

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: LUMARK

Report Number: P196153

Luminaire Tested: **NAV-AF-01-D-UNV-SL4-600-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196153  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-01-D-UNV-SL4-600-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(1) 70 CRI, 4000K, 615mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE IV SPILL  
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3355.3 lumens  
Efficiency: N/A  
Efficacy: 98.7 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B0 - U0 - G1

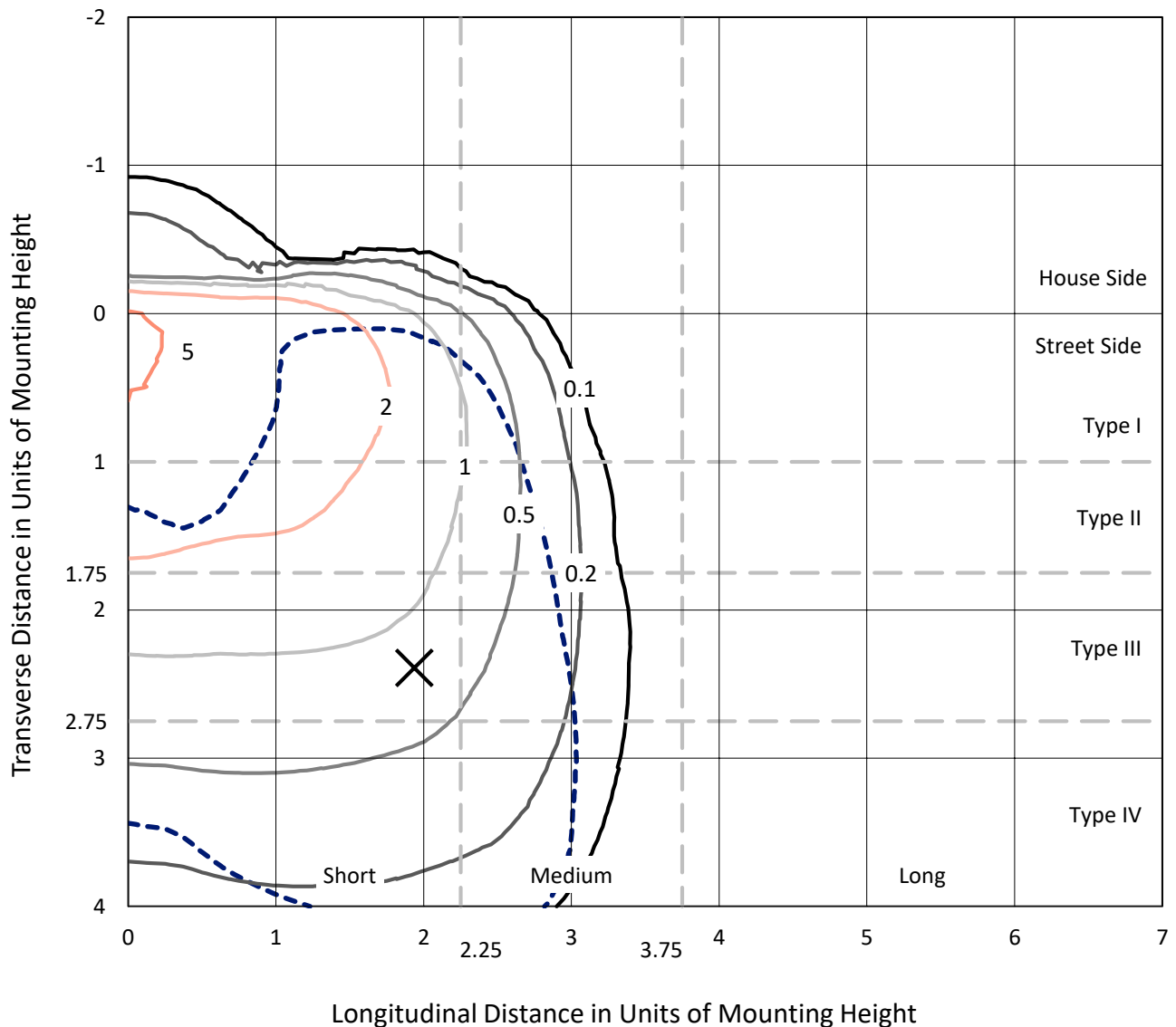
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

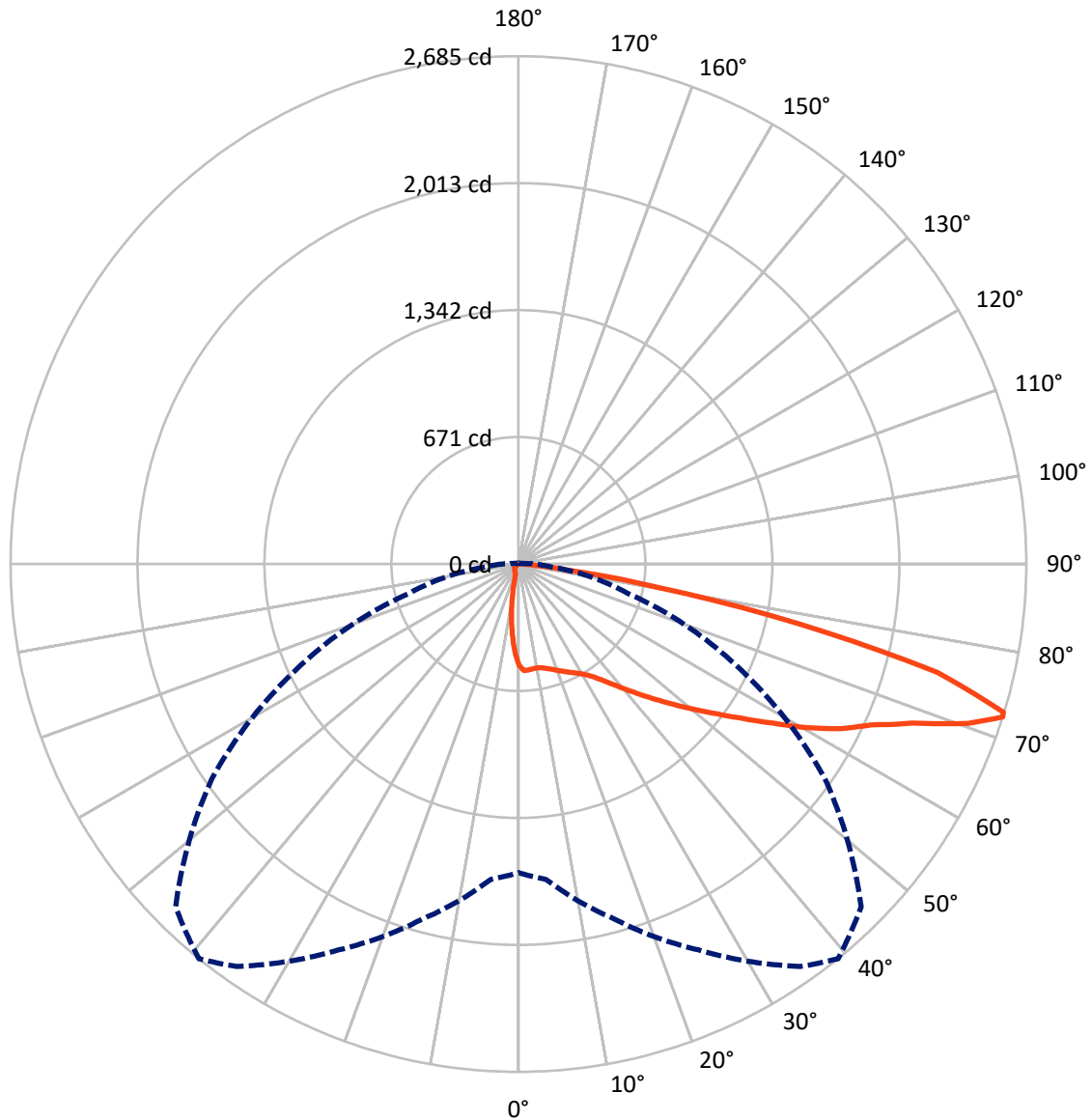
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5.6 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral      - - - Horizontal Cone Through 72-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	219.9	0.0	219.9
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	3135.4	0.0	3135.4
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	3355.3	0.0	3355.3
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.7	1.3
10°-20°	105.8	3.2
20°-30°	175.6	5.2
30°-40°	279.9	8.3
40°-50°	462.0	13.8
50°-60°	697.8	20.8
60°-70°	909.0	27.1
70°-80°	614.2	18.3
80°-90°	67.3	2.0
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°	3355.3	100.0
0°-180°	3355.3	100.0



