

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: P227671

Luminaire Tested: **ISS-AF-450-LED-E1-T3-8030-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P227671
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29759)-DOWNLIGHT AND
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: ISS-AF-450-LED-E1-T3-8030-ULG
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE III, 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: 3869.2 lumens
Efficiency: N/A
Efficacy: 92.1 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B1 - U5 - G1

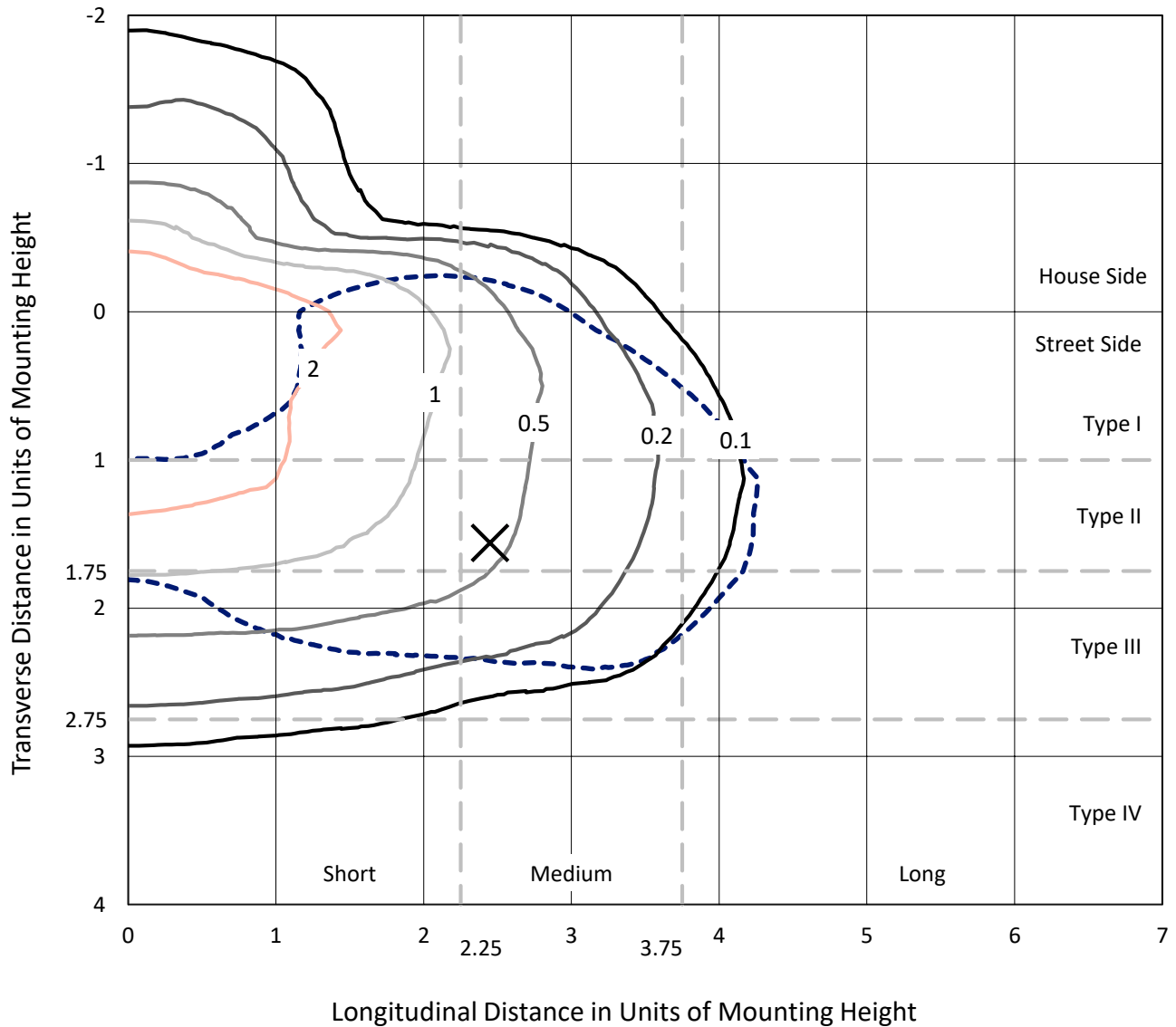
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

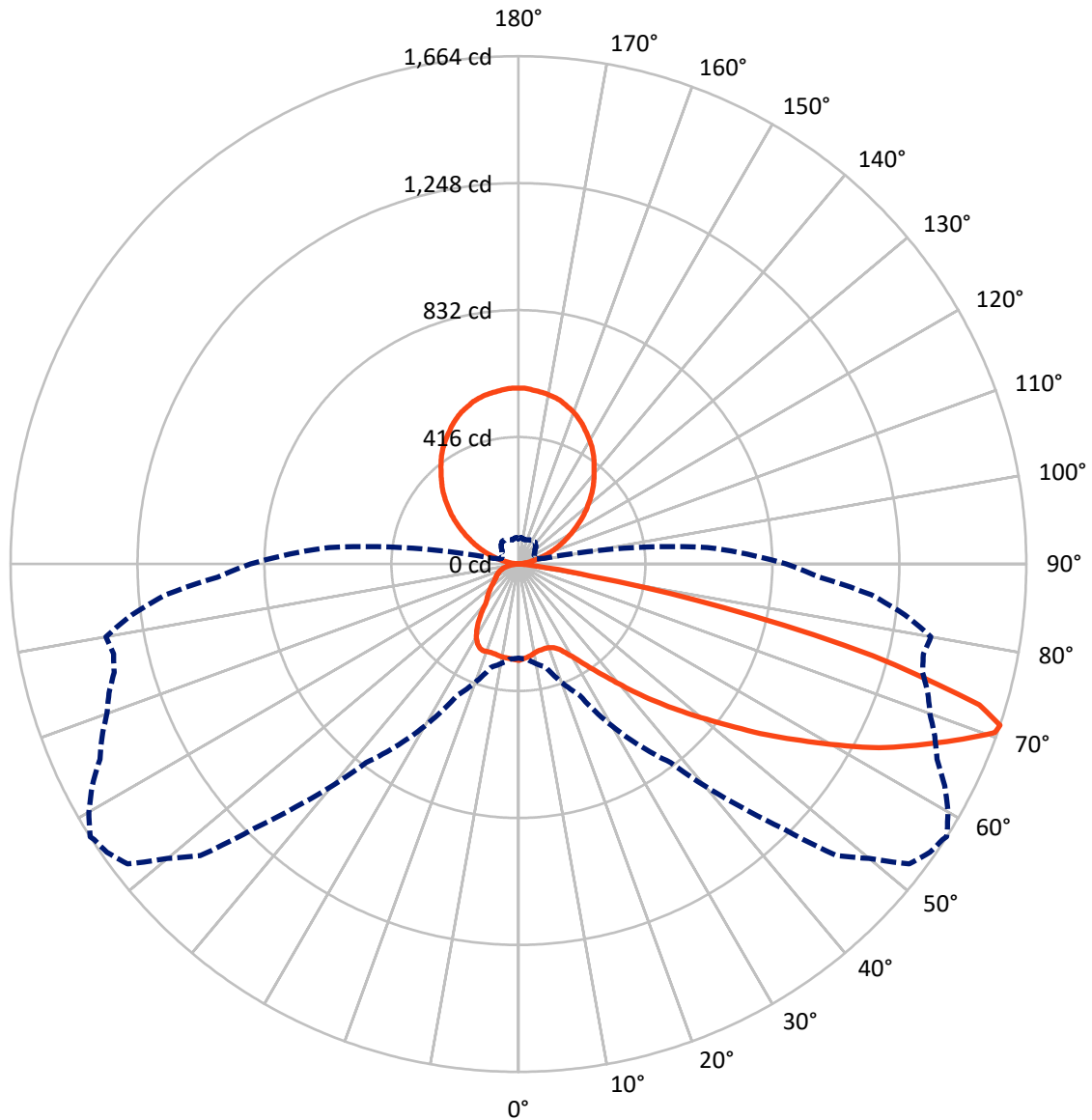
× Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



