

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: P226311

Luminaire Tested: **IST-AF-450-LED-E1-T2-8030-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226311
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35937)-DOWNLIGHT AND
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: IST-AF-450-LED-E1-T2-8030-ULG
Description: IMPACT ELITE LED TRAPEZOID LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE II, WITH UPLIGHT GLOW
Light Source: (16) 3000K CCT, 80 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4296.7 lumens
Efficiency: N/A
Efficacy: 102.3 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')
IES Classification: Type II - Medium - Non-Cutoff
BUG Rating: B1 - U5 - G1

Input Watts (W): 42.01
Input Voltage (V): 120
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

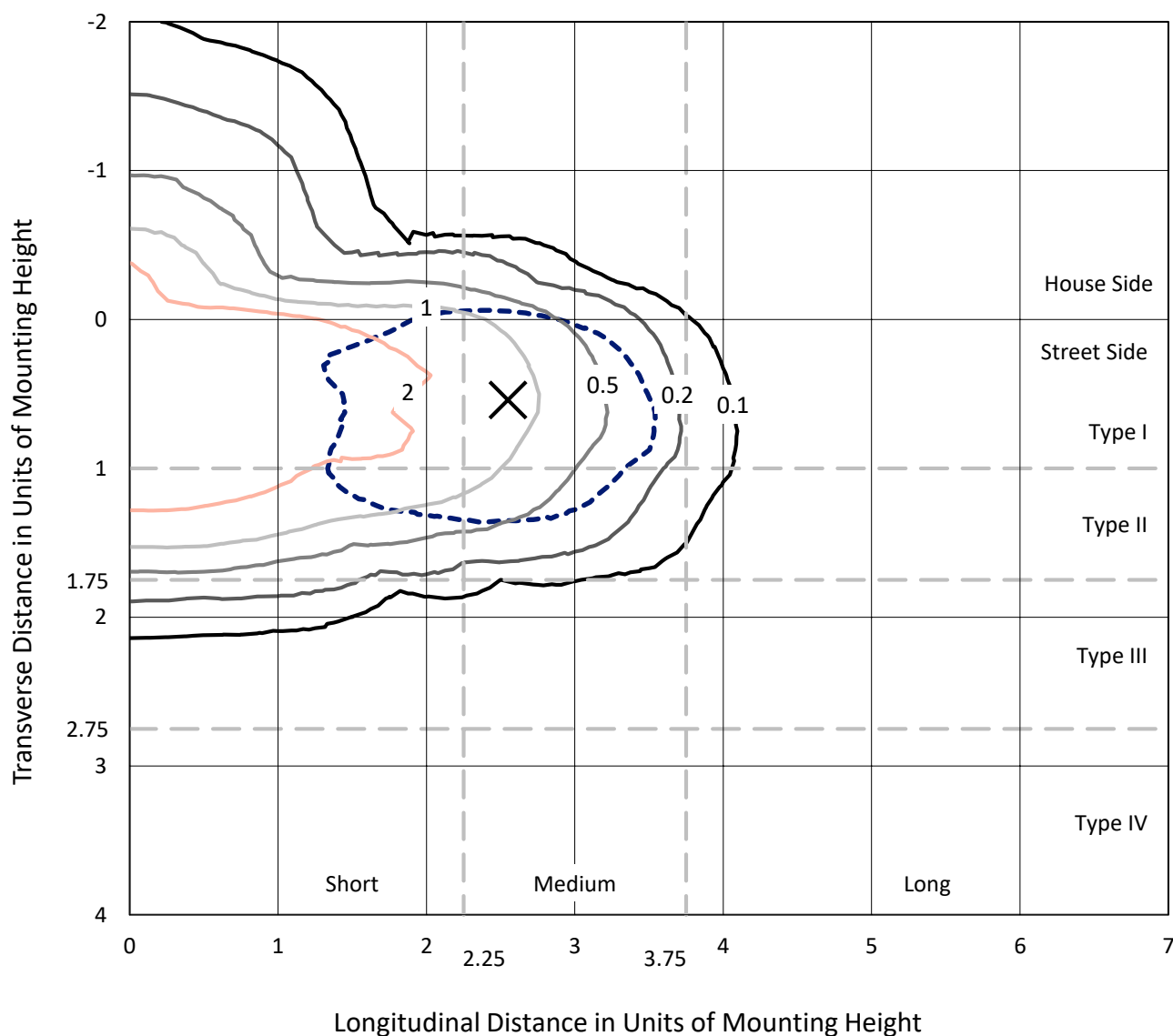


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 --- 1/2 Max cd

