

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: P400861

Luminaire Tested: **ENT-SA1-830-U-SLL-HSS-XXB**

Issue Date: 5/20/2020

Test Information

Test Method: LM-79-08
Report Number: P400861
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-SA1-830-U-SLL-HSS-XXB
Description: ENTRI LED LUMINAIRE
(1) 80 CRI, 3000K LIGHTSQUARE IN BATTERY OPERATION 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: 461 lumens
Efficiency: N/A
Efficacy: 35.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B0 - U0 - G0

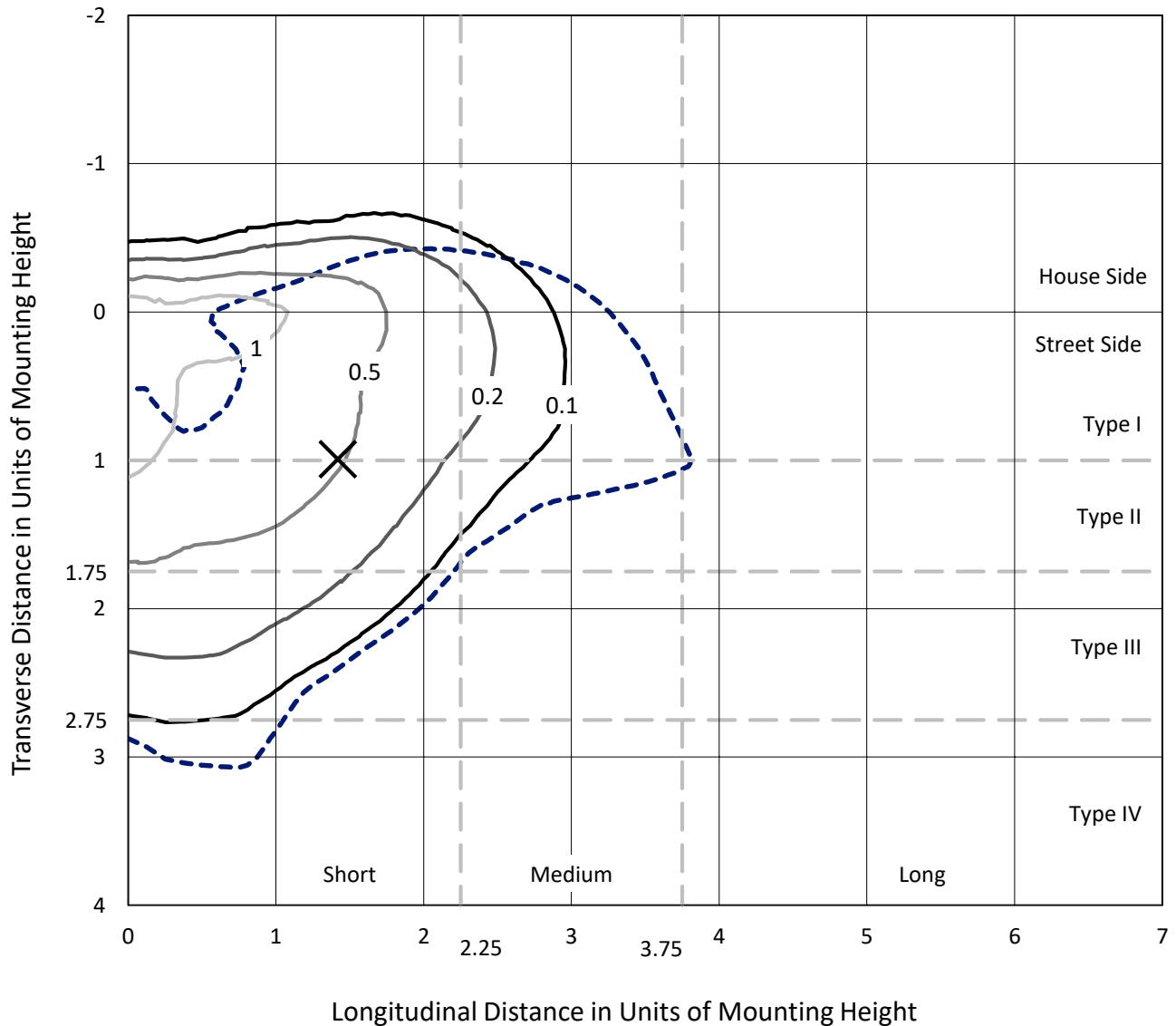
Input Watts (W): 13
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

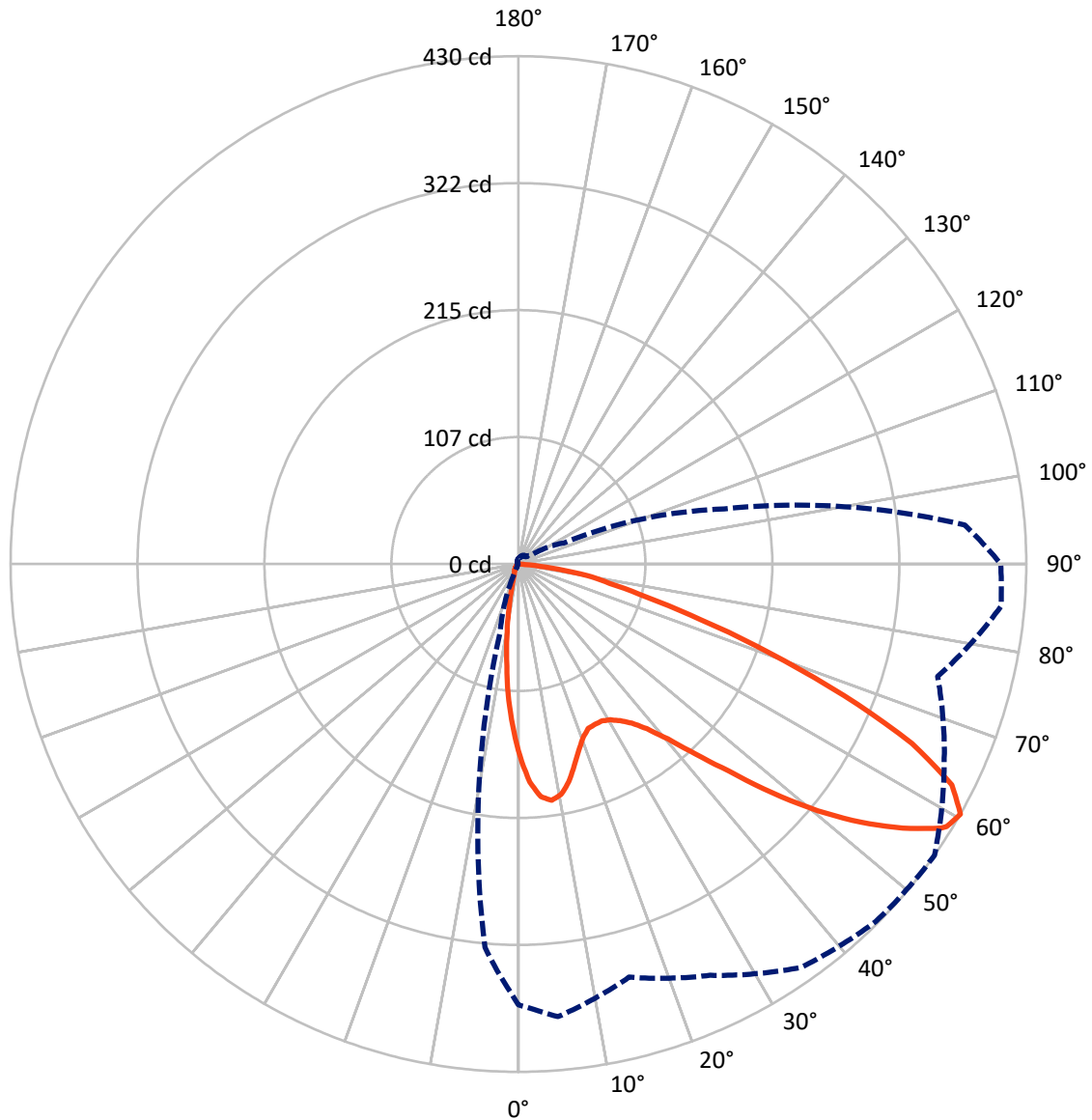
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 1.9 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



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

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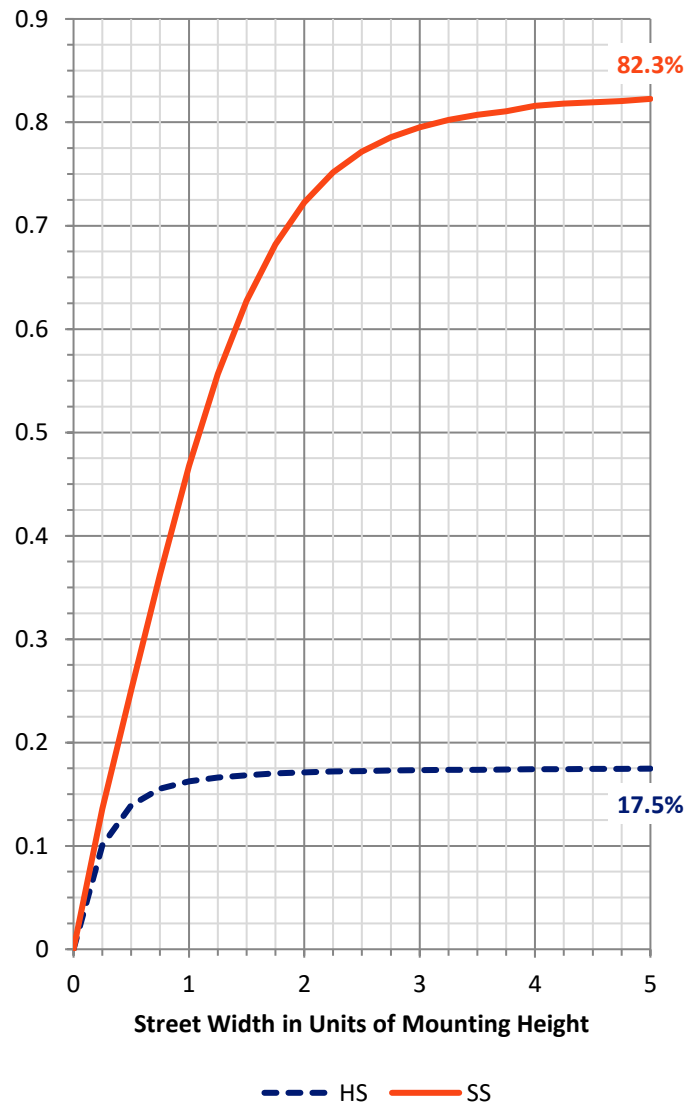
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	81.6	0.0	81.6
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	379.4	0.0	379.4
	% Fixture	82.3	0.0	82.3
Total	Lumens	461.0	0.0	461.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.2	2.7
10°-20°	23.3	5.1
20°-30°	33.2	7.2
30°-40°	48.8	10.6
40°-50°	71.9	15.6
50°-60°	106.5	23.1
60°-70°	113.5	24.6
70°-80°	47.1	10.2