— Vertical Plane Through 57.5-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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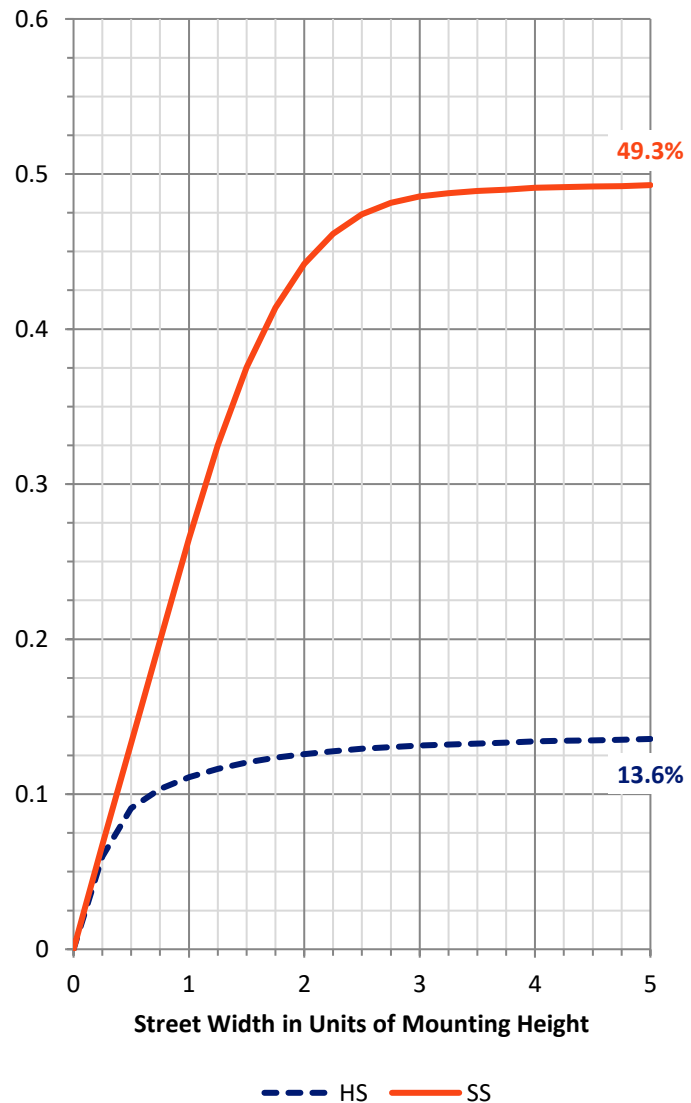
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	531.9	713.1	1244.9
	% Fixture	13.7	18.4	32.2
Street Side	Lumens	1911.1	713.1	2624.2
	% Fixture	49.4	18.4	67.8
Total	Lumens	2443.0	1426.2	3869.2
	% Fixture	63.1	36.9	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	29.7	0.8
10°-20°	85.6	2.2
20°-30°	142.1	3.7
30°-40°	226.2	5.8
40°-50°	367.4	9.5
50°-60°	550.9	14.2
60°-70°	657.2	17.0
70°-80°	355.0	9.2
80°-90°	28.9	0.7
90°-100°	4.7	0.1
100°-110°	69.0	1.8
110°-120°	153.0	4.0
120°-130°	223.9	5.8
130°-140°	265.6	6.9
140°-150°	269.3	7.0
150°-160°	231.1	6.0
160°-170°	155.1	4.0
170°-180°	54.3	1.4
0°-90°	2443.0	63.1
0°-180°	3869.2	100.0