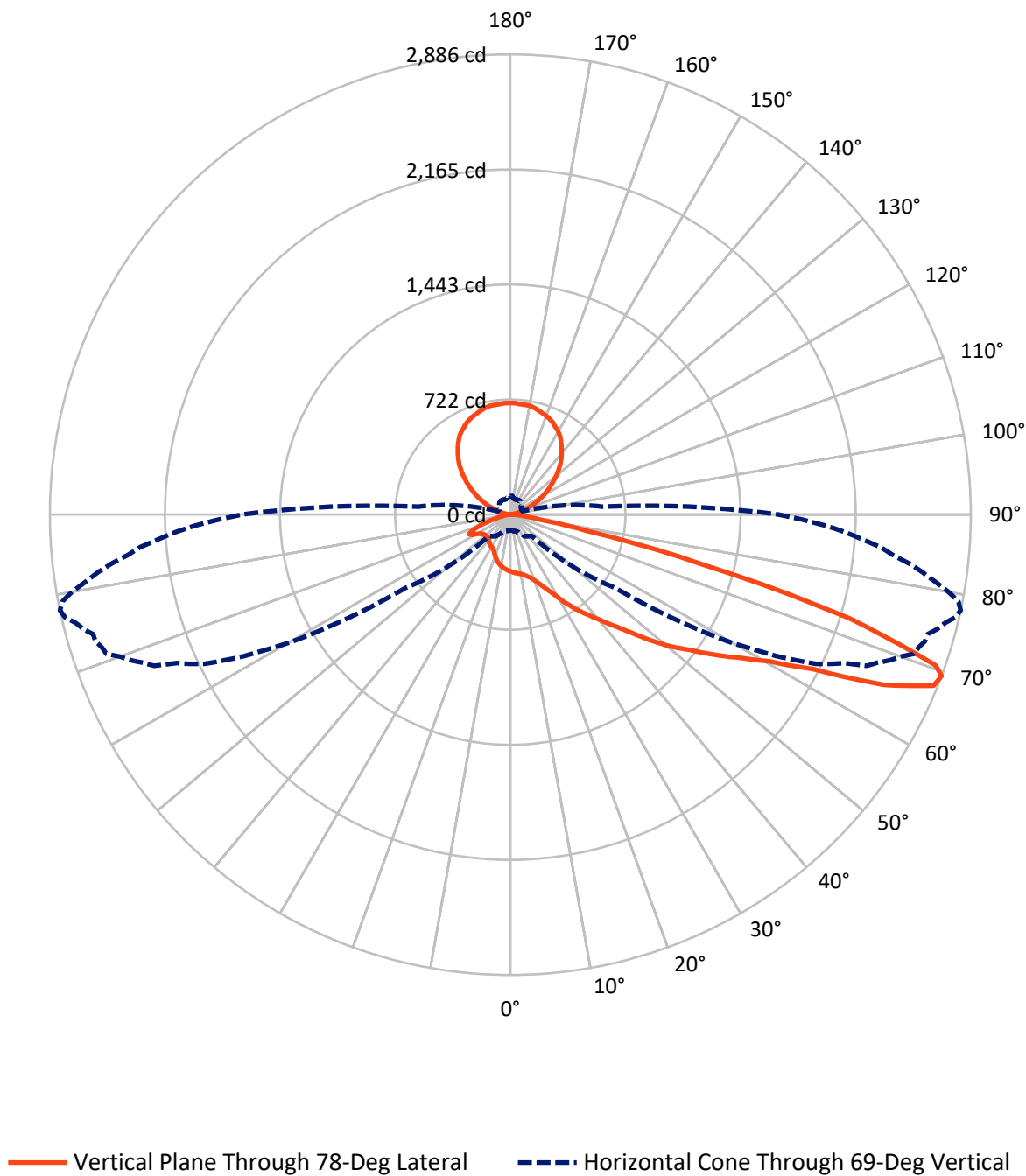


Based on 10 foot mounting height. Maximum calculated value = 4.6 fc
 Type II - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



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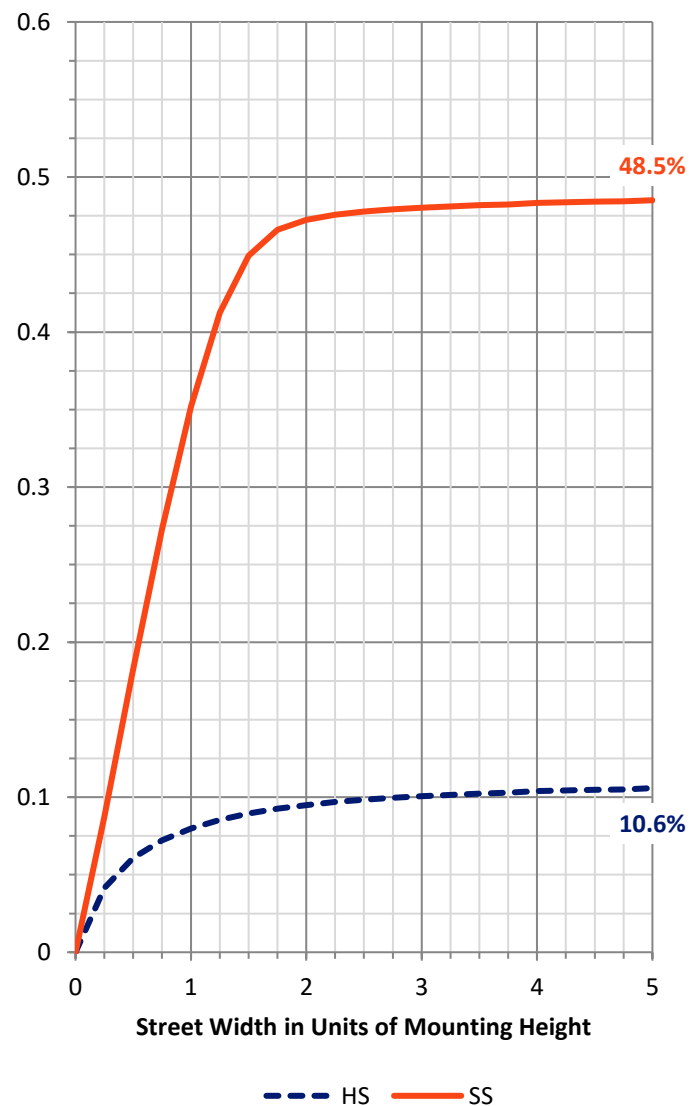
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	468.7	868.5	1337.1
	% Fixture	10.9	20.2	31.1
Street Side	Lumens	2091.6	868.0	2959.5
	% Fixture	48.7	20.2	68.9
Total	Lumens	2560.2	1736.5	4296.7
	% Fixture	59.6	40.4	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.1	0.8
10°-20°	99.9	2.3
20°-30°	179.0	4.2
30°-40°	292.2	6.8
40°-50°	432.2	10.1
50°-60°	564.3	13.1
60°-70°	631.1	14.7
70°-80°	283.3	6.6
80°-90°	45.2	1.1
90°-100°	10.6	0.2
100°-110°	57.4	1.3
110°-120°	166.1	3.9
120°-130°	273.2	6.4
130°-140°	336.8	7.8
140°-150°	344.6	8.0
150°-160°	290.3	6.8
160°-170°	191.2	4.4
170°-180°	66.3	1.5
0°-90°	2560.2	59.6
0°-180°	4296.7	100.0