80°-90°	4.5	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°	461.0	100.0
0°-180°	461.0	100.0



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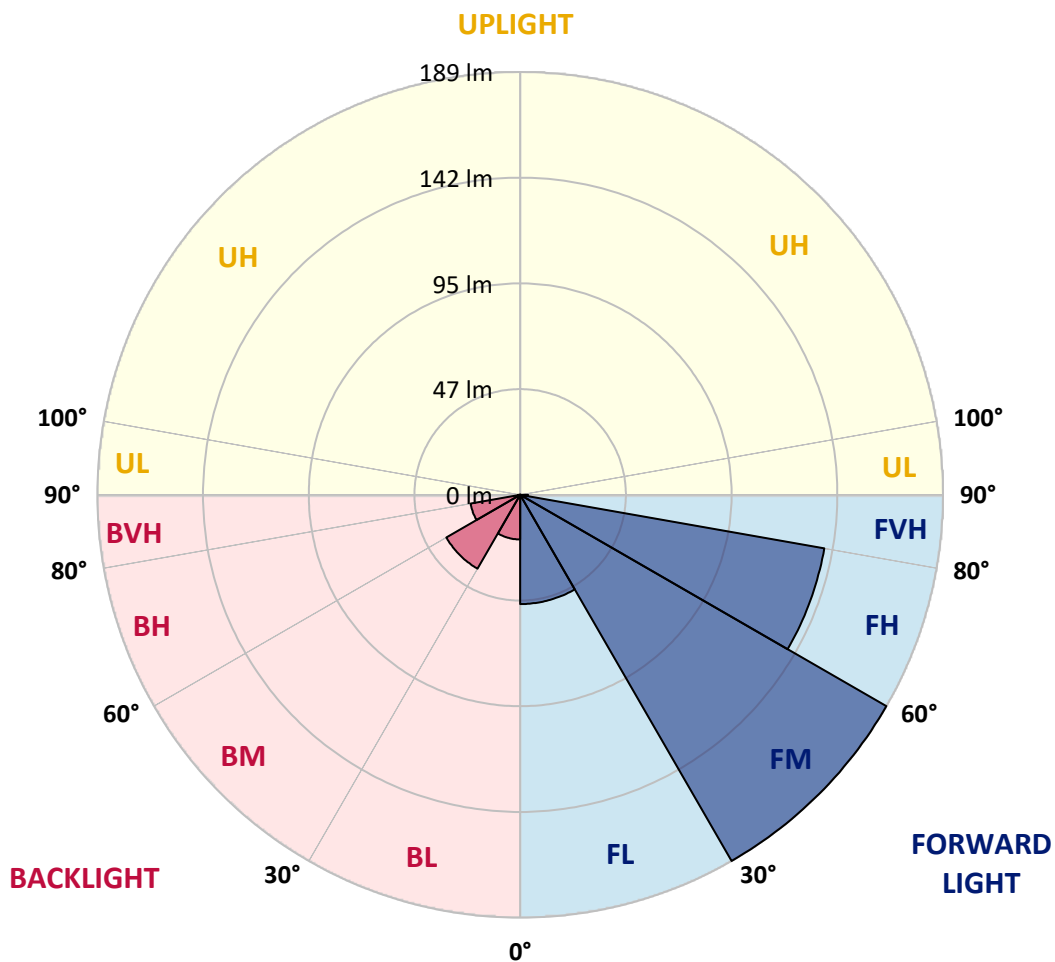
CATALOG NUMBER: ENT-SA1-830-U-SLL-HSS-XXB

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	48.8	10.6			
FM	(30°-60°)	189.0	41.0			
FH	(60°-80°)	138.1	29.9			G0/660
FVH	(80°-90°)	3.5	0.8			G0/10
BL	(0°-30°)	20.0	4.3	B0/110		
BM	(30°-60°)	38.1	8.3	B0/220		
BH	(60°-80°)	22.5	4.9	B0/110		G0/110
BVH	(80°-90°)	1.1	0.2			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G0

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	170.0	169.8	172.2	177.3	180.4	182.3	182.7	184.7	182.7	181.6	177.9
5°	165.1	165.0	169.7	180.8	189.8	196.6	199.9	197.7	194.2	187.3	178.9
7.5°	151.3	151.3	160.2	175.0	190.2	201.9	205.9	201.8	193.5	179.6	164.6
10°	140.1	141.1	149.6	167.3	184.2	197.1	201.5	198.3	187.5	169.5	151.9
12.5°	133.3	134.0	143.5	161.2	176.9	187.4	190.1	189.1	181.3	161.8	143.1
15°	134.0	134.8	145.7	160.3	170.5	174.7	175.6	176.8	173.6	158.6	140.2
17.5°	143.5	144.2	155.1	164.5	164.1	162.8	163.2	165.2	169.0	161.2	146.1
20°	158.9	160.5	171.5	171.7	160.8	154.7	153.1	156.4	166.8	168.1	158.5
22.5°	178.6	179.2	190.4	183.7	161.1	149.1	147.3	151.0	167.5	179.3	175.8
25°	201.4	203.6	209.7	199.3	166.2	148.3	147.1	150.3	170.0	191.1	193.6
