

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: INVUE

Report Number: P401581

Luminaire Tested: **ENT-SA1D-830-U-SLL-HSS**

Issue Date: 5/20/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P401581  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2004-754-8)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/20/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: ENT-SA1D-830-U-SLL-HSS  
Description: ENTRI LED LUMINAIRE  
(1) 80 CRI, 3000K, 800mA LIGHTSQUARE WITH 16 LEDS AND SPILL LIGHT  
ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3373 lumens  
Efficiency: N/A  
Efficacy: 78.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short - Semi-Cutoff  
BUG Rating: B1 - U0 - G1

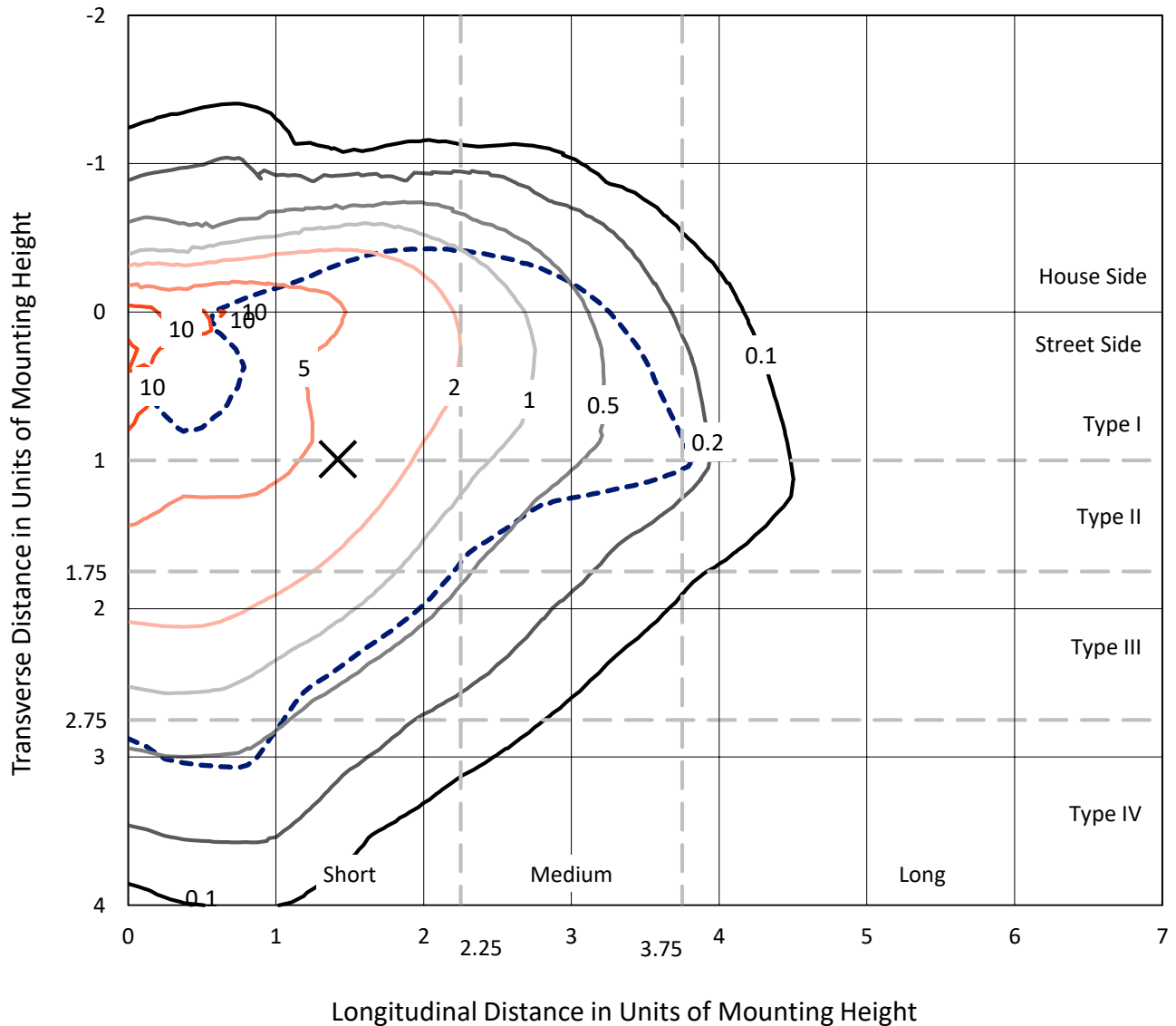
Input Watts (W): 43.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P401581  
 CATALOG NUMBER: ENT-SA1D-830-U-SLL-HSS