Coefficient of Utilization



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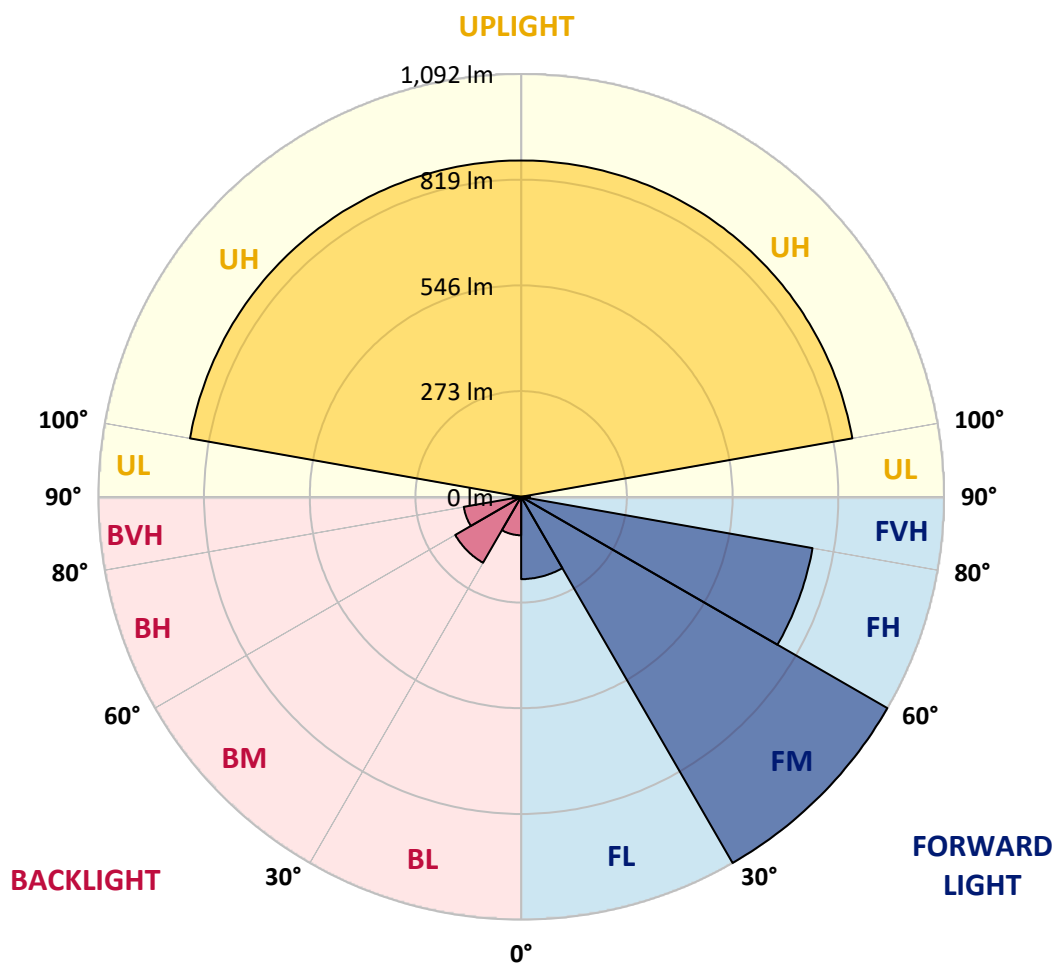
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	212.5	4.9			
FM	(30°-60°)	1092.0	25.4			
FH	(60°-80°)	764.0	17.8			G1/1800
FVH	(80°-90°)	23.1	0.5			G1/100
BL	(0°-30°)	99.4	2.3	B0/110		
BM	(30°-60°)	196.7	4.6	B0/220		
BH	(60°-80°)	150.5	3.5	B1/500		G1/500
BVH	(80°-90°)	22.1	0.5			G1/100
UL	(90°-100°)	10.6	0.2		U2/50	
UH	(100°-180°)	868.5	20.2		U4/1000	

BUG Rating: B1-U5-G1

Type II Medium



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1
2.5°	381.4	381.4	380.3	379.5	378.4	375.4	371.0	370.2	369.8	369.1	368.4
5°	409.2	406.3	407.0	405.2	401.1	395.9	387.7	383.6	381.4	381.0	379.5
7.5°	431.9	432.3	431.2	427.5	421.9	415.6	404.4	398.1	396.2	395.1	392.5
10°	448.3	447.2	446.4	445.7	441.2	436.0	421.9	414.1	412.6	409.6	406.6
12.5°	460.2	460.2	460.2	459.4	456.8	452.7	441.6	433.8	431.9	427.8	425.2
15°	473.2	471.7	470.2	469.1	469.5	469.5	461.3	455.3	452.4	450.1	444.9
17.5°	501.1	497.7	494.4	489.9	482.8	481.0	480.6	480.2	476.2	475.8	470.6
20°	524.8	521.9	518.9	514.4	504.4	493.6	499.2	504.4	503.7	504.0	501.4
22.5°	554.2	552.0	546.0	540.8	527.8	514.8	515.6	526.7	528.2	529.7	530.4
25°	594.4	593.2	583.6	573.5	558.7	546.4	534.9	548.6	551.6	555.0	561.6
27.5°	634.9	632.3	621.9	612.9	594.4	581.3	565.4	572.8	577.3	583.6	594.0
30°	687.3	680.2	676.5	656.4	639.3	620.4	606.6	608.9	608.1	615.5	631.5
32.5°	763.1	752.0	733.4	713.3	693.2	668.0	656.4	656.1	654.2	662.7	671.7
35°	804.0	801.4	789.9	769.8	747.9	724.1	716.6	709.6	710.7	715.2	718.5
37.5°	848.2	846.0	837.1	825.9	809.2	822.2	781.0	770.5	765.7	763.5	764.6
40°	867.6	869.4	874.3	876.1	866.4	928.9	847.5	813.3	811.8	808.5	805.1
42.5°	871.6	876.5	886.1	907.3	916.6	1052.7	902.5	861.2	855.3	852.7	853.1
45°	886.5	894.0	895.8	915.1	959.0	1059.0	964.6	903.6	899.2	898.8	896.6
47.5°	922.6	932.6	932.6	941.2	982.8	1071.3	985.8	946.0	943.0	941.5	947.5
50°	927.8	941.2	967.9	995.4	1025.5	1081.3	1009.9	992.1	993.2	996.5	1014.0
52.5°	839.7	853.1	923.7	1004.7	1102.8	1108.8	1046.3	1053.4	1060.8	1077.2	1109.2
55°	720.0	729.7	813.3	943.0	1105.8	1213.2	1137.8	1157.5	1173.1	1177.9	1228.1
57.5°	566.9	580.2	665.4	833.7	1032.6	1243.0	1348.2	1357.1	1339.6	1355.6	1373.8
60°	307.0	305.5	424.1	602.9	878.7	1188.0	1551.1	1704.3	1708.0	1732.5	1703.2
62.5°	171.7	171.7	205.9	309.6	565.4	1005.1	1648.5	2004.6	2051.1	2090.1	2176.0
65°	129.7	130.8	143.1	186.6	317.4	634.5	1577.1	2107.2	2196.4	2286.0	2436.5
67.5°	107.8	107.8	116.7	139.0	198.5	288.1	1161.2	1901.3	2012.8	2119.8	2328.0
69°	100.0	100.4	107.1	122.3	166.2	187.3	802.1	1612.1	1739.6	1887.9	2133.2
70°	96.3	95.2	101.5	114.1	150.5	147.9	587.7	1401.7	1500.6	1633.6	1915.8
72.5°	85.5	84.4	87.7	97.4	118.6	105.6	239.7	754.2	903.2	1052.3	1277.2
75°	76.2	75.1	77.7	82.1	92.2	80.7	120.4	315.9	382.5	494.4	682.1
77.5°	67.3	65.0	67.3	70.3	72.5	60.2	81.8	146.1	179.2	220.0	310.7
80°	61.0	58.7	61.3	59.8	56.9	46.5	54.3	85.1	94.4	113.0	147.9
82.5°	43.5	43.1	58.4	60.2	45.3	33.8	38.7	54.6	61.0	64.3	78.1
85°	26.8	25.6	33.8	43.1	46.1	21.2	24.9	32.3	33.8	36.8	43.5
87.5°	13.8	14.1	18.2	22.3	30.1	12.6	14.9	19.0	19.0	19.0	21.6
90°	8.3	9.1	12.6	15.8	14.3	10.3	12.6	12.5	13.4	12.9	14.0
92.5°	4.0	4.0	5.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0
95°	5.0	5.0	6.0	7.0	7.0	7.0	7.0	7.5	7.6	7.7	7.9
97.5°	7.0	7.0	8.0	8.0	9.0	9.0	12.0	11.0	10.8	10.6	10.2
100°	8.0	8.0	9.0	10.0	12.0	21.0	29.0	27.5	27.2	26.9	26.3
102.5°	11.0	11.0	13.0	18.0	27.0	40.0	50.0	48.5	48.2	47.9	47.3
105°	21.0	22.0	27.0	36.0	48.0	63.0	72.0	71.0	70.8	70.6	70.2
107.5°	41.0	42.0	49.0	58.0	73.0	88.0	95.0	94.5	94.4	94.3	94.1