27.5°	216.8	218.6	224.4	210.0	170.7	148.8	146.5	150.3	173.1	202.3	212.6
30°	230.6	231.8	234.0	215.5	175.9	151.0	147.3	152.8	174.7	204.6	224.9
32.5°	243.6	245.1	243.8	222.2	181.5	155.0	148.8	157.9	178.3	209.3	235.6
35°	260.3	260.4	256.0	229.0	188.0	159.9	153.1	165.2	185.3	216.7	247.1
37.5°	280.2	280.4	269.1	235.8	195.3	168.1	163.4	176.6	195.4	225.1	263.6
40°	297.5	298.2	283.3	243.8	204.3	184.1	183.6	194.5	208.4	236.4	281.2
42.5°	312.6	314.6	296.4	250.4	217.0	208.6	209.6	219.5	224.2	245.8	292.2
45°	327.9	327.8	307.1	257.0	238.3	240.1	250.0	249.6	242.0	250.8	300.9
47.5°	337.4	336.9	313.7	267.8	267.0	284.5	295.0	289.3	261.8	256.2	311.7
50°	341.0	340.9	318.8	281.6	296.2	324.6	339.7	328.2	286.0	265.3	324.6
52.5°	351.4	350.5	330.7	297.3	322.6	363.3	375.8	363.0	310.2	281.6	339.6
55°	367.6	367.9	351.1	315.7	343.7	390.6	405.9	394.5	334.8	304.0	360.1
57.5°	378.5	379.3	373.6	336.2	366.4	409.7	424.5	421.3	367.7	330.8	384.3
58°	379.6	380.2	377.2	340.1	369.8	411.9	427.1	424.8	374.9	339.3	390.0
60°	372.8	374.7	384.2	361.7	383.8	416.5	427.5	429.5	397.3	367.0	409.7
62.5°	354.6	355.2	372.5	385.9	393.4	405.1	406.1	411.4	406.6	399.5	427.3
65°	332.3	332.3	351.0	387.1	368.6	366.7	360.6	365.8	379.6	419.9	426.1
67.5°	293.5	293.8	317.6	344.8	305.6	298.9	295.0	296.9	326.5	402.9	402.4
70°	237.2	237.1	261.6	279.2	226.8	221.1	225.8	225.2	265.2	358.0	351.3
