

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: P821355

Luminaire Tested: **TT-D2-750-24VDC-DL-UPL**

Issue Date: 7/23/2020



Test Information

Test Method: LM-79-08
Report Number: P821355
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G2-2002-677-3) AND
Test Lab: INNOVATION CENTER
Issue Date: 7/23/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TT-D2-750-24VDC-DL-UPL
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT WITH UPLIGHT
5000K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

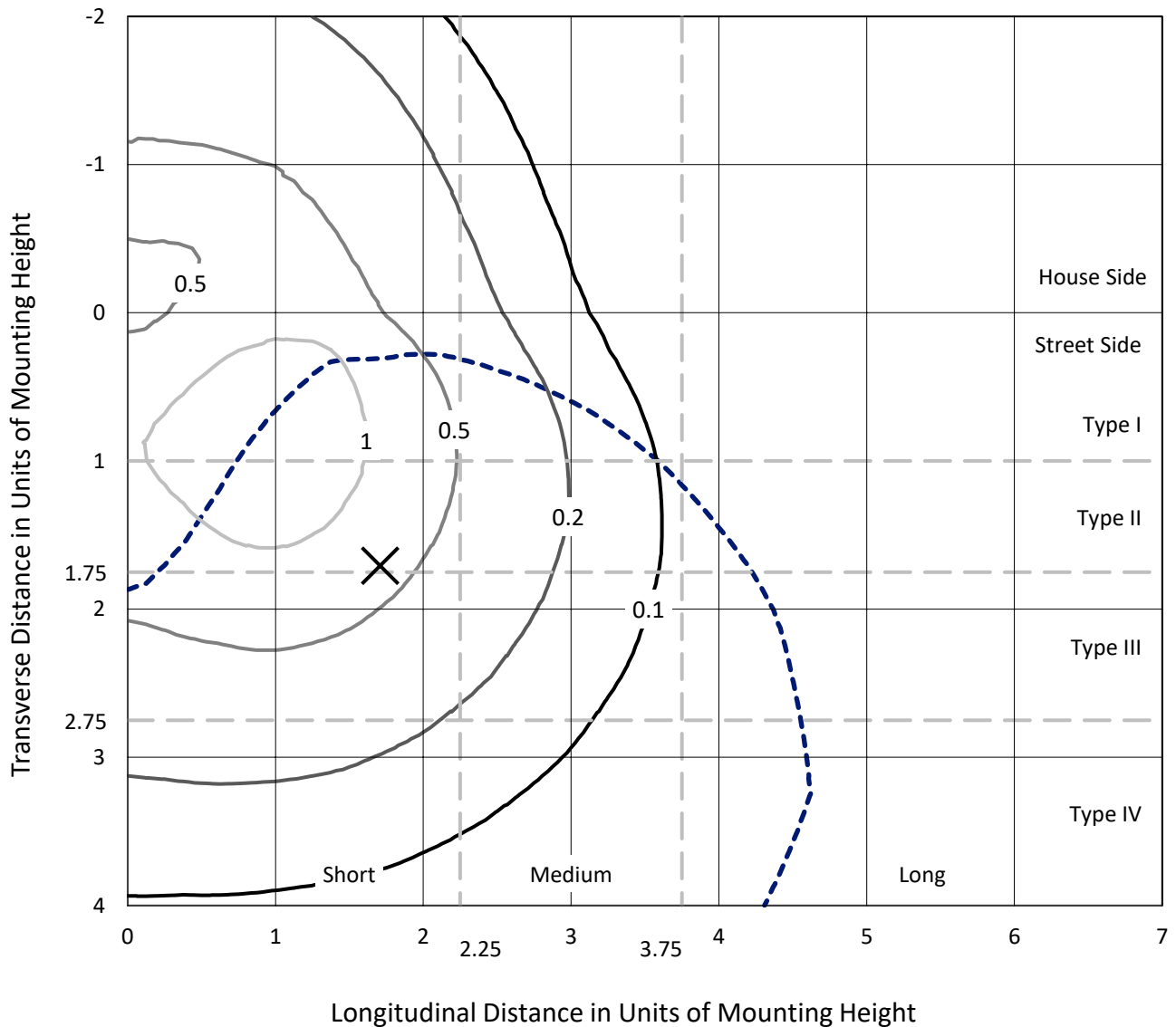
Lumens per Lamp: N/A
Luminaire Lumens: 5379.3 lumens
Efficiency: N/A
Efficacy: 141.6 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')
IES Classification: Type IV - Short
BUG Rating: B2 - U4 - G3