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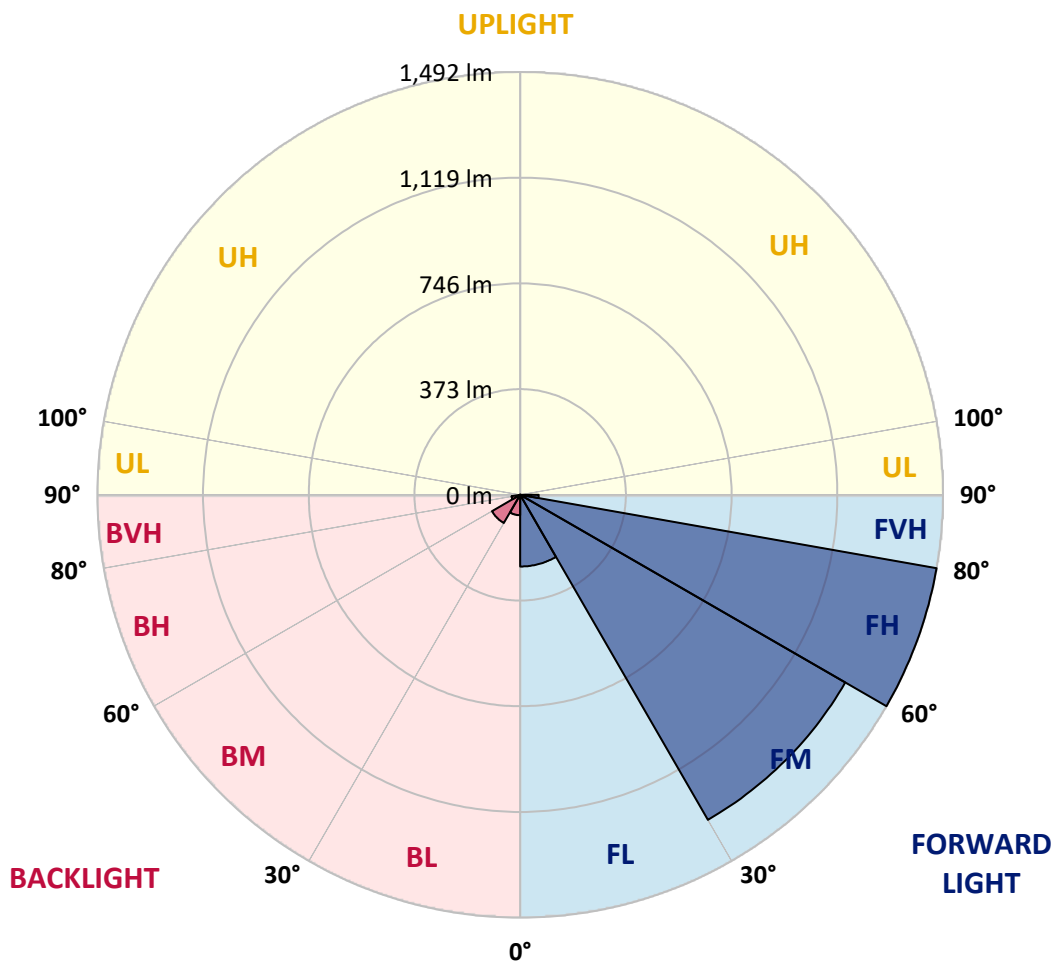
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	253.1	7.5			
FM	(30°-60°)	1324.7	39.5			
FH	(60°-80°)	1492.3	44.5			G1/1800
FVH	(80°-90°)	65.3	1.9			G1/100
BL	(0°-30°)	72.0	2.1	B0/110		
BM	(30°-60°)	115.0	3.4	B0/220		
BH	(60°-80°)	30.9	0.9	B0/110		G0/110
BVH	(80°-90°)	1.9	0.1			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B0-U0-G1**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0
2.5°	571.8	573.0	571.6	569.2	565.8	563.6	560.8	554.4	546.6	539.7	531.7
5°	576.3	576.8	575.3	570.8	565.5	562.6	558.9	552.1	543.9	534.4	520.2
7.5°	577.7	577.4	575.5	570.0	561.8	558.1	551.8	543.4	534.9	526.2	510.1
10°	577.1	577.1	575.8	570.5	561.3	557.9	550.8	541.8	531.2	522.5	505.3
12.5°	575.3	576.3	575.5	572.6	565.8	563.1	556.8	547.9	537.9	528.9	510.7
15°	577.7	579.2	580.8	579.8	575.8	573.5	567.6	558.4	550.2	540.7	521.2
17.5°	587.2	590.5	594.2	594.5	590.3	586.0	579.5	570.0	562.1	553.4	532.2
20°	605.1	607.7	614.6	615.9	607.4	601.4	592.2	581.0	573.2	565.8	542.6
22.5°	631.8	634.6	640.2	638.3	624.1	616.9	605.4	592.7	584.5	580.3	554.4
25°	672.1	672.9	674.2	666.0	642.5	634.6	620.4	606.1	599.6	599.0	571.3
27.5°	719.5	720.6	714.8	696.6	663.1	652.8	636.8	623.8	620.6	624.6	592.7
30°	773.9	774.2	758.1	728.5	686.8	675.6	658.9	644.7	647.5	657.3	620.1
