

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: P188979

Luminaire Tested: **ABB-B2-LED-D1-A**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P188979  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P34805)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: ABB-B2-LED-D1-A  
Description: ARBOR OUTDOOR ARCHITECTURAL BOLLARD  
70 CRI, 4000K LEDS AND ASYMMETRIC OPTIC, GRAPHITE METALLIC PAINTED FINISH  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 834.4 lumens  
Efficiency: N/A  
Efficacy: 36.3 lumens/watt  
Luminous Opening: Circular (Dia: 4.75' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G1

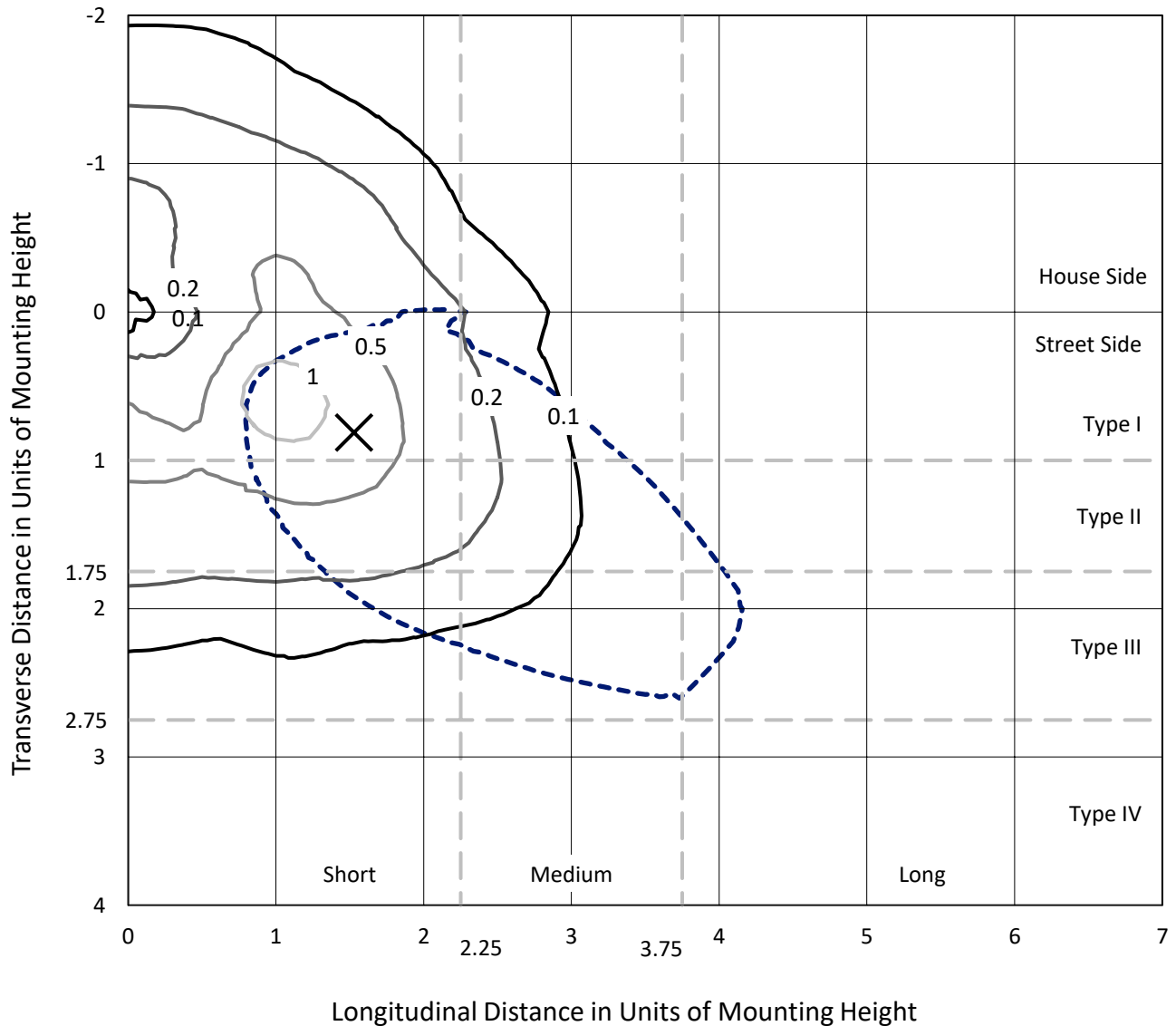
Input Watts (W): 23  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Iso-Footcandle Lines of Horizontal Illumination

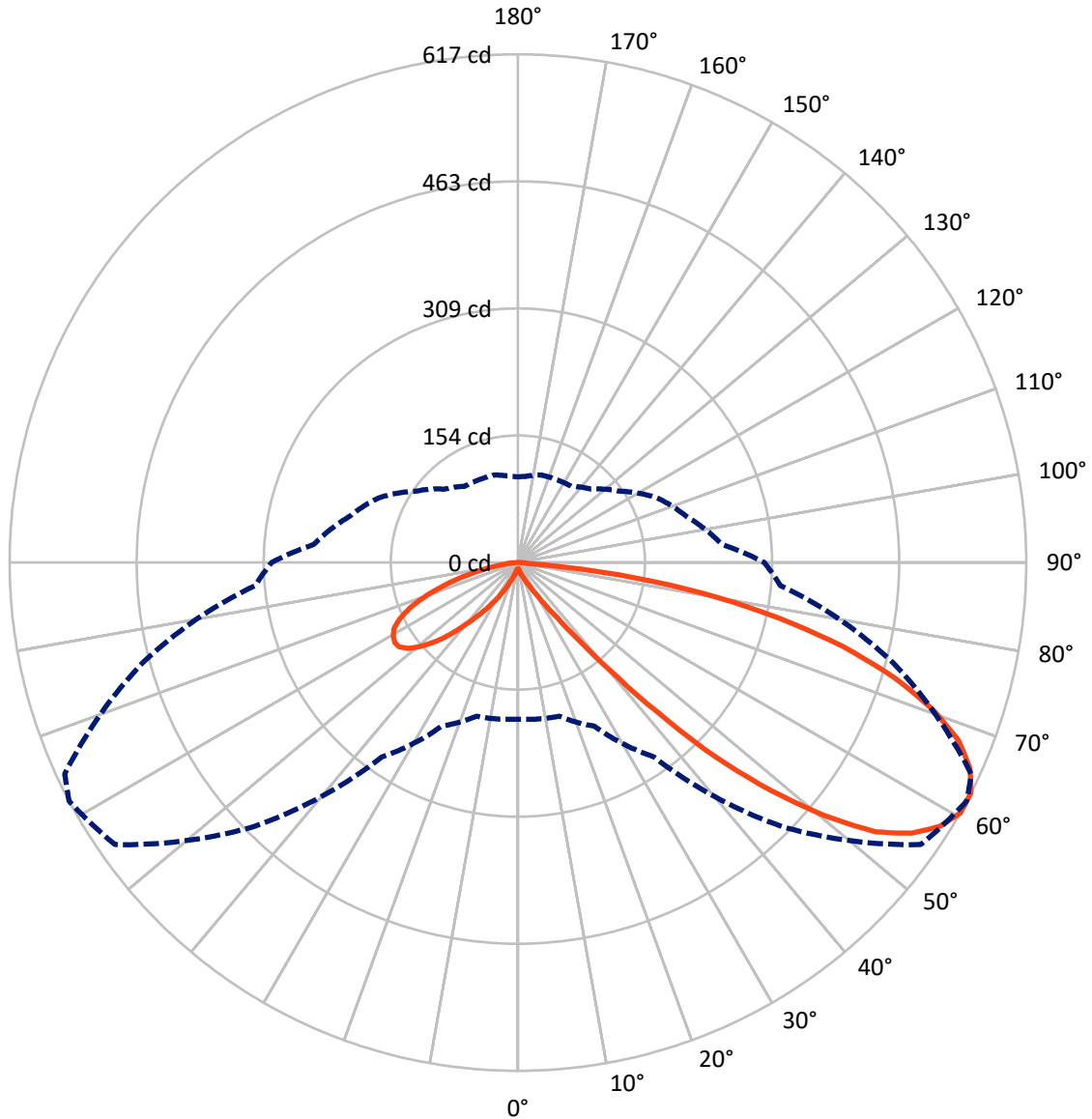
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 1.3 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 62-Deg Lateral      - - - Horizontal Cone Through 60-Deg Vertical

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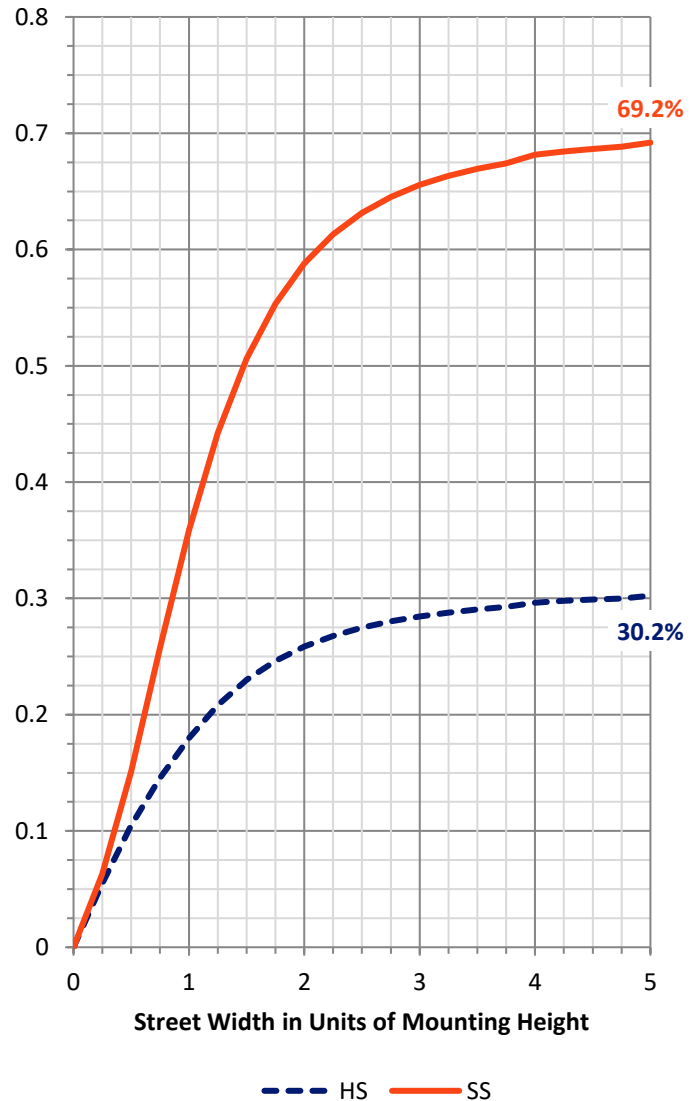