Input Watts (W): 38
Input Voltage (V): NR
Input Current (A_{in}): 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

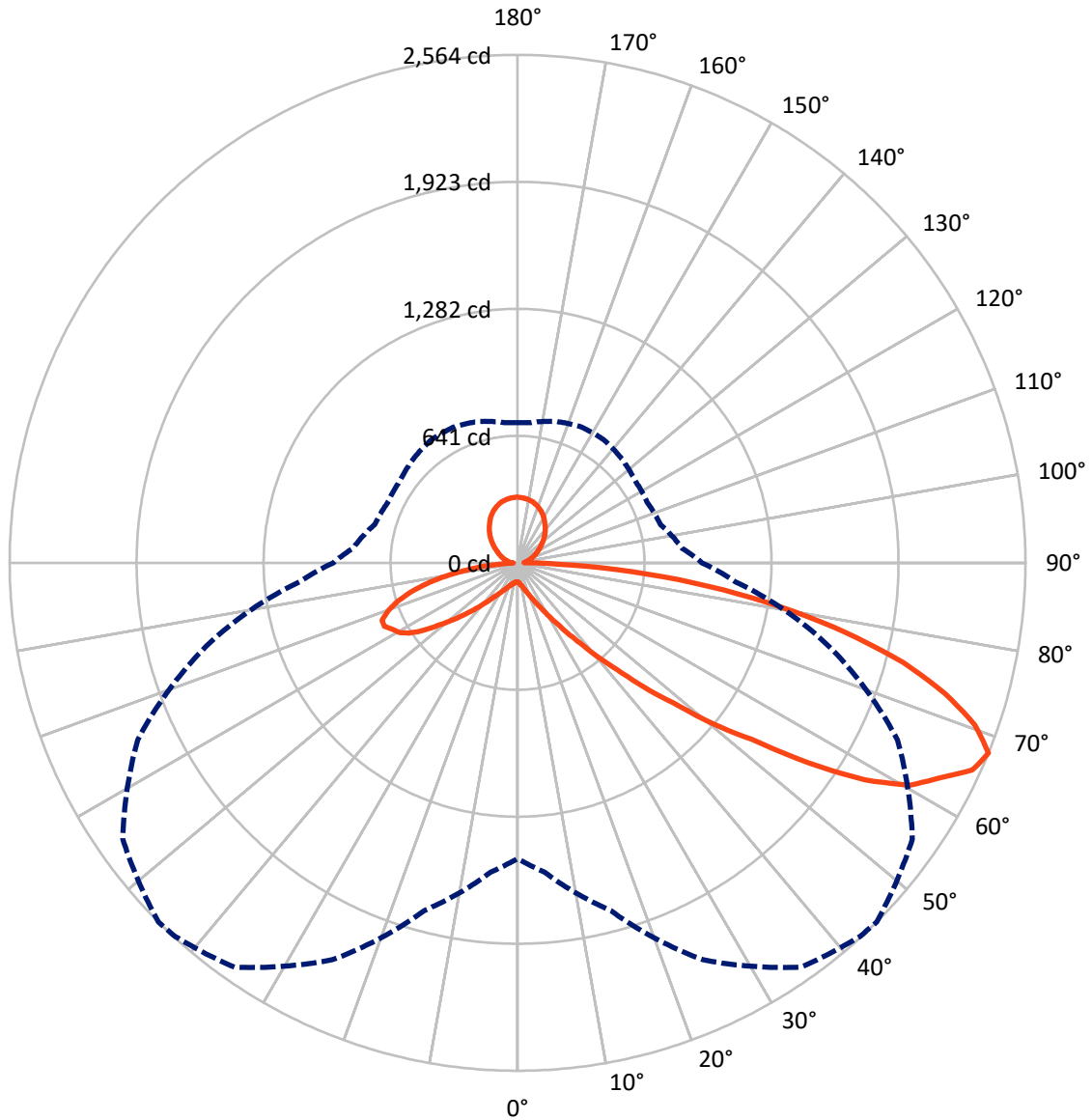
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1.5 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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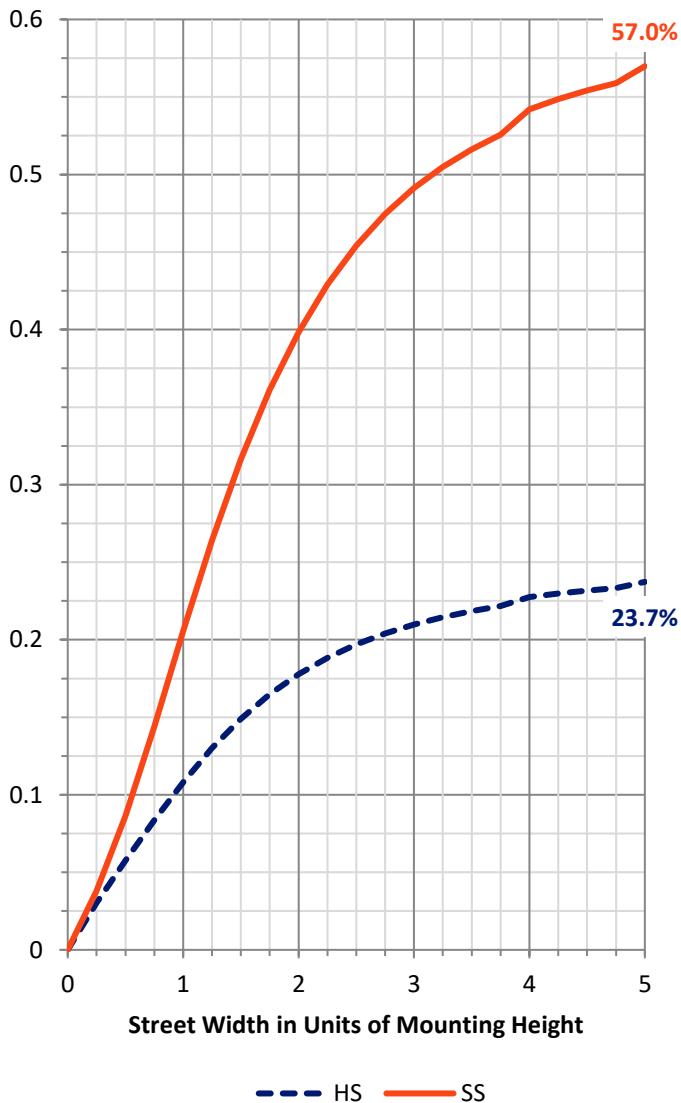
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1306.2	450.0	1756.2
	% Fixture	24.3	8.4	32.6
Street Side	Lumens	3173.1	450.0	3623.1
	% Fixture	59.0	8.4	67.4
Total	Lumens	4479.3	900.0	5379.3
	% Fixture	83.3	16.7	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	10.0	0.2
10°-20°	37.1	0.7
20°-30°	87.8	1.6
30°-40°	198.7	3.7
40°-50°	442.9	8.2
50°-60°	890.5	16.6
60°-70°	1307.9	24.3
70°-80°	1150.0	21.4
80°-90°	354.4	6.6
90°-100°	46.1	0.9
100°-110°	71.4	1.3
110°-120°	99.4	1.8
120°-130°	128.8	2.4
130°-140°	150.0	2.8
140°-150°	152.1	2.8
150°-160°	131.9	2.5
160°-170°	89.0	1.7
170°-180°	31.3	0.6
0°-90°	4479.3	83.3
0°-180°	5379.3	100.0