72.5°	167.8	169.3	194.4	215.6	154.0	132.7	153.5	161.5	199.5	301.8	271.8
75°	94.5	96.5	117.0	149.8	97.2	89.8	100.4	111.8	144.2	240.3	182.6
77.5°	47.4	48.2	60.0	72.1	58.9	68.4	67.8	78.7	98.9	162.1	104.4
80°	27.4	28.9	32.9	37.2	32.9	43.4	50.4	59.3	60.9	83.8	58.2
82.5°	11.0	12.3	15.4	17.5	13.7	12.9	8.8	27.7	36.7	40.5	22.3
85°	0.0	0.0	0.1	0.2	0.3	0.3	0.4	4.9	9.0	2.0	3.7
87.5°	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.6	0.8	1.0	3.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	176.5	175.5	172.3	167.4	164.4	159.7	157.7	153.3	151.0	147.3	147.3
5°	174.7	170.8	162.7	152.2	144.7	136.8	134.3	129.1	125.3	120.9	119.1
7.5°	158.9	153.4	140.8	128.5	116.5	108.6	100.8	95.4	90.4	86.7	87.2
10°	144.3	136.5	122.6	107.0	94.6	86.4	79.3	73.1	67.9	62.8	62.0
12.5°	134.8	125.9	109.3	92.6	83.3	77.2	70.7	63.9	57.4	51.8	49.5
15°	130.8	121.1	102.6	86.8	78.4	70.5	62.9	54.6	47.2	40.4	38.5
17.5°	135.2	123.5	102.0	83.0	71.2	61.4	50.8	41.7	32.9	28.1	26.6
20°	147.0	131.9	104.0	79.1	63.3	50.5	37.7	27.3	22.4	19.4	18.5
22.5°	164.2	145.7	107.4	75.4	55.3	37.7	26.0	19.7	16.8	15.3	14.8
25°	182.8	163.6	113.6	72.3	47.2	28.0	19.3	16.1	14.4	13.2	12.8
27.5°	203.9	181.3	121.3	69.9	39.8	22.4	16.6	14.2	12.8	12.0	11.7
30°	217.0	194.0	127.2	65.7	34.8	20.4	15.8	13.4	11.9	11.3	11.1
32.5°	229.1	204.0	132.7	60.9	30.9	18.0	15.3	14.1	12.4	11.2	10.6