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	254.9	0.0	254.9
	% Fixture	30.6	0.0	30.6
<b>Street Side</b>	Lumens	579.4	0.0	579.4
	% Fixture	69.4	0.0	69.4
<b>Total</b>	Lumens	834.4	0.0	834.4
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	0.9	0.1
10°-20°	4.6	0.5
20°-30°	14.6	1.7
30°-40°	43.1	5.2
40°-50°	123.5	14.8
50°-60°	220.9	26.5
60°-70°	243.2	29.2
70°-80°	158.0	18.9
80°-90°	25.6	3.1
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°	834.4	100.0
0°-180°	834.4	100.0



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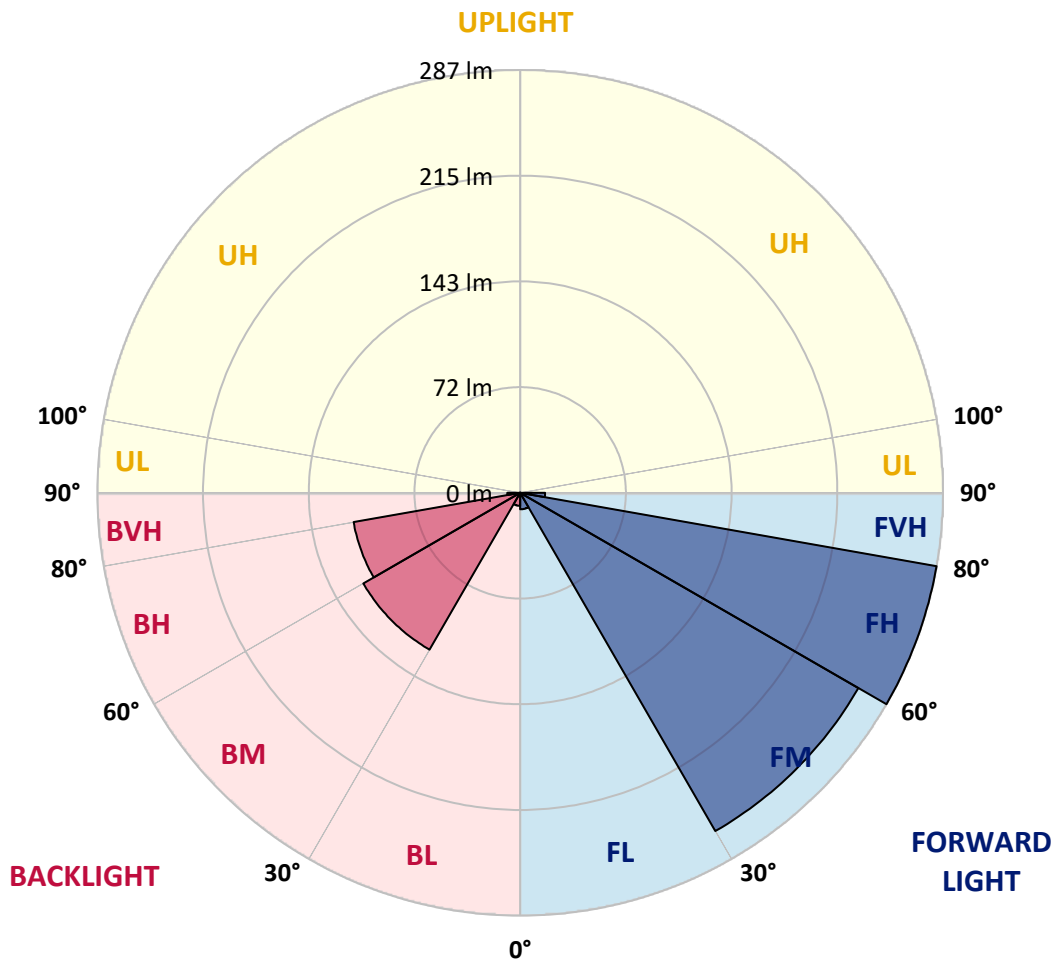
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	11.2	1.3			
FM	(30°-60°)	264.7	31.7			
FH	(60°-80°)	286.6	34.4			G0/660
FVH	(80°-90°)	16.9	2.0			G1/100
BL	(0°-30°)	8.8	1.1	B0/110		
BM	(30°-60°)	122.8	14.7	B0/220		
BH	(60°-80°)	114.6	13.7	B1/500		G1/500
BVH	(80°-90°)	8.7	1.0			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





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	62°	65°	75°	85°
0°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
2.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
5°	8.0	8.0	8.0	8.0	9.0	9.0	9.0	8.0	8.0	8.0	8.0