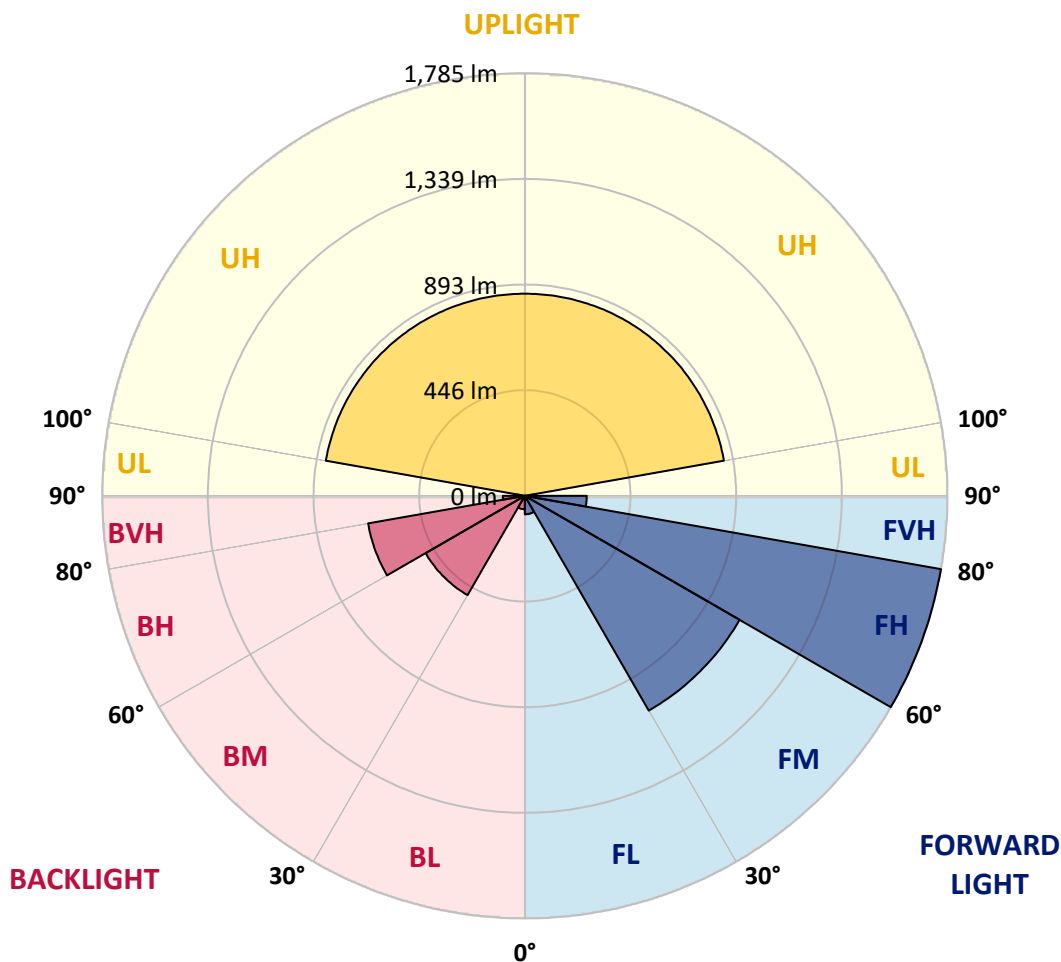


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	78.1	1.5			
FM (30°-60°)	1047.9	19.5			
FH (60°-80°)	1785.4	33.2			G1/1800
FVH (80°-90°)	261.6	4.9			G3/500
BL (0°-30°)	56.8	1.1	B0/110		
BM (30°-60°)	484.1	9.0	B1/1000		
BH (60°-80°)	672.5	12.5	B2/1000		G2/1000
BVH (80°-90°)	92.8	1.7			G1/100
UL (90°-100°)	46.1	0.9		U2/50	
UH (100°-180°)	853.9	15.9		U4/1000	