32.5°	829.5	827.0	804.8	766.3	719.3	705.6	691.3	677.1	685.6	705.3	660.2
35°	880.5	879.4	853.2	808.4	761.5	749.4	739.1	724.0	737.8	770.0	714.8
37.5°	931.4	930.6	900.8	854.1	813.5	804.8	797.1	785.5	807.9	855.2	787.9
40°	987.6	986.2	949.6	904.7	873.9	869.1	864.6	859.6	897.8	963.5	878.9
42.5°	1056.9	1051.1	1001.3	959.8	940.3	941.6	941.9	946.9	1006.8	1092.5	986.2
45°	1136.6	1123.6	1053.2	1019.0	1013.4	1021.3	1029.2	1050.1	1133.6	1241.0	1104.9
47.5°	1213.8	1193.1	1113.1	1082.5	1093.8	1110.2	1129.2	1169.8	1276.1	1396.4	1212.5
50°	1280.3	1258.9	1172.4	1147.1	1183.2	1207.5	1241.2	1302.7	1426.5	1527.8	1280.3
52.5°	1332.6	1315.7	1235.2	1218.3	1282.5	1315.7	1368.7	1449.4	1568.4	1614.2	1327.8
55°	1371.1	1362.7	1295.4	1297.7	1392.7	1440.7	1506.6	1598.0	1688.1	1681.5	1363.4
57.5°	1414.6	1408.0	1358.4	1391.4	1525.4	1587.3	1663.6	1737.0	1775.1	1735.6	1398.3
60°	1459.1	1461.3	1434.9	1504.8	1689.4	1758.0	1824.5	1842.6	1849.8	1790.5	1434.9
62.5°	1492.9	1501.9	1504.2	1627.2	1857.7	1916.3	1945.0	1932.1	1930.5	1864.0	1432.0
65°	1531.7	1555.2	1594.3	1761.4	2010.7	2049.2	2069.8	2088.6	2049.0	1885.9	1291.2
67.5°	1598.7	1635.6	1723.5	1926.0	2187.5	2244.5	2302.7	2282.9	2066.7	1663.6	983.6
70°	1688.9	1734.0	1889.1	2141.0	2427.2	2522.7	2571.5	2267.4	1754.6	1149.5	518.8
72°	1631.9	1672.8	1940.3	2250.7	2597.1	2684.6	2562.5	1977.8	1271.9	595.9	173.8
72.5°	1576.6	1618.7	1924.0	2249.5	2613.9	2680.9	2504.2	1863.5	1125.6	463.7	119.8