Coefficient of Utilization



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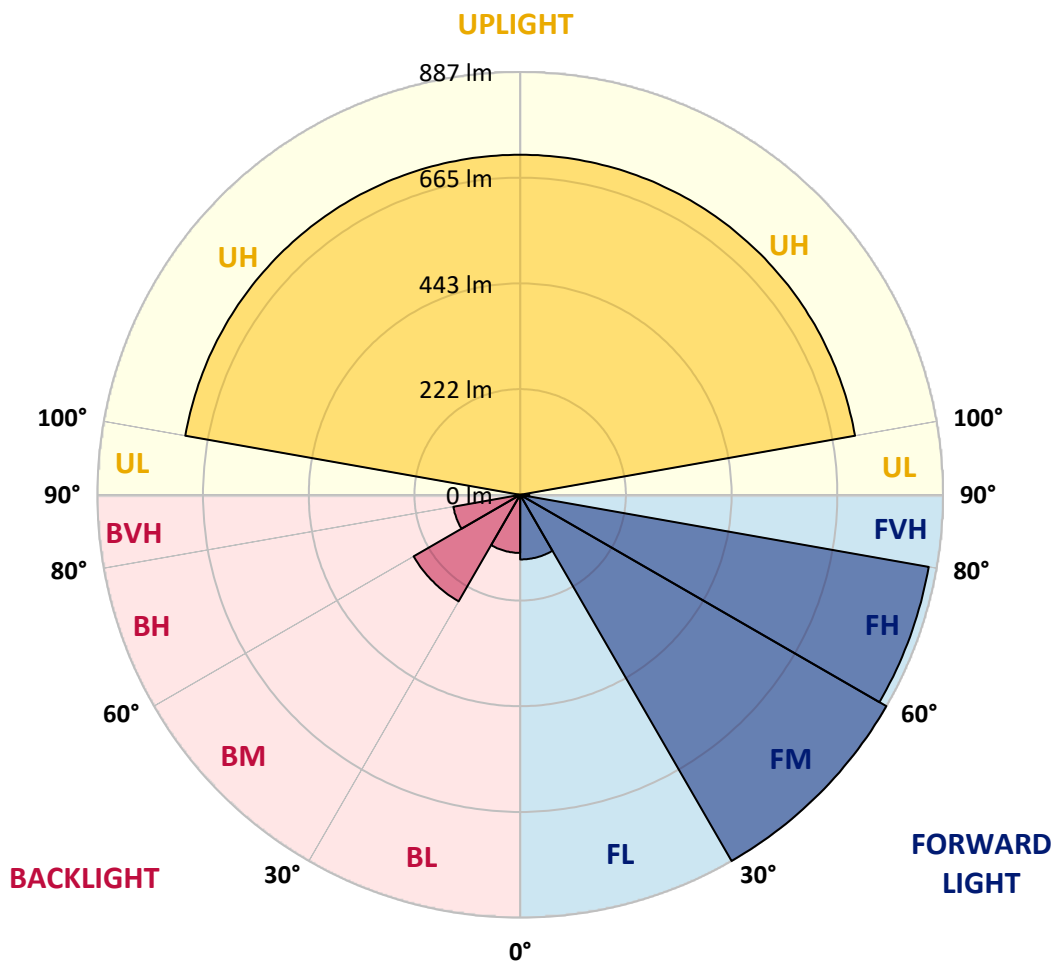
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	135.5	3.5			
FM	(30°-60°)	886.6	22.9			
FH	(60°-80°)	869.9	22.5			G1/1800
FVH	(80°-90°)	19.0	0.5			G1/100
BL	(0°-30°)	121.8	3.1	B1/500		
BM	(30°-60°)	257.9	6.7	B1/1000		
BH	(60°-80°)	142.3	3.7	B1/500		G1/500
BVH	(80°-90°)	9.9	0.3			G0/10
UL	(90°-100°)	4.7	0.1		U1/10	
UH	(100°-180°)	713.1	18.4		U4/1000	