7.5°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	9.0	9.0
10°	11.0	11.0	12.0	12.0	12.0	12.0	11.0	11.0	11.0	10.0	10.0
12.5°	15.0	15.0	15.0	15.0	14.0	14.0	13.0	13.0	12.0	12.0	12.0
15°	18.0	19.0	19.0	18.0	17.0	16.0	15.0	15.0	14.0	14.0	14.0
17.5°	24.0	24.0	23.0	22.0	20.0	19.0	18.0	17.0	17.0	16.0	16.0
20°	31.0	31.0	28.0	25.0	24.0	22.0	21.0	20.0	20.0	19.0	19.0
22.5°	40.0	39.0	34.0	30.0	28.0	26.0	25.0	25.0	24.0	23.0	22.0
25°	50.0	49.0	42.0	36.0	33.0	31.0	31.0	30.0	29.0	28.0	27.0
27.5°	62.0	60.0	51.0	43.0	38.0	38.0	38.0	37.0	37.0	35.0	33.0
30°	74.0	72.0	62.0	51.0	46.0	47.0	48.0	47.0	47.0	44.0	40.0
32.5°	86.0	85.0	74.0	62.0	56.0	59.0	62.0	62.0	62.0	56.0	50.0
35°	98.0	97.0	88.0	75.0	68.0	77.0	85.0	83.0	82.0	74.0	64.0
37.5°	111.0	111.0	104.0	89.0	84.0	103.0	116.0	117.0	116.0	99.0	82.0
40°	125.0	125.0	120.0	108.0	105.0	139.0	166.1	170.1	167.1	139.0	106.0
42.5°	140.0	140.0	137.0	128.0	130.0	188.1	239.1	248.1	239.1	190.1	134.0
45°	156.1	156.1	156.1	149.1	159.1	236.1	324.1	337.1	329.1	244.1	171.1
47.5°	168.1	169.1	174.1	167.1	190.1	286.1	396.1	414.1	403.1	296.1	205.1
50°	182.1	183.1	186.1	185.1	220.1	339.1	466.2	483.2	473.2	346.1	238.1