### Iso-Footcandle Lines of Horizontal Illumination

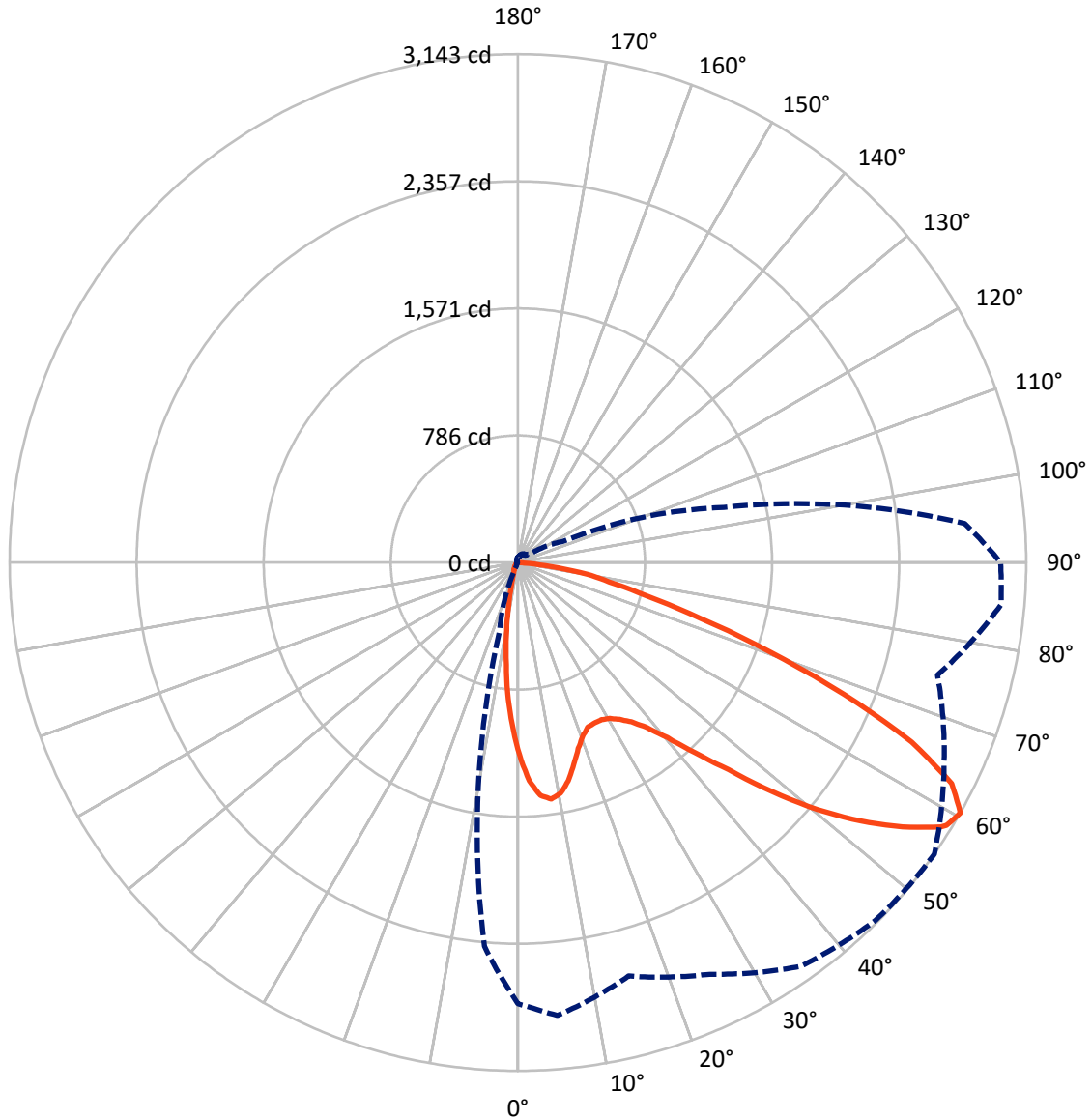
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.1 fc  
 Type III - Short - Semi-Cutoff