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
110°	66.0	68.0	74.0	87.0	102.0	114.0	120.0	120.5	120.6	120.7	120.9
112.5°	99.0	99.0	106.0	121.0	134.0	143.0	148.0	149.0	149.2	149.4	149.8
115°	140.0	139.0	147.0	159.0	168.0	174.0	179.0	180.5	180.8	181.1	181.7
117.5°	184.0	184.0	189.0	197.0	202.0	205.0	211.0	213.0	213.4	213.8	214.6
120°	225.0	223.0	226.0	233.0	237.0	243.0	246.0	248.0	248.4	248.8	249.6
122.5°	263.0	260.0	261.0	267.0	271.0	277.0	279.0	281.0	281.4	281.8	282.6
125°	298.0	294.0	296.0	299.0	305.0	310.0	313.0	314.0	314.2	314.4	314.8
127.5°	330.0	329.0	329.0	333.0	339.0	340.0	345.0	345.5	345.6	345.7	345.9
130°	363.0	361.0	362.0	366.0	370.0	372.0	377.0	379.0	379.4	379.8	380.6
132.5°	396.0	394.0	393.0	401.0	404.0	405.0	411.0	413.5	414.0	414.5	415.5
135°	429.0	426.0	426.0	432.0	435.0	437.0	443.0	445.5	446.0	446.5	447.5
137.5°	460.0	457.0	459.0	460.0	464.0	468.0	473.0	474.0	474.2	474.4	474.8
140°	488.0	485.0	487.0	489.0	491.0	497.0	500.0	501.0	501.2	501.4	501.8
142.5°	518.0	515.0	517.0	518.0	521.0	525.0	527.0	530.0	530.6	531.2	532.4
145°	550.0	546.0	544.0	547.0	550.0	551.0	556.0	559.0	559.6	560.2	561.4
147.5°	575.0	572.0	571.0	574.0	574.0	575.0	580.0	582.5	583.0	583.5	584.5
150°	595.0	592.0	593.0	593.0	593.0	593.0	597.0	598.5	598.8	599.1	599.7
152.5°	611.0	608.0	608.0	609.0	610.0	610.0	611.0	612.5	612.8	613.1	613.7
155°	629.0	625.0	625.0	627.0	630.0	628.0	626.0	628.5	629.0	629.5	630.5
157.5°	646.0	643.0	643.0	644.0	646.0	645.0	644.0	646.0	646.4	646.8	647.6
160°	663.0	660.0	659.0	656.0	655.0	655.0	658.0	661.0	661.6	662.2	663.4
162.5°	673.0	669.0	669.0	665.0	661.0	663.0	667.0	669.0	669.4	669.8	670.6
165°	681.0	678.0	676.0	676.0	673.0	673.0	672.0	674.5	675.0	675.5	676.5
167.5°	690.0	687.0	684.0	686.0	688.0	685.0	678.0	681.0	681.6	682.2	683.4
170°	698.0	695.0	692.0	692.0	693.0	691.0	686.0	687.5	687.8	688.1	688.7
172.5°	699.0	697.0	695.0	693.0	690.0	690.0	689.0	690.5	690.8	691.1	691.7
175°	700.0	698.0	697.0	695.0	691.0	690.0	690.0	692.5	693.0	693.5	694.5
177.5°	707.0	705.0	700.0	699.0	697.0	695.0	694.0	696.5	697.0	697.5	698.5
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0

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CANDELA DISTRIBUTION (continued):