75°	1093.8	1147.1	1649.3	2022.1	2360.5	2286.9	1916.0	1128.4	407.7	79.7	39.6
77.5°	565.5	606.7	1000.4	1428.9	1645.1	1506.6	1132.4	489.6	112.9	42.2	26.1
80°	350.6	370.8	467.9	704.0	854.6	747.6	499.6	197.8	72.3	25.1	20.9
82.5°	181.5	197.0	294.6	284.1	315.7	262.5	184.3	165.6	44.6	15.5	21.4
85°	59.6	63.3	181.0	188.8	135.0	90.7	81.7	158.0	12.9	10.0	18.2
87.5°	7.9	9.2	63.5	108.1	66.5	41.1	49.1	55.6	4.5	5.5	5.0
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°	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0	537.0
2.5°	526.5	523.0	512.2	501.5	489.1	477.7	468.7	462.9	465.5	456.8	458.2
5°	511.5	502.8	479.0	453.4	425.8	399.9	379.3	364.0	361.1	347.9	348.4
7.5°	496.9	482.7	444.2	402.0	356.1	318.9	285.1	255.6	245.0	234.3	227.9
10°	489.1	469.5	414.9	353.4	288.8	234.3	186.8	149.6	134.0	122.7	117.1
12.5°	491.4	465.5	393.0	309.4	224.4	155.1	105.5	78.4	68.8	63.5	61.7
15°	499.3	466.4	373.3	266.4	163.3	93.9	62.0	53.0	52.3	52.0	51.7
17.5°	506.7	467.2	352.4	221.6	109.3	59.8	49.8	49.1	49.1	49.1	49.1
20°	514.3	467.4	329.5	174.6	71.7	49.1	47.0	46.4	47.0	47.0	47.0
22.5°	523.3	469.2	307.3	129.0	53.0	46.1	44.8	44.6	44.8	44.8	44.6
25°	534.4	473.2	283.3	92.3	48.0	44.3	43.0	42.8	43.0	42.8	42.8
27.5°	549.1	478.4	255.3	66.2	45.9	42.5	41.1	41.1	41.1	40.9	40.9
30°	568.1	484.8	217.9	52.3	43.8	40.6	39.6	39.6	39.3	39.1	39.1
32.5°	595.4	495.1	177.0	47.3	41.4	38.3	37.2	37.4	37.2	36.9	36.6