52.5°	192.1	192.1	198.1	199.1	245.1	388.1	527.2	543.2	532.2	398.1	270.1
55°	196.1	198.1	202.1	210.1	268.1	423.1	568.2	580.2	574.2	438.2	294.1
57.5°	195.1	196.1	200.1	214.1	280.1	446.2	592.2	604.2	598.2	464.2	311.1
60°	190.1	191.1	193.1	219.1	288.1	453.2	597.2	617.2	607.2	472.2	320.1
62.5°	181.1	180.1	180.1	221.1	287.1	448.2	601.2	617.2	607.2	469.2	319.1
65°	165.1	165.1	162.1	222.1	276.1	434.2	588.2	603.2	595.2	452.2	307.1
67.5°	147.1	145.1	140.0	217.1	262.1	403.1	560.2	577.2	567.2	421.1	289.1
70°	120.0	122.0	117.0	205.1	236.1	358.1	516.2	534.2	525.2	379.1	261.1
72.5°	94.0	93.0	95.0	182.1	207.1	308.1	463.2	478.2	469.2	325.1	230.1
75°	68.0	67.0	75.0	154.1	174.1	249.1	390.1	408.1	397.1	269.1	190.1
77.5°	44.0	42.0	55.0	116.0	133.0	184.1	312.1	323.1	317.1	200.1	147.1
80°	24.0	25.0	34.0	74.0	86.0	118.0	220.1	231.1	219.1	130.0	99.0
82.5°	15.0	14.0	16.0	27.0	36.0	57.0	115.0	124.0	115.0	58.0	46.0
85°	8.0	7.0	7.0	7.0	7.0	8.0	10.0	11.0	10.0	8.0	8.0
87.5°	6.0	6.0	6.0	5.0	6.0	6.0	7.0	7.0	7.0	6.0	6.0
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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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