BUG Rating: B2-U4-G3
 Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	42.5°	45°	55°	65°	75°	85°
0°	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1
2.5°	101.3	100.4	100.4	100.4	99.6	99.6	99.6	99.6	98.7	98.7	98.7
5°	107.1	106.3	107.1	105.4	104.6	104.6	103.8	103.8	102.9	102.1	101.3
7.5°	115.5	114.6	114.6	113.0	112.1	111.3	111.3	109.6	108.8	107.1	105.4
10°	124.7	124.7	123.8	123.0	121.3	119.7	119.7	117.1	116.3	113.8	111.3
12.5°	135.6	135.6	135.6	133.9	132.2	131.4	129.7	128.0	125.5	121.3	118.8
15°	148.9	148.9	148.9	147.3	145.6	143.9	143.1	139.7	135.6	131.4	126.4
17.5°	165.7	164.0	164.0	162.3	160.7	159.8	158.2	154.8	148.9	143.9	137.2
20°	184.1	183.3	182.4	182.4	180.7	179.1	178.2	173.2	166.5	157.3	148.9
22.5°	205.0	204.2	204.2	205.8	205.0	202.5	202.5	195.0	185.8	174.9	162.3
25°	231.0	230.1	231.8	235.1	235.1	233.5	231.0	223.4	210.0	195.0	179.9
27.5°	259.4	258.6	261.9	267.8	269.4	266.9	265.3	256.9	241.8	221.7	200.0
30°	293.7	294.5	303.8	310.4	314.6	313.0	312.1	302.9	278.6	255.2	226.8
32.5°	335.6	333.0	344.8	355.6	363.2	367.3	364.8	354.0	333.0	296.2	260.2
35°	379.9	380.7	395.0	410.9	428.4	430.1	435.1	424.2	395.8	352.3	302.1
37.5°	437.6	430.9	449.4	479.5	500.4	518.8	515.5	508.8	475.3	417.6	348.9
40°	489.5	487.8	513.8	555.6	594.1	620.9	624.2	615.9	571.5	489.5	399.1
42.5°	548.9	554.0	589.9	647.7	706.2	744.7	735.5	731.3	679.5	574.9	467.8
45°	609.2	625.9	671.9	755.6	824.2	879.5	895.4	881.1	817.5	709.6	554.8
47.5°	682.0	704.6	761.5	874.4	986.6	1051.0	1054.3	1097.0	1000.8	839.3	645.2
50°	778.2	788.2	867.7	1005.8	1159.8	1250.2	1276.1	1276.9	1180.7	969.8	747.2
52.5°	872.8	880.3	984.9	1163.1	1372.3	1475.2	1481.1	1513.7	1382.4	1180.7	893.7
55°	986.6	983.2	1127.1	1341.4	1588.2	1738.0	1781.5	1825.9	1658.5	1347.2	977.4
57.5°	1097.0	1092.0	1265.2	1546.4	1883.6	2032.5	2068.5	2036.7	1788.2	1416.7	1018.4
60°	1199.1	1216.7	1427.6	1773.1	2112.0	2254.3	2278.6	2192.4	1871.9	1470.2	1044.3
62.5°	1305.4	1340.5	1595.7	1962.3	2286.9	2389.0	2390.7	2289.4	2011.6	1574.0	1128.8
65°	1405.0	1461.0	1726.3	2123.8	2409.1	2511.2	2522.9	2431.7	2148.9	1664.4	1143.0
67.5°	1492.8	1567.3	1816.7	2210.8	2491.9	2558.0	2563.9	2432.5	2116.2	1627.5	1103.7
70°	1563.9	1624.2	1872.7	2212.5	2434.2	2452.6	2448.4	2308.7	2025.9	1554.7	1037.6
72.5°	1591.6	1640.9	1845.9	2108.7	2264.3	2260.2	2256.8	2127.9	1876.9	1433.4	942.2
75°	1552.2	1566.5	1699.5	1886.9	1985.7	2009.1	2012.5	1896.2	1646.8	1253.5	808.3
77.5°	1389.9	1382.4	1484.5	1608.3	1682.8	1699.5	1696.2	1599.1	1380.7	1041.8	677.8
80°	1102.0	1117.9	1181.5	1263.5	1338.0	1356.4	1344.7	1271.1	1074.4	812.5	520.5
82.5°	770.7	789.9	843.5	905.4	961.5	961.5	972.3	901.2	761.5	583.2	364.0
85°	415.9	405.0	463.6	533.9	574.0	581.6	585.7	562.3	471.1	352.3	215.9