	65°	66°	67°	68°	69°	70°	71°	72°	73°	74°	75°
0°	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1
2.5°	368.7	367.6	366.1	366.5	365.8	364.6	365.0	364.6	365.0	364.3	363.5
5°	379.5	378.8	376.5	376.2	375.4	374.7	373.6	372.4	372.1	371.3	369.8
7.5°	391.8	389.5	388.4	386.9	385.1	382.1	381.7	380.3	379.1	378.4	376.5
10°	404.4	401.8	400.3	398.5	396.6	394.8	392.9	390.3	387.7	386.9	384.7
12.5°	423.4	420.0	417.1	414.1	412.2	408.9	406.3	402.9	400.3	399.2	395.5
15°	444.2	439.7	436.8	434.5	431.5	428.6	425.2	422.3	418.2	414.8	411.5
17.5°	468.7	464.6	462.4	458.3	454.6	451.2	448.6	444.9	441.6	435.6	432.7
20°	501.1	497.7	495.1	490.7	486.6	483.2	481.0	473.2	468.7	463.5	458.7
22.5°	531.2	531.5	528.9	526.0	523.4	518.9	515.2	509.6	504.0	497.7	491.0
25°	563.9	566.9	567.2	566.5	565.0	559.8	557.9	552.4	547.9	537.5	534.5
27.5°	600.3	603.6	607.7	612.9	614.1	608.5	611.1	605.5	597.7	593.2	583.6
30°	635.6	644.9	653.5	659.4	663.1	665.7	663.9	662.0	656.8	649.4	640.8
32.5°	681.0	690.6	699.2	712.2	718.9	727.1	725.6	726.3	724.5	717.0	707.0
35°	726.7	735.2	746.4	754.9	771.3	780.2	787.6	787.3	787.3	782.8	773.1
37.5°	767.2	772.0	781.3	795.4	806.2	820.4	832.2	837.1	844.9	845.3	834.8
40°	809.6	814.4	821.5	831.9	843.8	860.5	876.5	892.1	899.5	907.3	903.2
42.5°	855.3	860.5	865.7	872.4	889.5	902.5	924.1	945.2	960.5	976.5	974.6
45°	900.6	906.6	914.0	924.1	939.3	960.5	981.3	1005.1	1040.0	1059.0	1072.0
47.5°	951.9	961.6	975.4	991.3	1003.6	1025.5	1051.9	1088.7	1124.0	1156.7	1177.2
50°	1029.3	1033.0	1055.3	1070.9	1094.3	1116.6	1143.0	1175.3	1221.1	1254.5	1287.2
52.5°	1120.3	1134.4	1156.7	1174.6	1193.2	1215.5	1242.6	1271.6	1317.0	1354.5	1396.9
55°	1237.8	1257.8	1277.2	1286.8	1312.9	1332.9	1354.9	1383.5	1432.2	1473.1	1522.9
57.5°	1377.9	1398.0	1407.3	1421.4	1432.6	1454.9	1484.6	1503.9	1547.0	1589.4	1642.2
60°	1665.6	1653.0	1664.1	1642.2	1638.8	1640.7	1647.0	1661.9	1686.1	1725.5	1781.2
62.5°	2184.9	2166.7	2118.3	2100.9	2067.1	2021.3	1978.2	1972.3	1959.6	1989.4	2024.3
65°	2488.2	2554.4	2561.4	2580.0	2566.6	2530.9	2480.4	2464.0	2423.1	2394.5	2392.7
67.5°	2415.3	2514.6	2576.7	2655.1	2698.6	2741.0	2752.1	2766.6	2740.2	2727.2	2730.9
69°	2212.8	2286.4	2425.4	2478.9	2547.7	2604.2	2678.5	2691.5	2717.2	2720.9	2770.3
70°	2012.0	2120.2	2199.7	2280.0	2375.2	2437.3	2470.7	2525.7	2589.3	2620.5	2674.0
72.5°	1446.7	1482.0	1538.5	1642.6	1669.0	1733.3	1799.1	1845.9	1920.6	1973.4	2099.4
75°	780.6	801.8	890.6	949.7	965.3	986.5	1034.8	1046.3	1074.2	1091.3	1212.5
77.5°	356.5	388.8	400.3	432.7	414.5	423.4	434.9	432.3	440.1	477.3	519.6
80°	164.3	170.6	175.1	188.5	189.2	186.2	187.3	185.5	184.0	189.9	194.4
82.5°	79.9	89.6	89.6	97.8	101.8	100.7	103.0	102.2	103.7	102.2	107.1
85°	46.8	46.8	50.6	55.0	54.3	55.8	55.8	58.7	59.1	59.8	59.8
87.5°	21.9	24.2	25.3	27.1	27.9	29.0	29.7	29.7	30.1	29.4	30.1
90°	14.6	14.6	18.3	18.3	19.0	20.2	18.7	19.4	22.0	18.7	21.3
92.5°	7.0	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.2	6.1	6.0
95°	8.0	7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.0
97.5°	10.0	9.9	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0
100°	26.0	25.7	25.4	25.1	24.8	24.5	24.2	23.9	23.6	23.3	23.0
102.5°	47.0	46.5	46.0	45.5	45.0	44.5	44.0	43.5	43.0	42.5	42.0
105°	70.0	69.5	69.0	68.5	68.0	67.5	67.0	66.5	66.0	65.5	65.0
107.5°	94.0	93.6	93.2	92.8	92.4	92.0	91.6	91.2	90.8	90.4	90.0

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CANDELA DISTRIBUTION (continued):

	65°	66°	67°	68°	69°	70°	71°	72°	73°	74°	75°
110°	121.0	120.8	120.6	120.4	120.2	120.0	119.8	119.6	119.4	119.2	119.0
112.5°	150.0	149.9	149.8	149.7	149.6	149.5	149.4	149.3	149.2	149.1	149.0
115°	182.0	181.7	181.4	181.1	180.8	180.5	180.2	179.9	179.6	179.3	179.0
117.5°	215.0	214.5	214.0	213.5	213.0	212.5	212.0	211.5	211.0	210.5	210.0
120°	250.0	249.5	249.0	248.5	248.0	247.5	247.0	246.5	246.0	245.5	245.0
122.5°	283.0	282.5	282.0	281.5	281.0	280.5	280.0	279.5	279.0	278.5	278.0
125°	315.0	314.5	314.0	313.5	313.0	312.5	312.0	311.5	311.0	310.5	310.0
127.5°	346.0	346.0	346.0	346.0	346.0	346.0	346.0	346.0	346.0	346.0	346.0
130°	381.0	381.0	381.0	381.0	381.0	381.0	381.0	381.0	381.0	381.0	381.0
132.5°	416.0	415.8	415.6	415.4	415.2	415.0	414.8	414.6	414.4	414.2	414.0
135°	448.0	447.9	447.8	447.7	447.6	447.5	447.4	447.3	447.2	447.1	447.0
137.5°	475.0	475.1	475.2	475.3	475.4	475.5	475.6	475.7	475.8	475.9	476.0
140°	502.0	502.2	502.4	502.6	502.8	503.0	503.2	503.4	503.6	503.8	504.0
142.5°	533.0	533.0	533.0	533.0	533.0	533.0	533.0	533.0	533.0	533.0	533.0
145°	562.0	561.9	561.8	561.7	561.6	561.5	561.4	561.3	561.2	561.1	561.0
147.5°	585.0	585.1	585.2	585.3	585.4	585.5	585.6	585.7	585.8	585.9	586.0
150°	600.0	600.3	600.6	600.9	601.2	601.5	601.8	602.1	602.4	602.7	603.0
152.5°	614.0	614.4	614.8	615.2	615.6	616.0	616.4	616.8	617.2	617.6	618.0
155°	631.0	631.5	632.0	632.5	633.0	633.5	634.0	634.5	635.0	635.5	636.0
157.5°	648.0	648.2	648.4	648.6	648.8	649.0	649.2	649.4	649.6	649.8	650.0
160°	664.0	663.7	663.4	663.1	662.8	662.5	662.2	661.9	661.6	661.3	661.0
162.5°	671.0	670.9	670.8	670.7	670.6	670.5	670.4	670.3	670.2	670.1	670.0
165°	677.0	677.3	677.6	677.9	678.2	678.5	678.8	679.1	679.4	679.7	680.0
167.5°	684.0	684.4	684.8	685.2	685.6	686.0	686.4	686.8	687.2	687.6	688.0
170°	689.0	689.5	690.0	690.5	691.0	691.5	692.0	692.5	693.0	693.5	694.0
172.5°	692.0	692.2	692.4	692.6	692.8	693.0	693.2	693.4	693.6	693.8	694.0
175°	695.0	695.1	695.2	695.3	695.4	695.5	695.6	695.7	695.8	695.9	696.0
177.5°	699.0	699.2	699.4	699.6	699.8	700.0	700.2	700.4	700.6	700.8	701.0
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0

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CANDELA DISTRIBUTION (continued):