REPORT NUMBER: P401581  
CATALOG NUMBER: ENT-SA1D-830-U-SLL-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral      - - - Horizontal Cone Through 60-Deg Vertical

REPORT NUMBER: P401581

CATALOG NUMBER: ENT-SA1D-830-U-SLL-HSS

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	597.3	0.0	597.3
	% Fixture	17.7	0.0	17.7
<b>Street Side</b>	Lumens	2775.7	0.0	2775.7
	% Fixture	82.3	0.0	82.3
<b>Total</b>	Lumens	3373.0	0.0	3373.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	89.6	2.7
10°-20°	170.5	5.1
20°-30°	243.2	7.2
30°-40°	356.7	10.6
40°-50°	526.0	15.6
50°-60°	779.2	23.1
60°-70°	830.3	24.6
70°-80°	344.4	10.2
80°-90°	33.1	1.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	3373.0	100.0
0°-180°	3373.0	100.0

**Coefficient of Utilization**



REPORT NUMBER: P401581

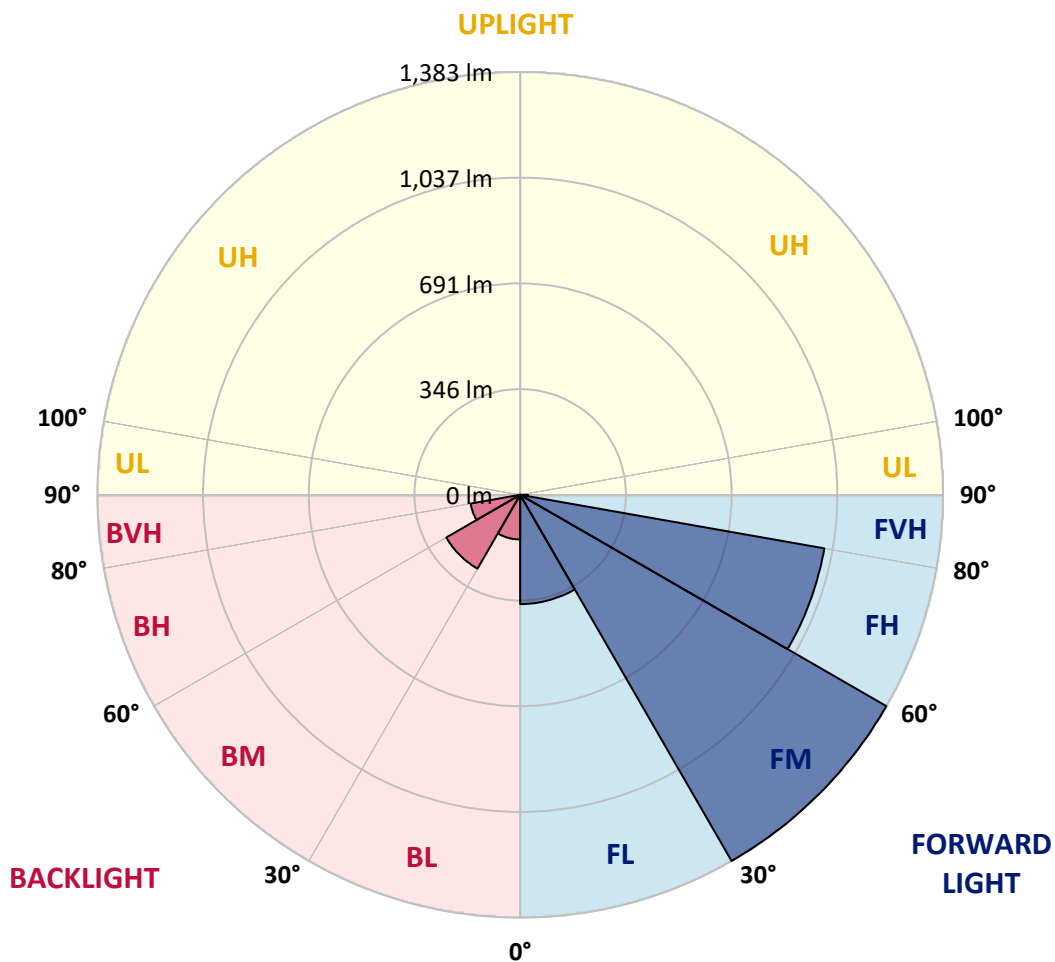
CATALOG NUMBER: ENT-SA1D-830-U-SLL-HSS

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	357.3	10.6			
FM	(30°-60°)	1383.0	41.0			
FH	(60°-80°)	1010.1	29.9			G1/1800
FVH	(80°-90°)	25.4	0.8			G1/100
BL	(0°-30°)	146.0	4.3	B1/500		
BM	(30°-60°)	278.9	8.3	B1/1000		
BH	(60°-80°)	164.7	4.9	B1/500		G1/500
BVH	(80°-90°)	7.7	0.2			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**