87.5°	68.6	73.6	91.2	139.7	159.0	184.1	195.8	153.1	92.9	59.4	43.5
90°	32.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
92.5°	37.6	37.1	37.1	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6
95°	42.7	42.7	42.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7
97.5°	48.3	48.3	48.3	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8
100°	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
102.5°	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	61.0	60.5	60.5
105°	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	68.1	67.1	67.1
107.5°	74.2	74.2	74.7	74.7	74.7	74.7	74.7	74.7	75.2	74.7	74.7
110°	81.3	81.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	42.5°	45°	55°	65°	75°	85°
112.5°	89.9	89.9	90.9	90.9	90.9	90.9	90.9	91.4	91.4	90.9	90.9
115°	98.6	98.6	99.6	99.6	99.6	99.6	99.6	100.6	100.6	99.6	99.6
117.5°	108.8	108.8	109.2	109.8	109.8	109.8	109.8	110.8	110.8	109.8	109.8
120°	118.9	118.9	118.9	119.9	119.9	119.9	119.9	121.0	121.0	119.9	119.9
122.5°	130.6	130.6	131.1	131.6	131.6	131.6	131.6	132.6	132.6	132.1	132.1
125°	142.3	142.3	143.3	143.3	143.3	143.3	143.3	144.3	144.3	144.3	144.3
127.5°	155.0	155.0	156.0	156.0	156.0	156.0	156.0	157.0	157.0	157.0	157.0
130°	167.7	167.7	168.7	168.7	168.7	168.7	168.7	169.7	169.7	169.7	169.7
132.5°	180.9	180.9	181.4	181.4	181.4	181.8	181.9	182.4	182.4	182.4	182.4
135°	194.1	194.1	194.1	194.1	194.1	194.8	195.1	195.1	195.1	195.1	195.1
137.5°	206.8	206.3	206.8	206.3	206.8	207.2	207.3	207.3	207.3	207.3	207.3
140°	219.5	218.5	219.5	218.5	219.5	219.5	219.5	219.5	219.5	219.5	219.5
142.5°	231.2	230.7	231.2	230.2	231.2	231.2	231.2	231.2	231.2	231.2	231.2
145°	242.9	242.9	242.9	241.9	242.9	242.9	242.9	242.9	242.9	242.9	242.9
147.5°	255.1	254.6	255.1	254.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1
150°	267.3	266.3	267.3	266.3	267.3	267.3	267.3	267.3	267.3	267.3	267.3
152.5°	277.0	276.5	277.5	276.5	277.0	277.0	277.0	277.5	277.0	277.0	277.0
155°	286.6	286.6	287.6	286.6	286.6	286.6	286.6	287.6	286.6	286.6	286.6
157.5°	294.8	294.8	295.8	294.8	294.8	294.8	294.8	295.8	294.8	294.8	294.8
160°	302.9	302.9	303.9	302.9	302.9	302.9	302.9	303.9	302.9	302.9	302.9
162.5°	309.5	309.5	310.5	309.5	309.5	309.5	309.5	310.5	309.5	309.5	309.5
165°	316.1	316.1	317.1	316.1	316.1	316.1	316.1	317.1	316.1	316.1	316.1
167.5°	320.2	320.2	321.2	320.2	320.2	320.2	320.2	321.2	320.2	320.2	320.2
170°	324.2	324.2	325.2	324.2	324.2	324.2	324.2	325.2	324.2	324.2	324.2
172.5°	326.8	326.8	327.8	326.8	327.2	326.9	326.8	327.8	326.8	326.8	326.8
175°	329.3	329.3	330.3	329.3	330.3	329.6	329.3	330.3	329.3	329.3	329.3
177.5°	330.3	330.3	330.8	330.3	330.8	330.4	330.3	330.8	330.3	330.3	330.3
180°	331.3	331.3	331.3	331.3	331.3	331.3	331.3	331.3	331.3	331.3	331.3