35°	242.5	214.3	135.4	58.0	28.4	15.7	12.6	11.0	10.0	9.8	9.6
37.5°	262.3	226.5	137.2	56.5	26.8	14.3	11.8	9.9	8.8	7.8	7.3
40°	281.2	239.2	138.1	55.0	26.1	13.4	11.2	9.4	8.2	7.2	6.8
42.5°	295.9	250.7	138.6	53.9	24.7	12.9	10.8	9.1	7.8	6.8	6.4
45°	307.9	264.0	138.1	53.6	23.5	13.2	10.6	8.8	7.4	6.4	6.0
47.5°	319.7	278.5	139.8	53.2	22.4	12.7	10.7	8.7	7.1	6.2	5.8
50°	335.1	296.0	145.8	51.9	21.6	11.9	11.6	8.8	7.1	6.0	5.7
52.5°	355.1	320.2	156.7	50.6	20.7	11.2	12.1	8.8	6.9	5.8	5.4
55°	379.3	347.4	168.7	48.7	19.0	10.4	11.6	8.8	6.7	5.8	5.2
57.5°	399.1	371.6	178.2	46.5	15.9	9.3	10.6	8.5	6.3	5.4	5.0
58°	400.8	374.4	179.5	45.8	15.6	9.2	10.4	8.4	6.1	5.3	4.9
60°	407.9	378.9	180.1	42.5	13.0	8.7	9.0	8.1	5.8	5.0	4.6
62.5°	405.4	364.0	169.0	36.7	11.6	7.9	7.5	8.3	5.3	4.5	4.2
65°	393.3	334.5	148.1	32.9	11.7	7.1	6.4	7.2	4.9	4.1	3.7
67.5°	364.5	289.8	120.3	30.8	12.2	6.3	5.6	5.4	4.4	3.7	3.4
70°	310.9	237.5	91.2	28.9	12.9	5.6	5.1	4.8	4.0	3.4	3.1
72.5°	229.0	175.9	66.3	27.1	12.6	5.0	4.8	4.4	3.7	3.1	2.9
75°	142.8	102.1	45.4	22.1	11.2	4.4	4.4	4.1	3.3	2.9	2.6
77.5°	83.4	71.7	22.4	16.5	7.8	3.8	3.9	3.7	3.4	2.7	2.5
80°	49.9	44.6	9.6	7.1	4.3	3.4	3.3	3.5	3.2	2.5	2.4
82.5°	21.6	19.3	4.6	3.9	3.5	3.0	2.9	3.0	2.8	2.1	2.0
85°	1.2	3.2	2.2	2.9	2.6	2.2	2.2	2.3	2.0	1.7	1.7
87.5°	1.1	2.4	1.4	1.7	1.9	1.7	1.7	1.7	1.7	1.5	1.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	145.3	144.3	141.5	140.4	135.9	137.0	137.4	136.9	137.1	137.4	138.7