Type III Short





REPORT NUMBER: P401581

CATALOG NUMBER: ENT-SA1D-830-U-SLL-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2
2.5°	1244.1	1242.2	1260.1	1297.0	1320.0	1334.0	1336.6	1351.2	1336.6	1328.9	1301.5
5°	1207.8	1207.1	1241.6	1322.6	1388.9	1438.6	1462.8	1446.3	1420.8	1370.4	1309.2
7.5°	1107.0	1107.0	1172.1	1280.5	1391.4	1477.5	1506.8	1476.2	1415.7	1314.3	1204.6
10°	1024.8	1032.4	1094.9	1224.4	1347.4	1441.8	1474.3	1450.7	1371.7	1240.3	1111.5
12.5°	975.7	980.1	1049.6	1179.7	1294.5	1371.0	1390.8	1383.8	1326.4	1183.5	1047.1
15°	980.1	986.5	1066.2	1172.7	1247.3	1277.9	1284.9	1293.9	1270.3	1160.6	1026.0
17.5°	1050.3	1054.7	1135.1	1203.9	1200.8	1191.2	1193.7	1208.4	1236.5	1179.7	1068.8
20°	1162.5	1174.0	1255.0	1256.2	1176.5	1131.9	1120.4	1144.6	1220.5	1230.1	1159.9
22.5°	1306.6	1311.1	1393.3	1344.2	1179.1	1091.1	1077.7	1105.1	1225.6	1311.7	1286.2
25°	1473.7	1489.6	1534.3	1458.4	1216.1	1085.3	1076.4	1099.4	1244.1	1398.4	1416.3
27.5°	1586.6	1599.3	1642.0	1536.2	1249.2	1088.5	1071.9	1100.0	1266.4	1480.1	1555.3
30°	1687.3	1696.2	1712.2	1577.0	1286.8	1104.5	1077.7	1117.9	1278.6	1497.3	1645.2
32.5°	1782.3	1793.2	1783.6	1626.1	1328.3	1134.4	1088.5	1155.5	1304.7	1531.7	1723.7
35°	1904.8	1905.4	1872.9	1675.2	1375.5	1170.1	1120.4	1209.0	1355.7	1585.3	1807.8
37.5°	2050.1	2051.4	1969.2	1725.6	1429.0	1230.1	1195.7	1291.9	1429.7	1647.1	1928.4
40°	2177.0	2182.1	2073.1	1783.6	1494.7	1346.8	1343.6	1423.3	1524.7	1729.4	2057.8
42.5°	2287.4	2302.0	2168.8	1832.1	1587.8	1526.0	1533.6	1606.3	1640.1	1798.3	2138.1