BUG Rating: B1-U5-G1

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
0°	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6
2.5°	315.6	314.8	314.0	314.0	314.0	313.2	310.8	311.6	314.0	312.4	314.8
5°	314.8	313.2	312.4	312.4	312.4	309.9	309.1	308.3	313.2	309.1	312.4
7.5°	305.9	305.9	304.3	305.9	307.5	305.1	303.5	304.3	308.3	304.3	308.3
10°	299.5	297.8	297.0	297.0	298.6	295.4	293.8	295.4	300.3	295.4	301.1
12.5°	297.0	297.8	295.4	295.4	294.6	290.6	290.6	290.6	294.6	290.6	295.4
15°	301.1	300.3	297.8	296.2	293.8	290.6	289.8	290.6	293.8	289.0	294.6
17.5°	306.7	306.7	302.7	298.6	296.2	293.0	293.0	291.4	293.8	290.6	294.6
20°	321.2	318.8	313.2	306.7	300.3	298.6	295.4	295.4	297.0	293.8	296.2
22.5°	346.3	343.8	334.2	322.1	311.6	307.5	305.9	305.1	303.5	301.9	301.9
25°	379.4	375.3	364.0	349.5	331.7	328.5	325.3	322.9	317.2	317.2	313.2
27.5°	414.9	410.8	398.7	382.6	360.8	356.0	351.9	348.7	339.0	339.0	331.7
30°	455.2	450.4	435.9	418.1	393.1	391.5	385.8	381.0	368.1	367.3	357.6
32.5°	502.1	495.6	481.1	457.7	431.0	431.8	423.0	419.7	402.8	403.6	390.7
35°	555.3	548.1	533.5	502.9	475.4	477.8	469.8	464.1	443.1	443.1	429.4
37.5°	611.8	611.8	593.3	557.7	524.7	530.3	520.6	515.0	494.0	497.2	475.4
40°	674.8	678.8	658.6	618.3	584.4	586.8	579.5	573.1	548.1	553.7	530.3
42.5°	741.0	748.2	730.5	688.5	650.6	658.6	646.5	640.1	613.4	625.5	598.1
45°	837.0	838.6	805.5	765.2	733.7	741.0	724.0	721.6	688.5	701.4	674.0
47.5°	897.6	893.5	869.3	845.1	826.5	841.1	825.7	821.7	783.8	792.6	753.9
50°	938.7	941.1	922.6	920.2	923.4	950.8	948.4	940.3	895.1	888.7	840.3
52.5°	975.9	965.4	962.1	984.7	1019.4	1051.7	1064.6	1054.1	1004.9	987.2	940.3
55°	969.4	954.1	971.0	1025.9	1094.5	1144.5	1146.2	1138.9	1094.5	1087.2	1036.4
57.5°	925.8	929.0	963.7	1042.0	1158.3	1209.9	1218.8	1209.9	1173.6	1180.1	1138.1
60°	865.3	871.7	926.6	1027.5	1209.1	1253.5	1257.6	1268.0	1243.8	1260.8	1231.7
62.5°	774.9	783.8	854.0	991.2	1173.6	1239.8	1276.9	1301.1	1296.3	1335.0	1319.7
65°	711.9	711.9	780.5	949.2	1138.9	1226.1	1281.8	1327.0	1333.4	1394.8	1389.1
67.5°	594.9	598.9	657.8	832.2	1096.9	1195.4	1279.3	1356.0	1394.8	1491.6	1496.5
70°	411.7	414.9	453.6	594.1	886.3	970.2	1093.7	1218.8	1335.0	1481.1	1557.0
71°	308.3	312.4	350.3	473.8	750.7	820.1	948.4	1078.4	1224.5	1414.1	1499.7
72.5°	150.9	153.4	190.5	304.3	522.2	611.0	685.3	809.6	964.6	1181.7	1302.8
75°	70.2	71.0	79.1	109.8	199.4	237.3	270.4	350.3	446.4	636.8	783.8
77.5°	51.7	51.7	56.5	71.8	103.3	104.9	103.3	105.7	127.5	182.4	274.4
80°	37.9	37.9	41.2	48.4	68.6	68.6	66.2	67.0	64.6	67.0	75.9
82.5°	25.0	25.0	26.6	29.1	42.0	42.0	40.4	40.4	38.7	37.9	41.2
85°	14.5	15.3	16.1	13.7	17.8	17.0	15.3	17.0	16.1	14.5	17.8
87.5°	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	2.0	2.0	2.0	3.0	4.0	5.2	6.5	7.8	9.0	10.0	11.0
100°	8.0	8.0	10.0	14.0	22.0	24.0	26.0	28.0	30.0	30.5	31.0
102.5°	28.0	28.0	32.0	38.0	45.0	46.2	47.5	48.8	50.0	50.2	50.5
105°	54.0	54.0	56.0	61.0	66.0	67.0	68.0	69.0	70.0	70.2	70.5
107.5°	78.0	77.0	80.0	84.0	88.0	88.8	89.5	90.2	91.0	91.5	92.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
110°	101.0	102.0	103.0	106.0	110.0	110.5	111.0	111.5	112.0	112.5	113.0
112.5°	124.0	124.0	126.0	129.0	132.0	132.5	133.0	133.5	134.0	134.5	135.0
115°	146.0	147.0	149.0	151.0	154.0	154.5	155.0	155.5	156.0	156.5	157.0
117.5°	169.0	170.0	172.0	174.0	177.0	177.5	178.0	178.5	179.0	179.2	179.5
120°	193.0	195.0	196.0	198.0	201.0	201.2	201.5	201.8	202.0	202.5	203.0
122.5°	219.0	220.0	221.0	223.0	226.0	226.2	226.5	226.8	227.0	227.2	227.5
125°	244.0	246.0	247.0	248.0	251.0	251.2	251.5	251.8	252.0	252.2	252.5
127.5°	267.0	269.0	270.0	272.0	274.0	274.5	275.0	275.5	276.0	276.5	277.0
130°	290.0	292.0	293.0	294.0	298.0	298.2	298.5	298.8	299.0	299.5	300.0
132.5°	313.0	314.0	317.0	318.0	321.0	321.2	321.5	321.8	322.0	322.8	323.5
135°	336.0	337.0	339.0	341.0	345.0	345.0	345.0	345.0	345.0	345.8	346.5
137.5°	359.0	360.0	363.0	364.0	367.0	367.0	367.0	367.0	367.0	367.5	368.0
140°	382.0	383.0	385.0	386.0	388.0	388.2	388.5	388.8	389.0	389.2	389.5
142.5°	404.0	406.0	408.0	407.0	410.0	410.0	410.0	410.0	410.0	410.5	411.0
145°	425.0	426.0	428.0	428.0	431.0	431.2	431.5	431.8	432.0	432.5	433.0
147.5°	444.0	444.0	447.0	448.0	452.0	452.2	452.5	452.8	453.0	453.2	453.5
150°	461.0	462.0	464.0	465.0	469.0	469.2	469.5	469.8	470.0	470.2	470.5
152.5°	479.0	480.0	483.0	482.0	485.0	485.2	485.5	485.8	486.0	486.2	486.5
155°	499.0	500.0	502.0	501.0	503.0	503.0	503.0	503.0	503.0	503.2	503.5
157.5°	513.0	515.0	517.0	516.0	519.0	519.0	519.0	519.0	519.0	519.0	519.0
160°	525.0	527.0	529.0	529.0	532.0	532.0	532.0	532.0	532.0	532.0	532.0
162.5°	535.0	536.0	539.0	538.0	541.0	541.0	541.0	541.0	541.0	541.2	541.5
165°	546.0	547.0	549.0	548.0	552.0	552.0	552.0	552.0	552.0	552.2	552.5
167.5°	555.0	556.0	559.0	558.0	561.0	560.8	560.5	560.2	560.0	560.0	560.0
170°	562.0	563.0	566.0	565.0	567.0	566.8	566.5	566.2	566.0	565.8	565.5
172.5°	565.0	566.0	569.0	567.0	569.0	568.8	568.5	568.2	568.0	568.2	568.5
175°	567.0	569.0	570.0	569.0	572.0	572.0	572.0	572.0	572.0	572.2	572.5
177.5°	572.0	573.0	575.0	574.0	578.0	577.8	577.5	577.2	577.0	577.0	577.0
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0



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CANDELA DISTRIBUTION (continued):