5°	120.4	118.8	115.0	112.6	111.3	110.4	106.3	106.4	107.0	104.7	107.7
7.5°	85.5	87.2	87.6	85.3	83.9	81.0	77.2	75.1	71.6	73.6	74.0
10°	61.2	60.3	62.0	61.2	59.0	57.9	53.9	53.5	53.2	52.9	55.4
12.5°	46.6	44.0	42.1	42.5	40.9	38.1	37.4	37.5	37.8	37.8	38.5
15°	37.0	32.9	29.9	28.1	28.3	25.5	24.8	22.1	21.8	21.0	21.2
17.5°	25.9	24.2	22.4	20.3	19.4	16.9	13.9	12.5	11.4	11.6	12.1
20°	17.9	17.2	16.6	15.6	14.7	11.8	9.8	9.2	9.2	9.3	9.5
22.5°	14.4	13.7	13.2	12.8	11.7	9.5	8.5	8.0	8.0	8.0	8.1
25°	12.4	11.7	11.0	11.0	9.9	8.3	7.5	7.1	7.1	7.0	7.1
27.5°	11.5	10.5	9.8	9.4	8.6	7.3	6.6	6.3	6.2	6.2	6.3
30°	10.6	9.7	9.0	8.4	7.5	6.5	5.8	5.6	5.4	5.4	5.5
32.5°	10.1	9.2	8.3	7.5	6.5	5.8	5.1	4.8	4.6	4.7	4.8
35°	9.0	8.2	7.4	6.6	5.8	5.1	4.4	4.1	4.0	4.0	4.1
37.5°	7.1	6.4	6.3	5.8	5.1	4.4	3.7	3.4	3.3	3.3	3.4
40°	6.4	5.6	5.2	5.1	4.6	3.7	3.1	2.7	2.7	2.6	2.8
42.5°	5.8	5.1	4.4	4.3	4.0	3.2	2.4	2.2	2.1	2.1	2.2
45°	5.5	4.6	3.8	3.4	3.4	2.6	2.0	1.7	1.6	1.6	1.7
47.5°	5.3	4.4	3.4	2.8	2.7	2.2	1.6	1.2	1.1	1.1	1.1
50°	5.1	4.0	3.1	2.4	2.1	1.8	1.2	1.0	0.9	0.9	0.9
52.5°	4.9	3.8	2.8	2.1	1.7	1.4	1.0	0.7	0.6	0.5	0.6
55°	4.7	3.6	2.7	1.9	1.4	1.0	0.7	0.5	0.4	0.4	0.4
57.5°	4.4	3.3	2.4	1.8	1.3	0.8	0.5	0.3	0.3	0.3	0.3
58°	4.4	3.3	2.4	1.7	1.2	0.8	0.5	0.3	0.3	0.3	0.3
60°	4.1	3.1	2.3	1.6	1.1	0.7	0.4	0.3	0.2	0.2	0.3