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°
0°	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1
2.5°	362.8	363.5	363.2	361.7	361.3	361.3	360.6	360.2	359.4	359.1	359.8
5°	369.5	369.5	368.4	366.9	365.4	365.0	364.6	362.8	362.0	361.3	360.6
7.5°	375.8	375.1	373.6	371.0	369.5	369.1	367.6	365.8	363.9	362.4	361.7
10°	382.5	381.7	378.8	376.9	373.9	373.6	371.0	368.7	366.9	365.0	363.5
12.5°	392.1	391.4	388.1	383.6	381.4	379.9	376.5	373.9	371.3	369.1	366.5
15°	407.0	404.0	401.8	397.4	394.0	391.0	386.9	383.2	379.5	375.8	373.6
17.5°	427.8	423.7	417.8	415.2	410.7	405.9	400.3	397.7	392.9	388.4	384.0
20°	455.0	450.9	441.6	438.2	431.9	424.9	420.4	414.8	410.7	403.7	398.8
22.5°	485.1	481.4	472.4	463.5	457.6	452.0	444.9	437.9	430.1	423.4	418.2
25°	524.1	518.5	510.7	501.8	492.9	485.1	475.4	465.4	458.7	449.4	442.0
27.5°	577.3	567.6	554.6	544.9	537.9	526.0	514.1	505.1	494.7	482.5	474.3
30°	634.9	624.1	614.4	603.3	591.4	579.9	563.5	550.5	539.3	526.3	513.0
32.5°	698.8	689.5	675.8	661.3	648.3	633.8	621.9	608.1	588.8	575.0	560.9
35°	763.1	752.3	738.2	725.9	711.1	696.2	682.8	664.6	647.1	627.4	607.7
37.5°	825.2	815.9	800.3	781.7	768.7	752.7	738.9	719.6	698.8	676.9	662.0
40°	894.3	879.5	868.7	847.1	833.7	815.9	796.2	781.3	761.3	737.5	716.3
42.5°	973.5	963.1	951.6	934.1	920.0	898.8	873.9	854.9	836.3	808.1	778.7
45°	1073.9	1067.2	1048.2	1034.1	1015.1	992.8	971.3	948.2	918.9	886.1	859.4
47.5°	1194.3	1189.1	1172.0	1151.9	1127.0	1096.9	1076.8	1045.2	1020.3	979.4	947.5
50°	1303.6	1306.2	1296.9	1266.0	1243.7	1213.6	1182.0	1154.5	1116.2	1073.9	1033.0
52.5°	1434.0	1431.4	1408.0	1390.9	1364.5	1328.1	1293.5	1258.2	1216.2	1172.4	1121.4
55°	1558.9	1566.7	1550.4	1526.2	1494.3	1443.3	1408.4	1362.7	1318.4	1270.1	1211.4
57.5°	1680.1	1705.0	1692.4	1663.8	1631.0	1594.2	1548.2	1496.9	1451.1	1387.9	1321.8
60°	1831.0	1864.1	1869.3	1850.7	1815.0	1772.3	1711.7	1671.6	1608.7	1550.4	1499.5
62.5°	2063.3	2138.4	2134.0	2142.9	2117.6	2091.2	2020.2	1977.1	1895.3	1853.3	1782.3
65°	2451.4	2506.8	2573.3	2571.1	2553.6	2490.4	2416.8	2344.7	2290.8	2207.9	2134.0
67.5°	2777.0	2822.7	2862.1	2841.7	2801.5	2730.5	2644.3	2543.9	2461.8	2370.4	2273.3
69°	2807.5	2863.2	2886.3	2861.0	2788.9	2696.3	2612.0	2518.7	2405.7	2327.2	2209.0
70°	2725.7	2780.7	2827.2	2762.1	2696.0	2605.7	2513.5	2416.5	2315.4	2231.0	2111.7
72.5°	2165.2	2227.3	2220.9	2213.9	2161.1	2070.8	1986.0	1934.0	1863.0	1761.1	1674.9
75°	1259.0	1287.6	1237.4	1290.2	1227.0	1135.9	1147.8	1089.1	1037.1	978.3	933.0
77.5°	494.4	519.6	493.3	484.7	456.5	450.1	402.9	408.5	385.1	339.0	317.8
80°	187.3	190.7	186.2	176.9	175.1	164.3	161.3	150.9	146.1	130.8	125.3
82.5°	100.7	102.6	99.6	96.6	94.4	88.1	84.0	76.2	71.7	66.9	66.5
85°	58.0	56.5	55.0	53.5	50.2	46.5	43.5	40.5	37.2	34.6	32.0
87.5°	30.5	30.9	31.2	29.7	27.5	24.5	22.7	21.6	19.0	17.8	16.7
90°	18.8	16.0	16.9	19.0	18.0	16.0	15.4	14.1	12.8	12.6	11.5
92.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
95°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
97.5°	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.2	8.1	8.0	8.0
100°	22.6	22.2	21.8	21.4	21.0	20.6	20.2	19.8	19.4	19.0	19.0
102.5°	41.7	41.4	41.1	40.8	40.5	40.2	39.9	39.6	39.3	39.0	38.8
105°	64.6	64.2	63.8	63.4	63.0	62.6	62.2	61.8	61.4	61.0	61.0
107.5°	89.7	89.4	89.1	88.8	88.5	88.2	87.9	87.6	87.3	87.0	86.8

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REPORT N
CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°	
110°	118.7	118.4	118.1	117.8	117.5	117.2	116.9	116.6	116.3	116.0	116.2	0°
112.5°	148.8	148.6	148.4	148.2	148.0	147.8	147.6	147.4	147.2	147.0	147.0	2.5°
115°	178.8	178.6	178.4	178.2	178.0	177.8	177.6	177.4	177.2	177.0	177.2	5°
117.5°	209.8	209.6	209.4	209.2	209.0	208.8	208.6	208.4	208.2	208.0	208.2	7.5°
120°	244.8	244.6	244.4	244.2	244.0	243.8	243.6	243.4	243.2	243.0	243.0	10°
122.5°	277.8	277.6	277.4	277.2	277.0	276.8	276.6	276.4	276.2	276.0	276.2	12.5°
125°	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	15°
127.5°	345.9	345.8	345.7	345.6	345.5	345.4	345.3	345.2	345.1	345.0	345.4	17.5°
130°	380.8	380.6	380.4	380.2	380.0	379.8	379.6	379.4	379.2	379.0	379.2	20°
132.5°	414.0	414.0	414.0	414.0	414.0	414.0	414.0	414.0	414.0	414.0	414.2	22.5°
135°	447.3	447.6	447.9	448.2	448.5	448.8	449.1	449.4	449.7	450.0	450.2	25°
137.5°	476.5	477.0	477.5	478.0	478.5	479.0	479.5	480.0	480.5	481.0	481.2	27.5°
140°	504.5	505.0	505.5	506.0	506.5	507.0	507.5	508.0	508.5	509.0	509.4	30°
142.5°	533.1	533.2	533.3	533.4	533.5	533.6	533.7	533.8	533.9	534.0	534.4	32.5°
145°	560.7	560.4	560.1	559.8	559.5	559.2	558.9	558.6	558.3	558.0	558.4	35°
147.5°	585.7	585.4	585.1	584.8	584.5	584.2	583.9	583.6	583.3	583.0	583.4	37.5°
150°	603.3	603.6	603.9	604.2	604.5	604.8	605.1	605.4	605.7	606.0	606.8	40°
152.5°	618.5	619.0	619.5	620.0	620.5	621.0	621.5	622.0	622.5	623.0	624.0	42.5°
155°	636.2	636.4	636.6	636.8	637.0	637.2	637.4	637.6	637.8	638.0	638.6	45°
157.5°	650.0	650.0	650.0	650.0	650.0	650.0	650.0	650.0	650.0	650.0	651.0	47.5°
160°	660.9	660.8	660.7	660.6	660.5	660.4	660.3	660.2	660.1	660.0	661.2	50°
162.5°	669.8	669.6	669.4	669.2	669.0	668.8	668.6	668.4	668.2	668.0	669.2	52.5°
165°	679.8	679.6	679.4	679.2	679.0	678.8	678.6	678.4	678.2	678.0	678.8	55°
167.5°	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	689.2	57.5°
170°	694.2	694.4	694.6	694.8	695.0	695.2	695.4	695.6	695.8	696.0	697.0	60°
172.5°	694.2	694.4	694.6	694.8	695.0	695.2	695.4	695.6	695.8	696.0	697.0	62.5°
175°	695.8	695.6	695.4	695.2	695.0	694.8	694.6	694.4	694.2	694.0	695.0	65°
177.5°	700.7	700.4	700.1	699.8	699.5	699.2	698.9	698.6	698.3	698.0	698.8	67.5°
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	69°
												70°
												72.5°
												75°
												77.5°
												80°
												82.5°
												85°
												87.5°
												90°
												92.5°
												95°
												97.5°
												100°
												102.5°
												105°
												107.5°