	52.5°	55°	57°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6
2.5°	311.6	314.0	314.0	310.8	313.2	310.8	312.4	309.9	312.4	308.3	313.2
5°	309.1	311.6	311.6	306.7	311.6	306.7	310.8	305.1	310.8	304.3	310.8
7.5°	302.7	308.3	308.3	301.9	307.5	302.7	307.5	301.9	306.7	299.5	307.5
10°	295.4	301.1	301.9	295.4	301.9	296.2	303.5	296.2	303.5	295.4	304.3
12.5°	290.6	297.0	298.6	291.4	299.5	292.2	301.1	293.0	301.1	292.2	302.7
15°	289.8	295.4	297.0	290.6	297.8	289.8	300.3	290.6	301.1	291.4	303.5
17.5°	290.6	295.4	297.0	289.8	297.0	290.6	299.5	291.4	301.1	292.2	303.5
20°	293.0	296.2	296.2	292.2	297.8	292.2	299.5	291.4	301.9	293.8	304.3
22.5°	300.3	301.1	301.1	297.8	301.1	297.0	302.7	297.0	304.3	297.8	307.5
25°	312.4	311.6	309.9	309.1	309.9	307.5	310.8	306.7	314.0	308.3	318.0
27.5°	333.4	330.1	328.5	328.5	327.7	328.5	328.5	326.9	330.1	328.5	335.0
30°	359.2	353.5	351.1	353.5	350.3	353.5	352.7	351.9	355.1	353.5	359.2
32.5°	393.1	383.4	381.8	386.6	380.2	385.8	381.0	383.4	385.8	387.4	390.7
35°	432.6	421.3	419.7	424.6	417.3	425.4	419.7	423.0	424.6	428.6	431.0
37.5°	479.5	465.7	463.3	469.8	460.1	469.0	460.9	470.6	468.2	473.8	476.2
40°	536.0	519.8	514.2	523.0	511.7	519.0	510.9	521.4	519.0	530.3	532.7
42.5°	605.4	582.0	576.3	585.2	568.2	570.7	564.2	576.3	574.7	590.0	592.5
45°	677.2	649.0	640.9	649.8	630.4	635.2	625.5	638.5	637.7	649.8	659.4
47.5°	757.1	722.4	711.9	721.6	698.2	703.8	694.2	707.9	708.7	722.4	732.1
50°	840.3	803.9	790.2	799.1	777.3	781.3	771.6	788.6	787.8	806.4	813.6
52.5°	930.7	893.5	883.0	887.1	861.2	866.1	858.0	879.0	874.2	885.5	900.0
55°	1030.7	988.0	975.9	988.0	957.3	963.7	953.3	972.6	964.6	979.1	983.1
57.5°	1133.2	1091.3	1081.6	1090.5	1061.4	1066.3	1052.5	1068.7	1062.2	1071.9	1078.4
60°	1242.2	1204.3	1194.6	1204.3	1176.0	1176.8	1153.4	1170.4	1160.7	1172.8	1170.4
62.5°	1346.3	1314.1	1311.6	1325.4	1289.8	1285.8	1257.6	1269.7	1255.9	1264.0	1254.3
65°	1435.1	1416.6	1419.8	1431.1	1399.6	1389.9	1357.6	1364.1	1343.9	1343.9	1331.8
67.5°	1551.4	1531.2	1531.2	1540.9	1501.3	1476.3	1431.9	1426.2	1393.2	1386.7	1358.4
70°	1648.2	1653.9	1647.4	1655.5	1608.7	1557.8	1498.9	1470.6	1427.1	1406.1	1373.0
71°	1613.5	1645.8	1657.1	1663.6	1624.8	1574.0	1512.6	1476.3	1434.3	1406.1	1370.6
72.5°	1456.1	1534.4	1578.8	1578.8	1583.6	1551.4	1492.4	1452.9	1405.3	1368.1	1335.0
75°	1020.2	1147.8	1205.1	1198.6	1240.6	1255.1	1260.0	1243.0	1216.4	1163.1	1139.7
77.5°	454.4	598.9	685.3	686.1	731.3	770.8	802.3	835.4	823.3	797.5	795.9
80°	103.3	187.3	239.7	242.1	283.3	319.6	341.4	374.5	378.6	341.4	320.4
82.5°	44.4	52.5	59.7	58.9	72.6	87.2	103.3	112.2	108.2	89.6	84.8
85°	18.6	24.2	25.8	24.2	29.9	33.1	38.7	39.6	46.0	41.2	43.6
87.5°	0.0	0.8	0.8	0.0	1.6	0.0	1.6	0.8	4.0	1.6	4.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	12.0	13.0	11.8	11.5	10.0	8.5	7.0	6.5	6.0	5.5	5.0
100°	31.5	32.0	31.6	31.5	31.0	30.5	30.0	29.2	28.5	27.8	27.0
102.5°	50.8	51.0	50.8	50.8	50.5	50.2	50.0	49.5	49.0	48.5	48.0
105°	70.8	71.0	71.0	71.0	71.0	71.0	71.0	70.5	70.0	69.5	69.0
107.5°	92.5	93.0	92.8	92.8	92.5	92.2	92.0	91.8	91.5	91.2	91.0



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CANDELA DISTRIBUTION (continued):

	52.5°	55°	57°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
110°	113.5	114.0	114.0	114.0	114.0	114.0	114.0	113.8	113.5	113.2	113.0
112.5°	135.5	136.0	136.0	136.0	136.0	136.0	136.0	135.8	135.5	135.2	135.0
115°	157.5	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0
117.5°	179.8	180.0	180.2	180.2	180.5	180.8	181.0	180.8	180.5	180.2	180.0
120°	203.5	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
122.5°	227.8	228.0	228.0	228.0	228.0	228.0	228.0	228.2	228.5	228.8	229.0
125°	252.8	253.0	253.2	253.2	253.5	253.8	254.0	254.0	254.0	254.0	254.0
127.5°	277.5	278.0	277.8	277.8	277.5	277.2	277.0	277.2	277.5	277.8	278.0
130°	300.5	301.0	301.0	301.0	301.0	301.0	301.0	301.2	301.5	301.8	302.0
132.5°	324.2	325.0	325.0	325.0	325.0	325.0	325.0	325.2	325.5	325.8	326.0
135°	347.2	348.0	348.0	348.0	348.0	348.0	348.0	348.2	348.5	348.8	349.0
137.5°	368.5	369.0	369.0	369.0	369.0	369.0	369.0	369.2	369.5	369.8	370.0
140°	389.8	390.0	390.0	390.0	390.0	390.0	390.0	390.5	391.0	391.5	392.0
142.5°	411.5	412.0	412.0	412.0	412.0	412.0	412.0	412.2	412.5	412.8	413.0
145°	433.5	434.0	433.8	433.8	433.5	433.2	433.0	433.2	433.5	433.8	434.0
147.5°	453.8	454.0	453.6	453.6	453.0	452.5	452.0	452.2	452.5	452.8	453.0
150°	470.8	471.0	470.6	470.6	470.0	469.5	469.0	469.0	469.0	469.0	469.0
152.5°	486.8	487.0	486.8	486.8	486.5	486.2	486.0	486.0	486.0	486.0	486.0
155°	503.8	504.0	503.8	503.8	503.5	503.2	503.0	503.2	503.5	503.8	504.0
157.5°	519.0	519.0	518.6	518.6	518.0	517.5	517.0	517.2	517.5	517.8	518.0
160°	532.0	532.0	531.6	531.6	531.0	530.5	530.0	530.0	530.0	530.0	530.0
162.5°	541.8	542.0	541.6	541.6	541.0	540.5	540.0	539.5	539.0	538.5	538.0
165°	552.8	553.0	552.4	552.4	551.5	550.8	550.0	549.5	549.0	548.5	548.0
167.5°	560.0	560.0	559.6	559.6	559.0	558.5	558.0	558.2	558.5	558.8	559.0
170°	565.2	565.0	564.8	564.8	564.5	564.2	564.0	564.5	565.0	565.5	566.0
172.5°	568.8	569.0	568.6	568.6	568.0	567.5	567.0	567.2	567.5	567.8	568.0
175°	572.8	573.0	572.4	572.4	571.5	570.8	570.0	569.5	569.0	568.5	568.0
177.5°	577.0	577.0	576.4	576.4	575.5	574.8	574.0	574.0	574.0	574.0	574.0
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0