62.5°	3.8	2.8	2.0	1.4	1.0	0.6	0.3	0.2	0.1	0.1	0.1
65°	3.4	2.5	1.7	1.3	0.8	0.4	0.3	0.1	0.0	0.0	0.0
67.5°	3.1	2.4	1.6	1.1	0.7	0.3	0.2	0.0	0.0	0.0	0.0
70°	2.8	2.2	1.4	1.0	0.6	0.3	0.1	0.0	0.0	0.0	0.0
72.5°	2.6	2.0	1.3	0.9	0.4	0.3	0.1	0.0	0.0	0.0	0.0
75°	2.5	1.9	1.3	0.8	0.4	0.3	0.2	0.1	0.0	0.0	0.1
77.5°	2.4	1.9	1.3	0.8	0.5	0.3	0.3	0.2	0.2	0.1	0.3
80°	2.3	1.7	1.1	0.7	0.4	0.3	0.3	0.2	0.0	0.0	0.0
82.5°	1.9	1.4	1.0	0.7	0.4	0.3	0.1	0.0	0.0	0.0	0.0
85°	1.6	1.1	0.8	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0
87.5°	1.4	0.9	0.6	0.3	0.2	0.1	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



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CATALOG NUMBER: ENT-SA1-830-U-SLL-HSS-XXB

CANDELA DISTRIBUTION (continued):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	139.9	143.9	145.5	151.1	153.6	158.6	163.0	166.7	168.6	170.0
5°	108.5	112.3	116.4	124.7	131.9	139.5	149.1	159.1	161.9	165.1
7.5°	75.7	81.4	88.3	95.7	105.9	117.5	131.3	143.5	149.7	151.3
10°	58.8	65.5	72.9	80.2	88.6	101.0	114.9	130.7	137.4	140.1
12.5°	44.2	53.2	61.9	70.5	77.8	88.5	103.6	122.5	129.9	133.3
15°	26.6	36.7	47.4	59.0	69.2	81.8	98.7	120.8	130.0	134.0
17.5°	13.2	18.1	28.0	45.4	60.5	76.1	98.7	127.1	138.5	143.5
20°	9.8	11.2	14.9	28.3	50.3	71.4	99.7	137.8	154.6	158.9
22.5°	8.5	9.4	10.7	16.6	37.7	67.0	103.4	152.0	172.9	178.6
25°	7.4	8.2	9.2	11.4	25.8	61.9	110.3	172.0	193.7	201.4