45°	2399.0	2398.3	2247.2	1880.5	1743.4	1756.8	1829.5	1826.3	1770.8	1835.3	2201.3
47.5°	2468.5	2465.3	2295.0	1959.6	1953.2	2081.4	2158.6	2116.5	1915.6	1874.8	2280.4
50°	2495.3	2494.0	2332.6	2060.4	2166.8	2375.4	2485.7	2401.5	2092.9	1941.1	2374.7
52.5°	2571.1	2564.8	2419.4	2175.1	2360.1	2658.5	2749.7	2655.9	2269.5	2060.4	2484.4
55°	2689.7	2691.7	2568.6	2309.7	2515.0	2858.1	2969.7	2886.2	2450.0	2224.2	2634.9
57.5°	2769.5	2775.2	2733.7	2459.5	2680.8	2997.7	3106.2	3082.6	2690.4	2420.0	2811.5
58°	2777.1	2781.6	2759.9	2488.2	2705.7	3013.7	3124.6	3108.1	2743.3	2482.5	2853.6
60°	2728.0	2741.4	2810.9	2646.4	2808.4	3047.5	3127.8	3142.5	2907.2	2685.3	2997.7
62.5°	2594.7	2599.2	2725.5	2823.7	2878.5	2963.9	2971.6	3009.9	2974.8	2923.1	3126.6
65°	2431.5	2431.5	2567.9	2831.9	2696.8	2682.7	2638.1	2676.4	2777.7	3072.4	3117.6
67.5°	2147.7	2149.6	2323.7	2522.7	2235.7	2187.3	2158.6	2172.6	2388.8	2948.0	2944.2
70°	1735.8	1734.5	1913.7	2042.5	1659.2	1617.8	1652.2	1647.8	1940.5	2619.6	2570.5
72.5°	1227.5	1238.4	1422.7	1577.6	1126.8	971.2	1123.0	1181.6	1459.7	2208.3	1988.9
75°	691.2	705.9	856.4	1096.2	711.0	656.8	734.6	818.1	1055.4	1758.1	1335.9
77.5°	346.9	352.6	438.7	527.4	431.1	500.6	496.1	575.8	723.8	1186.1	763.9
80°	200.2	211.7	241.0	272.3	241.0	317.6	368.6	433.6	445.7	613.5	426.0
82.5°	80.3	89.9	112.9	128.2	100.1	94.4	64.4	202.8	268.5	296.5	163.2
85°	0.0	0.0	0.6	1.3	1.9	1.9	3.2	35.7	65.7	14.7	26.8
87.5°	0.0	0.0	0.6	0.6	1.3	1.9	2.6	4.5	5.7	7.0	24.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P401581