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CATALOG NUMBER: ISS-AF-450-LED-E1-T3-8030-ULG

CANDELA DISTRIBUTION (continued):

	77.5°	80°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°
0°	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6
2.5°	309.9	314.0	309.9	314.0	311.6	314.0	313.2	314.0	309.9	314.0	309.1
5°	304.3	310.8	305.1	309.9	305.1	310.8	310.8	310.8	305.1	311.6	305.9
7.5°	299.5	306.7	299.5	306.7	301.9	307.5	307.5	309.9	303.5	310.8	302.7
10°	294.6	303.5	294.6	305.1	297.0	305.9	306.7	308.3	299.5	309.1	301.1
12.5°	292.2	303.5	293.0	303.5	293.8	305.9	306.7	308.3	298.6	310.8	300.3
15°	292.2	304.3	293.0	304.3	293.8	305.9	307.5	309.1	298.6	311.6	300.3
17.5°	292.2	304.3	294.6	305.1	295.4	306.7	308.3	309.9	300.3	311.6	301.9
20°	294.6	305.9	296.2	307.5	297.8	309.1	309.9	312.4	301.9	312.4	303.5
22.5°	300.3	309.9	301.9	312.4	305.1	314.0	314.8	317.2	309.1	318.0	310.8
25°	309.9	320.4	314.0	322.1	318.0	325.3	326.9	326.9	323.7	329.3	326.9
27.5°	330.1	338.2	333.4	340.6	338.2	343.8	343.8	344.7	347.1	348.7	351.1
30°	356.0	361.6	360.0	364.0	364.8	368.1	368.1	372.9	382.6	372.9	372.1
32.5°	390.7	393.9	394.7	396.3	399.5	402.0	405.2	410.8	418.9	396.3	389.0
35°	433.4	434.3	436.7	439.1	444.7	446.4	456.9	452.8	452.8	417.3	402.0
37.5°	480.3	480.3	486.7	486.7	500.4	501.2	511.7	490.8	478.6	432.6	410.0
40°	539.2	538.4	545.6	547.3	565.8	566.6	565.0	519.0	493.2	436.7	406.0
42.5°	601.3	603.8	613.4	616.7	630.4	635.2	615.1	538.4	499.6	434.3	392.3
45°	669.1	674.0	686.1	695.0	709.5	703.8	655.4	547.3	492.4	419.7	365.6
47.5°	743.4	748.2	757.9	774.9	781.3	774.9	688.5	550.5	481.1	397.1	326.9
50°	818.5	826.5	840.3	864.5	867.7	851.6	728.9	562.6	472.2	373.7	282.5
52.5°	903.2	911.3	927.4	967.8	959.7	926.6	776.5	585.2	474.6	359.2	244.6
55°	992.8	1004.1	1035.6	1075.1	1057.4	1005.7	829.0	618.3	484.3	343.8	202.6
57.5°	1087.2	1099.3	1140.5	1187.3	1152.6	1083.2	882.2	644.1	489.1	312.4	156.6
60°	1180.9	1197.8	1251.1	1289.8	1235.8	1149.4	929.8	661.1	476.2	252.6	121.1
62.5°	1266.4	1293.9	1353.6	1374.6	1288.2	1191.4	955.7	649.0	423.8	174.3	97.7
65°	1327.0	1362.5	1401.2	1398.8	1278.5	1177.6	936.3	593.3	315.6	115.4	83.1
67.5°	1352.8	1385.9	1394.8	1353.6	1209.1	1117.1	866.9	477.8	181.6	86.4	72.6
70°	1362.5	1390.7	1340.7	1241.4	1073.5	968.6	708.7	304.3	99.3	70.2	63.0
71°	1358.4	1372.2	1276.9	1160.7	987.2	877.4	621.5	231.7	84.8	65.4	59.7
72.5°	1303.6	1284.2	1137.3	1008.1	837.0	725.6	483.5	146.1	69.4	58.9	55.7
75°	1065.4	978.3	837.0	715.1	569.9	456.0	262.3	75.1	55.7	50.9	48.4
77.5°	696.6	620.7	504.5	410.0	311.6	236.5	107.4	51.7	44.4	42.8	42.0
80°	248.6	199.4	150.9	132.4	100.1	82.3	52.5	39.6	34.7	35.5	34.7
82.5°	70.2	64.6	55.7	51.7	45.2	44.4	33.9	29.9	27.4	29.1	28.3
85°	34.7	29.9	21.8	21.0	16.1	18.6	17.0	20.2	17.8	18.6	17.0
87.5°	2.4	3.2	0.8	2.4	0.0	2.4	3.2	4.0	0.8	3.2	2.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	4.8	4.5	4.2	4.0	4.0	4.0	4.0	4.5	4.8	5.0	5.5
100°	26.8	26.5	26.2	26.0	25.5	25.0	26.0	26.5	26.8	27.0	27.8
102.5°	48.2	48.5	48.8	49.0	48.5	48.0	49.0	48.5	48.2	48.0	48.5
105°	69.5	70.0	70.5	71.0	70.0	69.0	71.0	70.0	69.5	69.0	69.5
107.5°	91.2	91.5	91.8	92.0	91.5	91.0	92.0	91.5	91.2	91.0	91.2



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REPORT N
 CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