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DISTRIBUTION (continued):

CANDELA DISTRIBUTION

87°	88°	89°	90°	95°	105°	115°	125°	135°	145°	155°	110°	87°
356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	356.1	110°	116.4
358.7	358.7	357.6	356.8	354.2	349.8	345.3	341.2	335.6	333.4	330.4	112.5°	147.0
359.8	359.1	358.0	356.5	351.3	340.9	330.1	318.6	306.7	295.9	283.2	115°	177.4
360.6	359.1	357.6	355.7	348.3	332.3	310.7	288.1	266.9	250.9	244.2	117.5°	208.4
360.9	359.8	358.0	355.3	344.9	321.2	286.6	253.9	235.3	229.0	227.9	120°	243.0
365.0	363.2	360.2	357.2	343.5	308.9	259.5	228.2	220.8	223.8	229.0	122.5°	276.4
370.2	368.0	364.3	361.3	342.7	292.9	233.1	213.7	216.3	224.5	233.1	125°	310.0
379.5	375.8	371.7	368.7	344.2	273.2	211.9	206.3	214.1	224.5	236.0	127.5°	345.8
393.3	388.1	383.2	378.0	346.4	248.7	199.2	201.5	210.8	221.9	234.5	130°	379.4
410.4	404.4	397.7	389.9	349.0	227.5	192.2	196.3	204.8	214.5	224.9	132.5°	414.4
433.4	425.2	416.7	407.0	352.7	204.4	185.9	190.3	195.5	201.1	206.3	135°	450.4
462.4	451.2	442.0	428.9	356.5	188.8	180.6	182.1	183.3	184.0	183.6	137.5°	481.4
501.1	484.0	473.2	457.2	360.6	180.6	174.7	172.8	171.0	168.4	165.4	140°	509.8
541.9	527.8	510.7	490.3	363.2	175.1	169.1	163.2	158.0	155.4	155.4	142.5°	534.8
589.5	572.1	550.5	524.8	359.8	169.1	161.7	153.9	150.9	154.3	153.1	145°	558.8
637.1	612.9	589.2	559.8	351.6	162.4	153.5	149.4	151.7	147.2	144.6	147.5°	583.8
689.5	662.7	629.7	595.5	339.7	155.4	149.4	151.7	143.8	138.6	140.9	150°	607.6
748.2	716.6	681.0	634.5	331.9	150.9	143.1	145.0	138.3	134.6	133.4	152.5°	625.0
828.2	783.2	739.7	685.1	337.9	143.8	130.8	138.3	134.6	131.2	128.2	155°	639.2
906.6	858.6	807.3	743.0	348.3	138.6	121.2	131.2	133.8	128.2	122.7	157.5°	652.0
985.4	934.5	874.6	802.9	360.9	135.3	113.7	122.7	132.0	125.3	120.8	160°	662.4
1068.3	1004.0	942.6	865.3	377.3	132.0	107.8	115.2	128.6	125.3	118.6	162.5°	670.4
1155.3	1079.4	1018.1	934.5	405.9	127.1	100.4	109.3	125.3	124.9	116.3	165°	679.6
1256.4	1188.7	1109.9	1024.8	445.7	121.5	93.7	104.8	122.3	123.4	113.7	167.5°	690.4
1428.5	1358.6	1263.4	1182.4	524.5	114.1	89.6	100.4	117.5	120.4	111.5	170°	698.0
1707.6	1612.5	1525.1	1449.3	659.4	103.7	86.6	95.5	112.3	116.7	109.7	172.5°	698.0
2027.7	1934.7	1829.2	1701.7	734.5	94.0	82.5	89.6	107.1	113.0	107.8	175°	696.0
2163.7	2042.1	1913.9	1762.6	662.7	86.2	78.1	84.0	101.1	107.8	105.2	177.5°	699.6
2101.2	1978.2	1829.2	1680.8	576.5	82.1	75.5	81.0	96.6	104.4	102.6	180°	700.0
1992.7	1868.9	1735.9	1557.8	514.8	79.9	73.6	79.2	94.8	102.6	101.1		
1576.0	1465.6	1343.0	1207.3	350.9	72.5	67.7	73.6	87.4	95.9	95.5		
835.2	802.9	712.2	632.6	181.8	64.7	61.3	67.3	80.7	89.6	89.6		
300.7	272.8	260.9	216.7	96.6	56.5	55.0	59.5	73.2	81.8	81.4		
113.7	110.8	99.2	92.9	61.3	46.1	46.5	50.9	64.3	72.5	72.1		
64.3	58.4	56.5	54.6	39.0	36.4	38.3	42.7	55.0	62.1	63.2		
30.9	28.6	27.9	26.0	25.6	27.9	30.1	33.8	43.9	52.4	51.3		
14.9	14.1	13.8	13.4	18.2	17.8	21.9	23.4	29.4	41.6	37.5		
11.8	11.8	11.5	10.7	12.2	14.9	16.1	17.0	19.3	32.2	27.7		
6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	6.0	6.0		
7.0	7.0	7.0	7.0	7.0	7.0	8.0	7.0	7.0	7.0	7.0		
8.0	8.0	8.0	8.0	8.0	9.0	10.0	12.0	9.0	9.0	8.0		
19.0	19.0	19.0	19.0	19.0	23.0	26.0	29.0	21.0	12.0	10.0		
38.6	38.4	38.2	38.0	39.0	42.0	47.0	50.0	40.0	27.0	18.0		
61.0	61.0	61.0	61.0	61.0	65.0	70.0	72.0	63.0	48.0	36.0		
86.6	86.4	86.2	86.0	87.0	90.0	94.0	95.0	88.0	73.0	58.0		