CATALOG NUMBER: ENT-SA1D-830-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2
2.5°	1291.3	1284.3	1260.7	1225.0	1202.7	1168.2	1154.2	1121.7	1105.1	1077.7	1077.7
5°	1278.6	1249.9	1190.6	1113.4	1058.6	1001.2	982.7	944.4	917.0	884.5	871.1
7.5°	1162.5	1122.3	1029.9	939.9	852.6	794.6	737.2	698.3	661.3	634.5	638.3
10°	1056.0	998.6	897.2	783.1	692.5	631.9	580.3	535.0	496.8	459.1	453.4
12.5°	986.5	920.8	799.7	677.2	609.6	565.0	517.2	467.4	420.2	378.8	362.2
15°	957.2	885.7	750.6	635.1	573.3	515.9	460.4	399.2	345.0	295.2	281.9
17.5°	989.0	903.6	746.1	607.1	521.0	448.9	371.8	304.8	241.0	205.3	194.5
20°	1075.8	964.8	760.8	579.0	463.0	369.9	275.5	199.6	163.9	142.2	135.2
22.5°	1201.4	1066.2	785.6	551.6	404.3	275.5	190.0	144.1	123.1	111.6	108.4
25°	1337.9	1196.9	831.5	528.6	345.6	204.7	140.9	118.0	105.2	96.9	93.7
27.5°	1491.5	1326.4	887.7	511.4	291.4	163.9	121.2	103.9	93.7	88.0	85.4
30°	1587.8	1419.5	930.4	480.8	254.4	149.2	115.4	98.2	87.4	82.9	81.0
32.5°	1676.5	1492.8	971.2	445.7	226.4	132.0	112.2	103.3	90.6	81.6	77.8
35°	1774.0	1568.1	991.0	424.7	207.9	114.8	92.5	80.3	73.3	72.1	70.1
37.5°	1919.4	1657.3	1003.7	413.2	196.4	104.6	86.1	72.7	64.4	56.8	53.6
40°	2057.2	1749.8	1010.1	402.4	190.7	98.2	82.3	68.9	59.9	52.9	49.7
42.5°	2164.9	1834.0	1013.9	394.7	180.5	94.4	79.1	66.3	56.8	49.7	46.6
45°	2252.9	1931.5	1010.7	392.2	172.2	96.9	77.8	64.4	54.2	47.2	44.0
47.5°	2339.0	2037.4	1022.8	389.0	163.9	93.1	78.4	63.8	52.3	45.3	42.1
50°	2451.9	2165.6	1066.8	380.1	158.1	87.4	84.8	64.4	51.7	44.0	41.4
52.5°	2597.9	2342.8	1146.6	370.5	151.1	82.3	88.6	64.4	50.4	42.7	39.5
55°	2775.2	2541.8	1234.6	356.5	139.0	75.9	84.8	64.4	49.1	42.1	38.3
57.5°	2919.9	2719.1	1304.1	339.9	116.7	68.2	77.8	61.9	45.9	39.5	36.3
58°	2932.7	2739.5	1313.6	335.4	114.1	67.0	75.9	61.2	44.6	38.9	35.7
60°	2984.4	2772.6	1317.5	311.2	95.0	63.8	65.7	59.3	42.1	36.3	33.8
62.5°	2966.5	2663.0	1236.5	268.5	84.8	58.0	54.8	60.6	38.9	33.2	30.6
65°	2877.9	2447.4	1083.4	240.4	85.4	51.7	47.2	52.9	35.7	30.0	27.4
67.5°	2666.8	2120.3	880.0	225.1	89.3	45.9	40.8	39.5	31.9	26.8	24.9
70°	2274.6	1737.7	667.0	211.7	94.4	40.8	37.6	35.1	29.3	24.9	22.3
72.5°	1675.2	1286.8	485.3	198.3	91.8	36.3	35.1	31.9	26.8	22.3	21.0
75°	1045.2	747.4	332.2	162.0	82.3	31.9	32.5	30.0	24.2	21.0	19.1
77.5°	610.3	524.8	163.9	120.5	56.8	28.1	28.7	27.4	24.9	19.8	18.5
80°	365.4	326.5	70.1	51.7	31.2	24.9	24.2	25.5	23.6	18.5	17.2
82.5°	158.1	141.6	33.8	28.7	25.5	21.7	21.0	21.7	20.4	15.3	14.7
85°	8.9	23.6	15.9	21.0	19.1	15.9	15.9	16.6	14.7	12.1	12.1
87.5°	8.3	17.9	10.2	12.8	14.0	12.1	12.8	12.8	12.1	10.8	10.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





