	323.2	323.2	324.0
17.5°	343.4	344.1	341.8	340.3	339.5	341.1	342.6	343.4
20°	376.8	375.3	370.6	369.1	367.4	367.4	369.1	369.1
22.5°	397.8	393.9	390.7	389.2	389.2	389.2	386.9	383.8
25°	412.5	410.2	407.8	409.5	411.0	408.6	403.2	402.4
27.5°	432.8	428.1	427.3	426.6	427.3	425.7	424.9	421.9
30°	459.1	452.9	451.4	449.9	445.2	443.6	445.2	447.5
32.5°	484.0	480.1	481.7	478.6	470.0	467.0	468.5	467.7
35°	519.8	512.7	512.7	506.5	504.2	503.4	497.2	491.8
37.5°	576.4	567.2	564.8	550.8	544.6	546.1	537.6	531.4
40°	645.6	638.6	632.4	616.8	608.3	597.4	592.0	592.0
42.5°	691.4	686.7	678.2	667.3	658.0	639.4	632.4	636.3
45°	741.9	735.7	717.9	707.0	698.4	685.2	677.5	669.6
47.5°	793.2	784.6	763.7	749.7	729.5	725.6	717.1	706.2
50°	838.3	835.2	820.4	797.1	771.5	765.2	757.5	747.4
52.5°	893.4	874.8	862.4	852.3	823.5	803.4	792.5	797.1
55°	983.6	960.3	928.4	896.6	890.4	866.2	839.1	853.8
57.5°	1035.6	1022.4	998.3	947.8	922.9	906.6	888.7	875.6
60°	1048.1	1024.0	1018.5	980.4	940.8	906.6	913.7	882.5
62.5°	1072.1	1039.5	1009.2	978.9	954.8	908.2	906.6	890.4
63°	1079.9	1047.3	1015.4	978.9	957.1	913.7	905.1	896.6
65°	1078.3	1050.4	1026.3	978.9	946.2	929.1	887.2	906.6
67.5°	1048.8	1025.5	997.5	964.9	910.5	897.3	867.8	871.7
70°	1001.4	971.1	944.7	914.4	870.9	840.6	822.7	807.9
72.5°	927.6	900.4	872.4	844.5	805.6	769.2	756.7	740.4
75°	829.7	803.4	777.7	751.3	714.7	682.1	668.9	657.2
77.5°	717.9	695.3	658.8	633.9	613.0	578.0	565.6	553.1
80°	572.6	561.7	535.3	502.7	491.8	457.6	448.2	431.9
82.5°	416.4	405.5	384.5	362.0	348.8	331.0	315.4	304.6
85°	254.1	242.4	231.5	211.3	203.5	190.4	177.9	171.7
87.5°	91.7	82.3	73.8	64.5	59.8	50.5	48.9	44.3
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



REPORT NUMBER: P198351

CATALOG NUMBER: TT-C2-LED-E1-WQ-LWR-LW-UPL

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
110°	84.0	83.0	84.0	81.0	78.0	76.0	74.0	75.0
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)