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1
2.5°	98.7	97.9	97.1	96.2	96.2	95.4	95.4	95.4	96.2	96.2	96.2
5°	101.3	100.4	99.6	98.7	97.1	97.1	97.1	97.1	97.1	97.1	97.1
7.5°	105.4	103.8	102.9	101.3	99.6	99.6	98.7	98.7	98.7	99.6	98.7
10°	110.5	108.8	107.1	104.6	103.8	102.9	102.1	102.1	102.9	102.9	102.1
12.5°	116.3	115.5	112.1	109.6	107.9	107.1	106.3	107.1	106.3	107.1	107.1
15°	124.7	122.2	118.0	115.5	113.0	112.1	111.3	112.1	112.1	113.0	112.1
17.5°	133.9	130.5	126.4	122.2	118.8	118.0	118.0	118.0	118.8	119.7	118.8
20°	144.8	140.6	134.7	129.7	126.4	125.5	125.5	126.4	127.2	128.0	128.0
22.5°	155.6	152.3	143.9	137.2	135.6	134.7	133.9	135.6	137.2	138.1	138.9
25°	172.4	165.7	155.6	148.1	144.8	144.8	145.6	147.3	148.1	149.8	148.9
27.5°	189.9	182.4	169.9	159.8	157.3	156.5	158.2	159.8	163.2	163.2	162.3
30°	214.2	201.7	185.8	176.6	169.9	170.7	173.2	175.7	179.1	180.7	180.7
32.5°	241.8	228.4	206.7	192.5	189.1	189.9	190.8	195.0	198.3	201.7	199.2
35°	277.8	261.1	234.3	218.4	210.0	209.2	212.5	217.6	220.9	222.6	222.6
37.5°	317.1	295.4	261.9	248.5	238.5	237.6	238.5	242.7	246.9	248.5	251.9
40°	364.8	338.1	298.7	277.0	269.4	267.8	271.1	277.0	277.0	279.5	280.3
42.5°	423.4	389.1	345.6	317.1	307.9	307.9	307.1	312.1	312.1	312.1	310.4
45°	497.9	459.4	402.5	373.2	357.3	348.9	351.4	348.1	347.3	349.8	342.2
47.5°	569.8	521.3	454.4	422.6	406.7	401.7	392.5	389.9	385.8	385.8	374.9
50°	653.5	593.3	528.8	483.7	468.6	454.4	446.8	435.1	422.6	420.1	415.9
52.5°	793.3	718.0	616.7	568.2	529.7	515.5	497.9	482.8	467.8	456.0	462.7
55°	850.2	773.2	677.0	630.1	603.3	589.9	557.3	537.2	514.6	497.9	507.1
57.5°	878.6	794.9	705.4	670.3	662.7	650.2	625.9	591.6	565.7	544.7	546.4
60°	894.5	806.7	720.5	688.7	684.5	692.9	680.3	656.9	616.7	595.8	593.3
62.5°	955.6	863.6	763.1	718.0	708.8	714.6	718.0	703.7	670.3	642.6	635.1
65°	968.2	870.3	771.5	742.2	743.1	744.7	747.2	732.2	715.4	681.1	674.4
67.5°	930.5	834.3	746.4	722.1	723.8	743.1	758.1	757.3	738.9	709.6	707.1
70°	873.6	779.9	698.7	677.0	681.1	698.7	731.3	748.1	744.7	725.5	729.7
72.5°	784.9	701.2	630.1	613.4	623.4	640.1	671.1	701.2	718.8	723.0	732.2
75°	681.1	614.2	547.3	537.2	544.7	564.0	592.4	627.6	666.1	687.0	692.9
77.5°	562.3	501.2	451.9	445.2	456.0	473.6	502.1	529.7	573.2	610.0	618.4
80°	440.1	387.4	352.3	346.4	353.1	368.2	389.9	412.5	454.4	482.8	487.0
82.5°	305.4	273.6	251.0	247.7	251.9	257.7	275.3	296.2	319.7	342.2	344.8
85°	177.4	157.3	151.5	146.4	155.6	155.6	159.8	171.5	183.3	184.9	189.9
87.5°	32.6	31.0	31.8	23.4	29.3	20.9	20.9	26.8	20.1	23.4	19.2
90°	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	32.5
92.5°	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	37.1	37.1	37.6
95°	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	42.7	42.7	42.7
97.5°	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	48.3	48.3	48.3
100°	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
102.5°	60.5	60.5	60.5	61.0	60.5	60.5	60.5	60.5	60.5	60.5	60.5
105°	67.1	67.1	67.1	68.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1
107.5°	74.7	74.7	74.7	75.2	74.7	74.7	74.7	74.7	74.7	74.2	74.2
110°	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	81.3	81.3