REPORT NUMBER: P401581

CATALOG NUMBER: ENT-SA1D-830-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2
2.5°	1063.0	1056.0	1035.0	1027.3	994.1	1002.4	1005.0	1001.8	1003.1	1005.6	1015.2
5°	880.6	869.2	841.7	823.9	814.3	807.9	778.0	778.6	783.1	765.9	788.2
7.5°	625.6	638.3	640.9	624.3	614.1	592.4	565.0	549.7	523.5	538.2	541.4
10°	447.7	441.3	453.4	447.7	431.7	423.4	394.1	391.5	389.0	387.1	405.6
12.5°	341.2	322.0	308.0	311.2	299.1	278.7	273.6	274.2	276.8	276.8	281.9
15°	270.4	241.0	218.7	205.3	207.2	186.8	181.1	162.0	159.4	153.7	155.0
17.5°	189.4	177.3	163.9	148.6	142.2	123.7	101.4	91.2	83.5	84.8	88.6
20°	130.7	125.6	121.8	114.1	107.8	86.1	72.1	67.6	67.0	68.2	69.5
22.5°	105.2	100.1	96.3	93.7	85.4	69.5	61.9	58.7	58.7	58.7	59.3
25°	90.6	85.4	80.3	80.3	72.7	60.6	54.8	52.3	51.7	51.0	52.3
27.5°	84.2	77.2	72.1	68.9	63.1	53.6	48.5	45.9	45.3	45.3	45.9
30°	77.8	70.8	65.7	61.2	54.8	47.8	42.7	40.8	39.5	39.5	40.2
32.5°	74.0	67.0	60.6	54.8	47.8	42.1	37.6	35.1	33.8	34.4	35.1
35°	65.7	59.9	54.2	48.5	42.1	37.0	32.5	30.0	29.3	29.3	30.0
37.5°	51.7	47.2	45.9	42.7	37.0	31.9	27.4	24.9	24.2	24.2	24.9
40°	46.6	40.8	38.3	37.0	33.8	27.4	22.3	19.8	19.8	19.1	20.4
42.5°	42.7	37.0	32.5	31.2	29.3	23.6	17.9	15.9	15.3	15.3	15.9
45°	40.2	33.8	28.1	24.9	24.9	19.1	14.7	12.1	11.5	11.5	12.1
47.5°	38.9	31.9	24.9	20.4	19.8	15.9	11.5	8.9	8.3	8.3	8.3
50°	37.6	29.3	22.3	17.2	15.3	13.4	8.9	7.0	6.4	6.4	6.4
52.5°	35.7	28.1	20.4	15.3	12.1	10.2	7.0	5.1	4.5	3.8	4.5
55°	34.4	26.1	19.8	14.0	10.2	7.7	5.1	3.8	3.2	3.2	3.2
57.5°	32.5	24.2	17.9	13.4	9.6	5.7	3.8	2.6	1.9	1.9	2.6
58°	31.9	24.2	17.2	12.8	8.9	5.7	3.8	2.6	1.9	1.9	2.6
60°	30.0	22.3	16.6	11.5	8.3	5.1	3.2	1.9	1.3	1.3	1.9
62.5°	28.1	20.4	14.7	10.2	7.0	4.5	2.6	1.3	0.6	0.6	0.6
65°	24.9	18.5	12.8	9.6	5.7	3.2	1.9	0.6	0.0	0.0	0.0
67.5°	22.3	17.2	11.5	8.3	5.1	2.6	1.3	0.0	0.0	0.0	0.0
70°	20.4	15.9	10.2	7.0	4.5	1.9	0.6	0.0	0.0	0.0	0.0
72.5°	19.1	14.7	9.6	6.4	3.2	1.9	0.6	0.0	0.0	0.0	0.0
75°	18.5	14.0	9.6	5.7	3.2	1.9	1.3	0.6	0.0	0.0	0.6
77.5°	17.9	14.0	9.6	5.7	3.8	1.9	1.9	1.3	1.3	0.6	1.9
80°	16.6	12.8	8.3	5.1	3.2	2.6	1.9	1.3	0.0	0.0	0.0
82.5°	14.0	10.2	7.0	5.1	3.2	1.9	0.6	0.0	0.0	0.0	0.0
85°	11.5	8.3	5.7	3.2	1.9	0.6	0.0	0.0	0.0	0.0	0.0
87.5°	10.2	6.4	4.5	2.6	1.3	0.6	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P401581