	77.5°	80°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°	
110°	113.2	113.5	113.8	114.0	113.5	113.0	114.0	113.5	113.2	113.0	113.2	0°
112.5°	135.5	136.0	136.5	137.0	136.0	135.0	137.0	136.0	135.5	135.0	135.2	2.5°
115°	158.5	159.0	159.5	160.0	159.5	159.0	160.0	159.0	158.5	158.0	158.0	5°
117.5°	180.5	181.0	181.5	182.0	181.0	180.0	182.0	181.0	180.5	180.0	180.2	7.5°
120°	204.5	205.0	205.5	206.0	205.0	204.0	206.0	205.0	204.5	204.0	204.0	10°
122.5°	230.0	231.0	232.0	233.0	232.5	232.0	233.0	231.0	230.0	229.0	228.8	12.5°
125°	254.8	255.5	256.2	257.0	256.5	256.0	257.0	255.5	254.8	254.0	254.0	15°
127.5°	278.8	279.5	280.2	281.0	279.5	278.0	281.0	279.5	278.8	278.0	277.8	17.5°
130°	302.8	303.5	304.2	305.0	304.0	303.0	305.0	303.5	302.8	302.0	301.8	20°
132.5°	326.8	327.5	328.2	329.0	328.0	327.0	329.0	327.5	326.8	326.0	325.8	22.5°
135°	349.5	350.0	350.5	351.0	350.5	350.0	351.0	350.0	349.5	349.0	348.8	25°
137.5°	371.0	372.0	373.0	374.0	373.0	372.0	374.0	372.0	371.0	370.0	369.8	27.5°
140°	393.0	394.0	395.0	396.0	395.0	394.0	396.0	394.0	393.0	392.0	391.5	30°
142.5°	413.8	414.5	415.2	416.0	415.5	415.0	416.0	414.5	413.8	413.0	412.8	32.5°
145°	434.8	435.5	436.2	437.0	436.0	435.0	437.0	435.5	434.8	434.0	433.8	35°
147.5°	453.8	454.5	455.2	456.0	454.5	453.0	456.0	454.5	453.8	453.0	452.8	37.5°
150°	470.0	471.0	472.0	473.0	471.5	470.0	473.0	471.0	470.0	469.0	469.0	40°
152.5°	486.8	487.5	488.2	489.0	487.5	486.0	489.0	487.5	486.8	486.0	486.0	42.5°
155°	504.8	505.5	506.2	507.0	506.0	505.0	507.0	505.5	504.8	504.0	503.8	45°
157.5°	519.2	520.5	521.8	523.0	521.5	520.0	523.0	520.5	519.2	518.0	517.8	47.5°
160°	530.8	531.5	532.2	533.0	532.0	531.0	533.0	531.5	530.8	530.0	530.0	50°
162.5°	538.5	539.0	539.5	540.0	538.5	537.0	540.0	539.0	538.5	538.0	538.5	52.5°
165°	548.5	549.0	549.5	550.0	549.0	548.0	550.0	549.0	548.5	548.0	548.5	55°
167.5°	560.0	561.0	562.0	563.0	562.0	561.0	563.0	561.0	560.0	559.0	558.8	57.5°
170°	567.2	568.5	569.8	571.0	570.0	569.0	571.0	568.5	567.2	566.0	565.5	60°
172.5°	568.8	569.5	570.2	571.0	569.5	568.0	571.0	569.5	568.8	568.0	567.8	62.5°
175°	568.8	569.5	570.2	571.0	569.5	568.0	571.0	569.5	568.8	568.0	568.5	65°
177.5°	574.8	575.5	576.2	577.0	575.5	574.0	577.0	575.5	574.8	574.0	574.0	67.5°
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°
												71°
												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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REPORT NUMBER: P
 CATALOG NUMBER:

DISTRIBUTION (continued):

CANDELA DISTRIBUTION

110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	110°	110°
315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	110°	113.5
314.8	311.6	315.6	311.6	315.6	313.2	315.6	313.2	315.6	317.2	317.2	112.5°	135.5
313.2	307.5	314.8	310.8	315.6	311.6	314.8	312.4	316.4	318.0	319.6	115°	158.0
312.4	306.7	314.0	308.3	315.6	309.9	314.8	311.6	316.4	318.0	321.2	117.5°	180.5
311.6	304.3	314.0	305.9	314.8	309.1	314.8	309.9	315.6	317.2	318.0	120°	204.0
311.6	303.5	314.0	305.1	314.8	306.7	314.0	306.7	314.8	314.0	311.6	122.5°	228.5
312.4	301.9	314.0	303.5	314.0	304.3	313.2	303.5	311.6	309.1	307.5	125°	254.0
312.4	301.9	313.2	302.7	312.4	303.5	310.8	301.9	309.1	308.3	305.9	127.5°	277.5
314.0	303.5	313.2	305.9	313.2	304.3	309.9	301.9	307.5	302.7	293.0	130°	301.5
318.8	311.6	318.8	311.6	314.8	306.7	309.1	299.5	298.6	290.6	275.2	132.5°	325.5
330.1	326.9	325.3	316.4	314.0	303.5	300.3	289.0	284.9	272.8	251.8	135°	348.5
344.7	337.4	327.7	317.2	306.7	293.8	284.9	276.0	267.2	251.8	225.2	137.5°	369.5
354.3	343.8	323.7	309.1	289.8	279.3	263.9	254.3	241.3	222.0	196.1	140°	391.0
360.8	344.7	314.0	297.0	271.2	257.5	237.3	226.8	208.2	189.7	171.1	142.5°	412.5
362.4	341.4	301.1	282.5	248.6	233.3	206.6	195.3	177.6	164.7	157.4	145°	433.5
356.0	330.1	280.9	256.7	219.5	201.8	176.8	168.7	158.2	153.4	150.1	147.5°	452.5
343.0	308.3	249.4	221.2	183.2	169.5	156.6	156.6	150.9	148.5	142.9	150°	469.0
319.6	276.0	209.1	181.6	155.8	153.4	146.1	149.3	145.3	143.7	135.6	152.5°	486.0
283.3	230.0	168.7	152.6	140.4	142.1	137.2	140.4	138.0	137.2	127.5	155°	503.5
236.5	183.2	142.1	136.4	128.3	130.8	126.7	130.8	128.3	129.1	121.9	157.5°	517.5
188.9	148.5	125.9	122.7	117.0	118.7	116.2	120.3	119.5	122.7	118.7	160°	530.0
150.9	126.7	112.2	109.8	106.5	107.4	106.5	110.6	111.4	117.8	117.8	162.5°	539.0
125.1	109.0	100.9	100.1	96.9	97.7	98.5	102.5	105.7	113.8	117.8	165°	549.0
107.4	97.7	92.0	91.2	89.6	90.4	92.0	96.9	100.1	110.6	119.5	167.5°	558.5
94.4	88.8	84.8	84.8	83.1	84.8	86.4	91.2	95.2	107.4	116.2	170°	565.0
84.8	80.7	78.3	79.1	78.3	79.9	81.5	86.4	91.2	102.5	111.4	172.5°	567.5
75.9	73.5	71.8	72.6	72.6	75.1	76.7	81.5	85.6	96.1	107.4	175°	569.0
68.6	67.0	66.2	67.0	67.8	70.2	72.6	75.9	79.1	88.8	101.7	177.5°	574.0
63.0	61.3	61.3	61.3	62.2	64.6	67.8	69.4	72.6	83.1	95.2	180°	576.0
59.7	58.9	58.9	58.9	59.7	62.2	65.4	67.0	70.2	80.7	92.0		
55.7	55.7	56.5	55.7	57.3	58.1	61.3	63.0	67.0	77.5	88.0		
49.2	49.2	50.0	50.0	51.7	51.7	54.1	55.7	60.5	69.4	79.1		
43.6	43.6	45.2	44.4	44.4	42.8	46.0	47.6	51.7	60.5	70.2		
37.1	36.3	37.9	35.5	34.7	33.1	35.5	37.9	44.4	50.0	51.7		
29.1	26.6	27.4	25.0	25.0	23.4	25.8	26.6	30.7	36.3	39.6		
17.8	14.5	16.1	13.7	15.3	13.7	14.5	15.3	18.6	22.6	21.8		
4.0	2.4	3.2	0.8	2.4	0.0	2.4	0.8	2.4	0.8	0.0		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
6.0	6.5	7.0	8.5	10.0	11.5	13.0	12.0	11.0	9.0	4.0		
28.5	29.2	30.0	30.5	31.0	31.5	32.0	31.5	31.0	30.0	22.0		
49.0	49.5	50.0	50.2	50.5	50.8	51.0	50.8	50.5	50.0	45.0		
70.0	70.5	71.0	71.0	71.0	71.0	71.0	70.8	70.5	70.0	66.0		
91.5	91.8	92.0	92.2	92.5	92.8	93.0	92.5	92.0	91.0	88.0		