REPORT NUMBER: P821355
 CATALOG NUMBER: TT-D2-750-24VDC-DL-UPL

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	90.9	90.9	90.9	91.4	91.4	90.9	90.9	90.9	90.9	89.9	89.9
115°	99.6	99.6	99.6	100.6	100.6	99.6	99.6	99.6	99.6	98.6	98.6
117.5°	109.8	109.8	109.8	110.8	110.8	109.8	109.8	109.8	109.2	108.8	108.8
120°	119.9	119.9	119.9	121.0	121.0	119.9	119.9	119.9	118.9	118.9	118.9
122.5°	131.6	132.1	132.1	132.6	132.6	131.6	131.6	131.6	131.1	130.6	130.6
125°	143.3	144.3	144.3	144.3	144.3	143.3	143.3	143.3	143.3	142.3	142.3
127.5°	156.0	157.0	157.0	157.0	157.0	156.0	156.0	156.0	156.0	155.0	155.0
130°	168.7	169.7	169.7	169.7	169.7	168.7	168.7	168.7	168.7	167.7	167.7
132.5°	181.9	182.4	182.4	182.4	182.4	181.9	181.4	181.4	181.4	180.9	180.9
135°	195.1	195.1	195.1	195.1	195.1	195.1	194.1	194.1	194.1	194.1	194.1
137.5°	207.3	207.3	207.3	207.3	207.3	207.3	206.8	206.3	206.8	206.3	206.8
140°	219.5	219.5	219.5	219.5	219.5	219.5	219.5	218.5	219.5	218.5	219.5
142.5°	231.2	231.2	231.2	231.2	231.2	231.2	231.2	230.2	231.2	230.7	231.2
145°	242.9	242.9	242.9	242.9	242.9	242.9	242.9	241.9	242.9	242.9	242.9
147.5°	255.1	255.1	255.1	255.1	255.1	255.1	255.1	254.1	255.1	254.6	255.1
150°	267.3	267.3	267.3	267.3	267.3	267.3	267.3	266.3	267.3	266.3	267.3
152.5°	277.0	277.0	277.0	277.0	277.5	277.0	277.0	276.5	277.5	276.5	277.0
155°	286.6	286.6	286.6	286.6	287.6	286.6	286.6	286.6	287.6	286.6	286.6
157.5°	294.8	294.8	294.8	294.8	295.8	294.8	294.8	294.8	295.8	294.8	294.8
160°	302.9	302.9	302.9	302.9	303.9	302.9	302.9	302.9	303.9	302.9	302.9
162.5°	309.5	309.5	309.5	309.5	310.5	309.5	309.5	309.5	310.5	309.5	309.5
165°	316.1	316.1	316.1	316.1	317.1	316.1	316.1	316.1	317.1	316.1	316.1
167.5°	320.2	320.2	320.2	320.2	321.2	320.2	320.2	320.2	321.2	320.2	320.2
170°	324.2	324.2	324.2	324.2	325.2	324.2	324.2	324.2	325.2	324.2	324.2
172.5°	326.8	326.8	326.8	326.8	327.8	326.8	327.2	326.8	327.8	326.8	326.8
175°	329.3	329.3	329.3	329.3	330.3	329.3	330.3	329.3	330.3	329.3	329.3
177.5°	330.3	330.3	330.3	330.3	330.8	330.3	330.8	330.3	330.8	330.3	330.3
180°	331.3	331.3	331.3	331.3	331.3	331.3	331.3	331.3	331.3	331.3	331.3

(END OF REPORT)