CATALOG NUMBER: ENT-SA1D-830-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2	1191.2
2.5°	1023.5	1052.8	1064.9	1105.7	1123.6	1160.6	1192.5	1219.9	1233.3	1244.1
5°	793.9	822.0	851.9	912.5	964.8	1020.9	1091.1	1163.8	1184.8	1207.8
7.5°	554.1	595.6	646.0	700.2	774.8	859.6	960.3	1050.3	1095.5	1107.0
10°	430.4	479.5	533.1	586.7	648.5	739.1	840.5	956.5	1005.0	1024.8
12.5°	323.3	389.0	452.8	515.9	569.5	647.9	758.2	896.6	950.1	975.7
15°	194.5	268.5	346.9	431.7	506.3	598.1	722.5	883.8	951.4	980.1
17.5°	96.9	132.6	204.7	332.2	442.6	556.7	721.9	929.7	1013.3	1050.3
20°	72.1	81.6	109.0	207.2	367.9	522.3	729.5	1008.2	1131.2	1162.5
22.5°	61.9	68.9	78.4	121.2	275.5	490.4	756.3	1112.1	1265.2	1306.6
25°	54.2	59.9	67.6	83.5	188.8	452.8	806.7	1258.8	1416.9	1473.7
27.5°	47.8	52.9	59.3	70.1	126.3	382.0	835.4	1381.9	1539.4	1586.6
30°	42.1	45.9	52.3	59.9	93.1	295.2	862.1	1490.3	1650.3	1687.3
32.5°	37.0	40.2	45.3	51.0	70.8	223.8	863.4	1583.4	1747.2	1782.3
35°	31.2	35.1	38.9	44.0	56.1	174.7	837.3	1675.8	1862.0	1904.8
37.5°	26.1	29.3	33.8	38.3	51.0	135.2	783.1	1784.2	2001.7	2050.1
40°	22.3	25.5	29.3	34.4	45.3	98.2	696.3	1882.4	2132.4	2177.0
42.5°	17.9	21.0	25.5	33.8	37.6	70.8	609.0	1976.8	2245.9	2287.4
45°	14.0	17.9	23.6	32.5	31.2	49.7	533.7	2060.4	2343.5	2399.0
47.5°	10.2	14.7	23.6	29.3	25.5	35.7	495.5	2140.7	2430.8	2468.5
50°	7.7	12.1	25.5	24.9	21.7	30.6	501.2	2230.0	2471.0	2495.3
52.5°	5.7	10.2	19.8	17.9	18.5	26.8	523.5	2347.9	2553.9	2571.1
55°	5.1	7.7	12.1	13.4	16.6	25.5	517.8	2459.5	2659.8	2689.7
57.5°	4.5	6.4	9.6	10.8	14.7	24.2	485.3	2508.6	2728.0	2769.5
58°	3.8	6.4	8.9	10.8	14.7	23.6	477.0	2495.3	2724.8	2777.1
60°	3.2	5.7	8.3	9.6	12.8	21.0	436.8	2381.7	2654.7	2728.0
62.5°	2.6	3.8	6.4	7.0	10.2	17.2	359.7	2198.1	2504.2	2594.7
65°	1.3	2.6	3.8	5.1	7.0	12.8	255.7	1980.6	2342.8	2431.5
67.5°	0.0	1.3	2.6	3.2	4.5	9.6	147.3	1680.9	2077.6	2147.7
70°	0.0	0.6	1.3	1.9	2.6	6.4	77.8	1233.9	1609.5	1735.8
72.5°	0.6	0.6	0.6	0.0	1.3	5.1	34.4	732.1	1097.5	1227.5
75°	0.6	0.6	0.0	0.0	0.0	2.6	14.7	385.8	629.4	691.2
77.5°	2.6	1.3	0.0	0.0	0.0	0.6	7.0	207.9	326.5	346.9
80°	0.6	0.0	0.0	0.0	0.0	0.0	2.6	69.5	195.8	200.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	84.2	80.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)