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 ISS-AF-450-LED-E1-T3-8030-ULG

REPORT NUMBER: P227671
 CATALOG NUMBER: ISS-AF-450

TION (continued):

CANDELA DISTRIBUTION (con

112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°		155°	165°
113.8	114.0	114.0	114.0	114.0	114.0	113.5	113.0	112.0	110.0	0°	315.6	315.6
135.8	136.0	136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	2.5°	318.8	318.0
158.0	158.0	158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	5°	322.9	322.9
180.8	181.0	180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	7.5°	323.7	325.3
204.0	204.0	204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	10°	318.0	316.4
228.2	228.0	228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	12.5°	309.1	307.5
254.0	254.0	253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	15°	308.3	307.5
277.2	277.0	277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	17.5°	302.7	298.6
301.2	301.0	301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	20°	286.5	279.3
325.2	325.0	325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	22.5°	263.9	253.4
348.2	348.0	348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	25°	236.5	222.0
369.2	369.0	369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	27.5°	206.6	192.1
390.5	390.0	390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	30°	183.2	171.9
412.2	412.0	412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	32.5°	166.3	159.8
433.2	433.0	433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	35°	152.6	148.5
452.2	452.0	452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	37.5°	143.7	137.2
469.0	469.0	469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	40°	134.8	126.7
486.0	486.0	486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	42.5°	126.7	118.7
503.2	503.0	503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	45°	118.7	113.0
517.2	517.0	517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	47.5°	114.6	109.8
530.0	530.0	530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	50°	113.0	108.2
539.5	540.0	540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	52.5°	114.6	110.6
549.5	550.0	550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	55°	117.8	115.4
558.2	558.0	558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	57.5°	114.6	110.6
564.5	564.0	564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	60°	107.4	100.9
567.2	567.0	567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	62.5°	102.5	96.1
569.5	570.0	570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	65°	98.5	93.6
574.0	574.0	574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	67.5°	94.4	89.6
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	89.6	84.8
										71°	87.2	81.5
										72.5°	83.1	76.7
										75°	75.1	68.6
										77.5°	62.2	54.9
										80°	47.6	42.8
										82.5°	35.5	31.5
										85°	18.6	14.5
										87.5°	0.0	0.0
										90°	0.0	0.0
										92.5°	0.0	0.0
										95°	1.0	1.0
										97.5°	3.0	2.0
										100°	14.0	10.0
										102.5°	38.0	32.0
										105°	61.0	56.0
										107.5°	84.0	80.0



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tinued):

175°	180°
315.6	315.6
318.8	318.0
323.7	324.5
326.9	326.1
318.0	316.4
309.1	309.1
308.3	308.3
297.0	296.2
277.7	275.2
250.2	247.8
216.3	213.1
186.5	186.5
166.3	166.3
155.8	156.6
146.1	146.9
131.6	131.6
119.5	119.5
113.8	113.0
109.0	108.2
105.7	104.9
102.5	102.5
100.1	100.1
100.1	98.5
100.9	98.5
99.3	97.7
99.3	98.5
100.9	99.3
100.9	97.7
92.0	86.4
87.2	82.3
78.3	75.1
67.0	66.2
52.5	51.7
42.8	40.4
30.7	26.6
12.1	12.1
0.0	0.0
0.0	0.0
0.0	0.0
1.0	1.0
2.0	2.0
8.0	8.0
28.0	28.0
54.0	54.0
77.0	78.0

CANDELA DISTRIBUTION (continued):

	155°	165°	175°
110°	106.0	103.0	102.0
112.5°	129.0	126.0	124.0
115°	151.0	149.0	147.0
117.5°	174.0	172.0	170.0
120°	198.0	196.0	195.0
122.5°	223.0	221.0	220.0
125°	248.0	247.0	246.0
127.5°	272.0	270.0	269.0
130°	294.0	293.0	292.0
132.5°	318.0	317.0	314.0
135°	341.0	339.0	337.0
137.5°	364.0	363.0	360.0
140°	386.0	385.0	383.0
142.5°	407.0	408.0	406.0
145°	428.0	428.0	426.0
147.5°	448.0	447.0	444.0
150°	465.0	464.0	462.0
152.5°	482.0	483.0	480.0
155°	501.0	502.0	500.0
157.5°	516.0	517.0	515.0
160°	529.0	529.0	527.0
162.5°	538.0	539.0	536.0
165°	548.0	549.0	547.0
167.5°	558.0	559.0	556.0
170°	565.0	566.0	563.0
172.5°	567.0	569.0	566.0
175°	569.0	570.0	569.0
177.5°	574.0	575.0	573.0
180°	576.0	576.0	576.0



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<u>180°</u>
101.0
124.0
146.0
169.0
193.0
219.0
244.0
267.0
290.0
313.0
336.0
359.0
382.0
404.0
425.0
444.0
461.0
479.0
499.0
513.0
525.0
535.0
546.0
555.0
562.0
565.0
567.0
572.0
576.0

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