'226311
IST-AF-450-LED-E1-T2-8030-ULG

REPORT NUMBER: P226311
CATALOG NUMBER: IST-AF-450

TION (continued):

CANDELA DISTRIBUTION (con

88°	89°	90°	95°	105°	115°	125°	135°	145°	155°		165°	175°
116.6	116.8	117.0	116.0	119.0	121.0	120.0	114.0	102.0	87.0	0°	356.1	356.1
147.0	147.0	147.0	147.0	149.0	150.0	148.0	143.0	134.0	121.0	2.5°	327.8	322.6
177.6	177.8	178.0	177.0	179.0	182.0	179.0	174.0	168.0	159.0	5°	273.9	273.2
208.6	208.8	209.0	208.0	210.0	215.0	211.0	205.0	202.0	197.0	7.5°	240.1	235.3
243.0	243.0	243.0	243.0	245.0	250.0	246.0	243.0	237.0	233.0	10°	229.0	228.6
276.6	276.8	277.0	276.0	278.0	283.0	279.0	277.0	271.0	267.0	12.5°	233.8	234.9
310.0	310.0	310.0	310.0	310.0	315.0	313.0	310.0	305.0	299.0	15°	240.1	242.4
346.2	346.6	347.0	345.0	346.0	346.0	345.0	340.0	339.0	333.0	17.5°	244.2	248.3
379.6	379.8	380.0	379.0	381.0	381.0	377.0	372.0	370.0	366.0	20°	243.1	247.9
414.6	414.8	415.0	414.0	414.0	416.0	411.0	405.0	404.0	401.0	22.5°	230.8	233.1
450.6	450.8	451.0	450.0	447.0	448.0	443.0	437.0	435.0	432.0	25°	208.9	209.6
481.6	481.8	482.0	481.0	476.0	475.0	473.0	468.0	464.0	460.0	27.5°	182.5	181.8
510.2	510.6	511.0	509.0	504.0	502.0	500.0	497.0	491.0	489.0	30°	163.9	159.1
535.2	535.6	536.0	534.0	533.0	533.0	527.0	525.0	521.0	518.0	32.5°	155.4	152.4
559.2	559.6	560.0	558.0	561.0	562.0	556.0	551.0	550.0	547.0	35°	149.4	144.6
584.2	584.6	585.0	583.0	586.0	585.0	580.0	575.0	574.0	574.0	37.5°	155.0	154.6
608.4	609.2	610.0	606.0	603.0	600.0	597.0	593.0	593.0	593.0	40°	160.2	159.5
626.0	627.0	628.0	623.0	618.0	614.0	611.0	610.0	610.0	609.0	42.5°	151.3	144.6
639.8	640.4	641.0	638.0	636.0	631.0	626.0	628.0	630.0	627.0	45°	134.9	127.1
653.0	654.0	655.0	650.0	650.0	648.0	644.0	645.0	646.0	644.0	47.5°	123.8	119.3
663.6	664.8	666.0	660.0	661.0	664.0	658.0	655.0	655.0	656.0	50°	118.6	117.1
671.6	672.8	674.0	668.0	670.0	671.0	667.0	663.0	661.0	665.0	52.5°	117.1	120.8
680.4	681.2	682.0	678.0	680.0	677.0	672.0	673.0	673.0	676.0	55°	116.3	120.4
691.6	692.8	694.0	688.0	688.0	684.0	678.0	685.0	688.0	686.0	57.5°	111.1	118.2
699.0	700.0	701.0	696.0	694.0	689.0	686.0	691.0	693.0	692.0	60°	107.4	116.0
699.0	700.0	701.0	696.0	694.0	692.0	689.0	690.0	690.0	693.0	62.5°	105.2	114.9
697.0	698.0	699.0	694.0	696.0	695.0	690.0	690.0	691.0	695.0	65°	103.3	115.6
700.4	701.2	702.0	698.0	701.0	699.0	694.0	695.0	697.0	699.0	67.5°	100.4	117.8
700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	69°	98.9	117.5
										70°	97.4	116.3
										72.5°	92.2	107.4
										75°	85.9	94.8
										77.5°	77.7	81.4
										80°	68.8	71.0
										82.5°	59.8	68.4
										85°	46.8	58.0
										87.5°	34.6	32.0
										90°	26.7	19.5
										92.5°	5.0	4.0
										95°	6.0	5.0
										97.5°	8.0	7.0
										100°	9.0	8.0
										102.5°	13.0	11.0
										105°	27.0	22.0
										107.5°	49.0	42.0

0-LED-E1-T2-8030-ULG

REPORT NUMBER: P226311

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tinued):

180°
356.1
323.8
271.0
235.7
229.7
234.2
243.1
249.8
249.0
234.9
210.4
184.7
162.8
155.7
146.8
156.5
160.9
146.1
127.1
118.6
116.3
121.9
120.1
118.6
116.3
114.5
114.1
114.9
113.4
111.5
100.4
90.3
81.4
71.7
60.6
45.3
34.6
17.3
4.0
5.0
7.0
8.0
11.0
21.0
41.0

CANDELA DISTRIBUTION (continued):

	165°	175°	180°
110°	74.0	68.0	66.0
112.5°	106.0	99.0	99.0
115°	147.0	139.0	140.0
117.5°	189.0	184.0	184.0
120°	226.0	223.0	225.0
122.5°	261.0	260.0	263.0
125°	296.0	294.0	298.0
127.5°	329.0	329.0	330.0
130°	362.0	361.0	363.0
132.5°	393.0	394.0	396.0
135°	426.0	426.0	429.0
137.5°	459.0	457.0	460.0
140°	487.0	485.0	488.0
142.5°	517.0	515.0	518.0
145°	544.0	546.0	550.0
147.5°	571.0	572.0	575.0
150°	593.0	592.0	595.0
152.5°	608.0	608.0	611.0
155°	625.0	625.0	629.0
157.5°	643.0	643.0	646.0
160°	659.0	660.0	663.0
162.5°	669.0	669.0	673.0
165°	676.0	678.0	681.0
167.5°	684.0	687.0	690.0
170°	692.0	695.0	698.0
172.5°	695.0	697.0	699.0
175°	697.0	698.0	700.0
177.5°	700.0	705.0	707.0
180°	700.0	700.0	700.0

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