27.5°	6.5	7.2	8.1	9.6	17.3	52.2	114.2	188.9	210.4	216.8
30°	5.8	6.3	7.1	8.2	12.7	40.4	117.8	203.7	225.6	230.6
32.5°	5.1	5.5	6.2	7.0	9.7	30.6	118.0	216.4	238.8	243.6
35°	4.3	4.8	5.3	6.0	7.7	23.9	114.4	229.0	254.5	260.3
37.5°	3.6	4.0	4.6	5.2	7.0	18.5	107.0	243.9	273.6	280.2
40°	3.1	3.5	4.0	4.7	6.2	13.4	95.2	257.3	291.4	297.5
42.5°	2.4	2.9	3.5	4.6	5.1	9.7	83.2	270.2	307.0	312.6
45°	1.9	2.4	3.2	4.4	4.3	6.8	72.9	281.6	320.3	327.9
47.5°	1.4	2.0	3.2	4.0	3.5	4.9	67.7	292.6	332.2	337.4
50°	1.0	1.7	3.5	3.4	3.0	4.2	68.5	304.8	337.7	341.0
52.5°	0.8	1.4	2.7	2.4	2.5	3.7	71.6	320.9	349.1	351.4
55°	0.7	1.0	1.7	1.8	2.3	3.5	70.8	336.2	363.5	367.6
57.5°	0.6	0.9	1.3	1.5	2.0	3.3	66.3	342.9	372.8	378.5
58°	0.5	0.9	1.2	1.5	2.0	3.2	65.2	341.0	372.4	379.6
60°	0.4	0.8	1.1	1.3	1.7	2.9	59.7	325.5	362.8	372.8
62.5°	0.3	0.5	0.9	1.0	1.4	2.4	49.2	300.4	342.3	354.6
65°	0.2	0.3	0.5	0.7	1.0	1.7	34.9	270.7	320.2	332.3
67.5°	0.0	0.2	0.3	0.4	0.6	1.3	20.1	229.7	283.9	293.5
70°	0.0	0.1	0.2	0.3	0.3	0.9	10.6	168.6	220.0	237.2
72.5°	0.1	0.1	0.1	0.0	0.2	0.7	4.7	100.1	150.0	167.8
75°	0.1	0.1	0.0	0.0	0.0	0.3	2.0	52.7	86.0	94.5
77.5°	0.3	0.2	0.0	0.0	0.0	0.1	1.0	28.4	44.6	47.4
80°	0.1	0.0	0.0	0.0	0.0	0.0	0.3	9.5	26.8	27.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	11.5	11.0
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)