2.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	10.0	10.0	10.0
5°	8.0	7.0	7.0	8.0	8.0	8.0	8.0	9.0	9.0	9.0	9.0
7.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	10.0	10.0	10.0	10.0
10°	10.0	10.0	10.0	10.0	10.0	11.0	11.0	11.0	11.0	11.0	11.0
12.5°	12.0	12.0	12.0	12.0	13.0	13.0	13.0	13.0	13.0	12.0	12.0
15°	14.0	14.0	14.0	14.0	15.0	16.0	15.0	15.0	14.0	13.0	13.0
17.5°	16.0	16.0	17.0	17.0	18.0	18.0	17.0	17.0	15.0	15.0	14.0
20°	19.0	19.0	20.0	21.0	22.0	22.0	20.0	18.0	17.0	16.0	16.0
22.5°	22.0	22.0	24.0	26.0	26.0	25.0	22.0	20.0	18.0	17.0	17.0
25°	26.0	27.0	30.0	33.0	32.0	28.0	25.0	22.0	19.0	18.0	18.0
27.5°	32.0	33.0	37.0	40.0	38.0	33.0	28.0	24.0	21.0	20.0	20.0
30°	40.0	41.0	47.0	50.0	45.0	37.0	31.0	26.0	23.0	21.0	21.0
32.5°	50.0	52.0	59.0	60.0	53.0	42.0	36.0	30.0	26.0	24.0	23.0
35°	63.0	66.0	74.0	72.0	62.0	50.0	41.0	35.0	30.0	27.0	26.0
37.5°	80.0	83.0	89.0	85.0	72.0	58.0	48.0	41.0	35.0	31.0	31.0
40°	102.0	104.0	109.0	99.0	83.0	69.0	58.0	49.0	43.0	40.0	40.0
42.5°	129.0	130.0	131.0	116.0	97.0	81.0	70.0	63.0	54.0	52.0	51.0
45°	157.1	155.1	154.1	135.0	111.0	92.0	83.0	75.0	68.0	65.0	65.0
47.5°	183.1	179.1	176.1	151.1	125.0	105.0	92.0	84.0	79.0	78.0	78.0