35°	633.8	511.2	136.7	44.6	39.1	35.9	34.8	34.8	34.8	34.3	34.3
37.5°	688.4	535.7	102.3	41.9	36.6	33.5	32.2	32.2	31.9	31.4	31.6
40°	756.0	566.6	74.2	39.6	34.3	30.9	29.8	29.3	28.7	28.2	28.2
42.5°	837.2	596.7	55.6	37.2	31.9	28.7	27.4	26.9	25.9	25.4	25.1
45°	928.2	628.6	46.1	34.3	29.3	26.4	25.4	24.2	22.9	22.2	21.9
47.5°	1004.9	648.0	41.1	31.4	26.6	24.0	22.9	21.4	19.7	19.2	19.2
50°	1051.1	639.9	36.9	28.4	24.0	21.6	20.4	18.2	17.2	16.6	16.4
52.5°	1077.0	615.6	33.5	26.1	21.6	19.0	17.2	15.3	14.7	14.2	14.2
55°	1094.7	580.5	29.8	23.7	19.5	16.6	14.5	13.2	12.7	12.4	12.2
57.5°	1111.5	537.9	26.4	21.6	17.4	14.7	12.4	11.9	10.8	10.5	10.5
60°	1116.6	479.0	23.2	19.2	15.5	12.9	10.8	10.0	9.0	8.7	8.7
62.5°	1052.7	381.2	20.6	16.4	13.7	11.0	9.5	8.5	7.4	7.4	7.4
65°	879.6	258.8	17.7	14.2	12.2	9.5	8.2	6.9	6.3	6.3	6.3
67.5°	612.7	144.2	15.0	12.2	10.3	7.9	6.9	5.8	5.5	5.8	5.8
70°	276.2	57.3	12.7	10.0	8.5	6.5	5.8	5.0	5.5	5.5	5.5
72°	82.9	30.6	10.5	8.2	6.9	5.8	5.0	4.7	5.3	5.5	5.5
72.5°	61.5	27.4	10.0	7.9	6.9	5.5	4.7	4.7	5.3	5.5	5.5
75°	31.6	18.7	7.7	5.8	5.0	4.5	4.0	4.5	5.3	5.3	5.3
77.5°	24.8	15.3	6.3	4.5	4.2	4.0	3.7	4.2	4.7	4.7	4.7
80°	23.2	10.0	5.0	4.2	3.7	3.5	3.5	3.7	4.2	4.5	4.5
82.5°	23.4	8.2	4.5	4.0	3.5	3.2	3.2	3.5	4.0	4.2	4.2
85°	15.0	5.5	4.0	3.5	3.2	2.9	2.9	3.2	3.7	4.0	4.0
87.5°	5.0	4.2	3.5	3.2	2.7	2.7	2.7	2.7	3.2	3.5	3.7
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)