50°	212.1	201.1	193.1	166.1	136.0	114.0	101.0	94.0	89.0	88.0	89.0
52.5°	237.1	220.1	207.1	179.1	146.1	122.0	107.0	101.0	98.0	97.0	97.0
55°	260.1	233.1	215.1	187.1	152.1	126.0	112.0	106.0	105.0	102.0	102.0
57.5°	282.1	242.1	217.1	189.1	153.1	128.0	114.0	109.0	108.0	105.0	104.0
60°	299.1	249.1	213.1	186.1	151.1	126.0	113.0	111.0	110.0	105.0	104.0
62.5°	313.1	253.1	202.1	180.1	147.1	123.0	110.0	110.0	109.0	104.0	103.0
65°	313.1	255.1	186.1	168.1	138.0	117.0	104.0	108.0	106.0	100.0	99.0
67.5°	304.1	251.1	165.1	151.1	125.0	107.0	98.0	102.0	100.0	95.0	94.0
70°	282.1	235.1	141.0	130.0	109.0	95.0	90.0	93.0	92.0	86.0	86.0
72.5°	248.1	211.1	120.0	106.0	90.0	83.0	79.0	83.0	82.0	76.0	77.0
75°	206.1	176.1	97.0	81.0	71.0	68.0	67.0	70.0	68.0	66.0	66.0
77.5°	158.1	133.0	72.0	57.0	52.0	53.0	53.0	56.0	54.0	53.0	54.0
80°	99.0	85.0	46.0	37.0	36.0	38.0	38.0	41.0	41.0	40.0	39.0
82.5°	42.0	33.0	23.0	21.0	21.0	23.0	23.0	25.0	26.0	26.0	26.0
85°	7.0	7.0	9.0	9.0	10.0	9.0	9.0	10.0	11.0	13.0	13.0
87.5°	5.0	5.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	10.0	10.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)