

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: P196178

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196178  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-02-D-UNV-SL4-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL  
LIGHT ELIMINATOR OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7831.7 lumens  
Efficiency: N/A  
Efficacy: 118.7 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U0 - G3

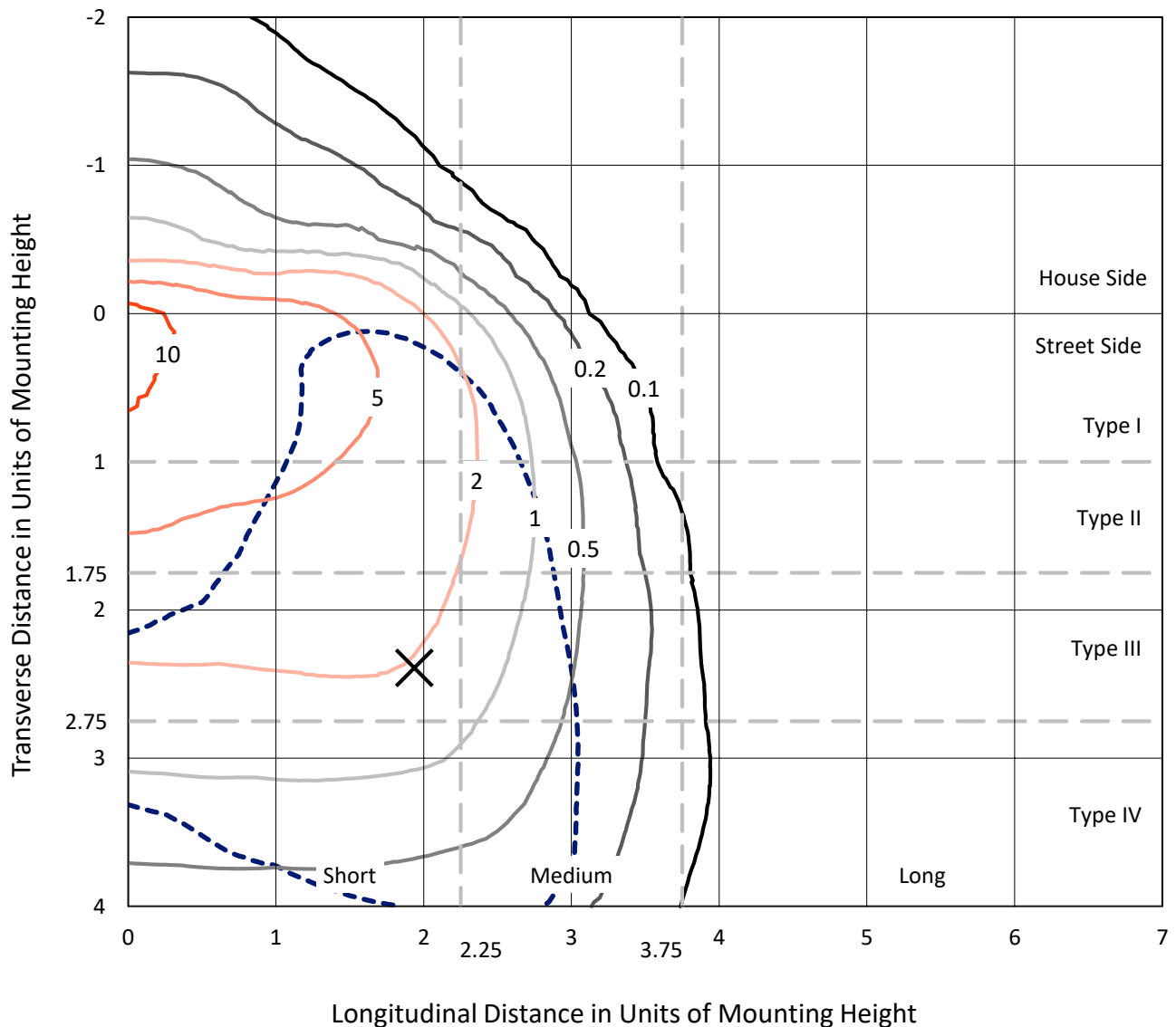
Input Watts (W): 66  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

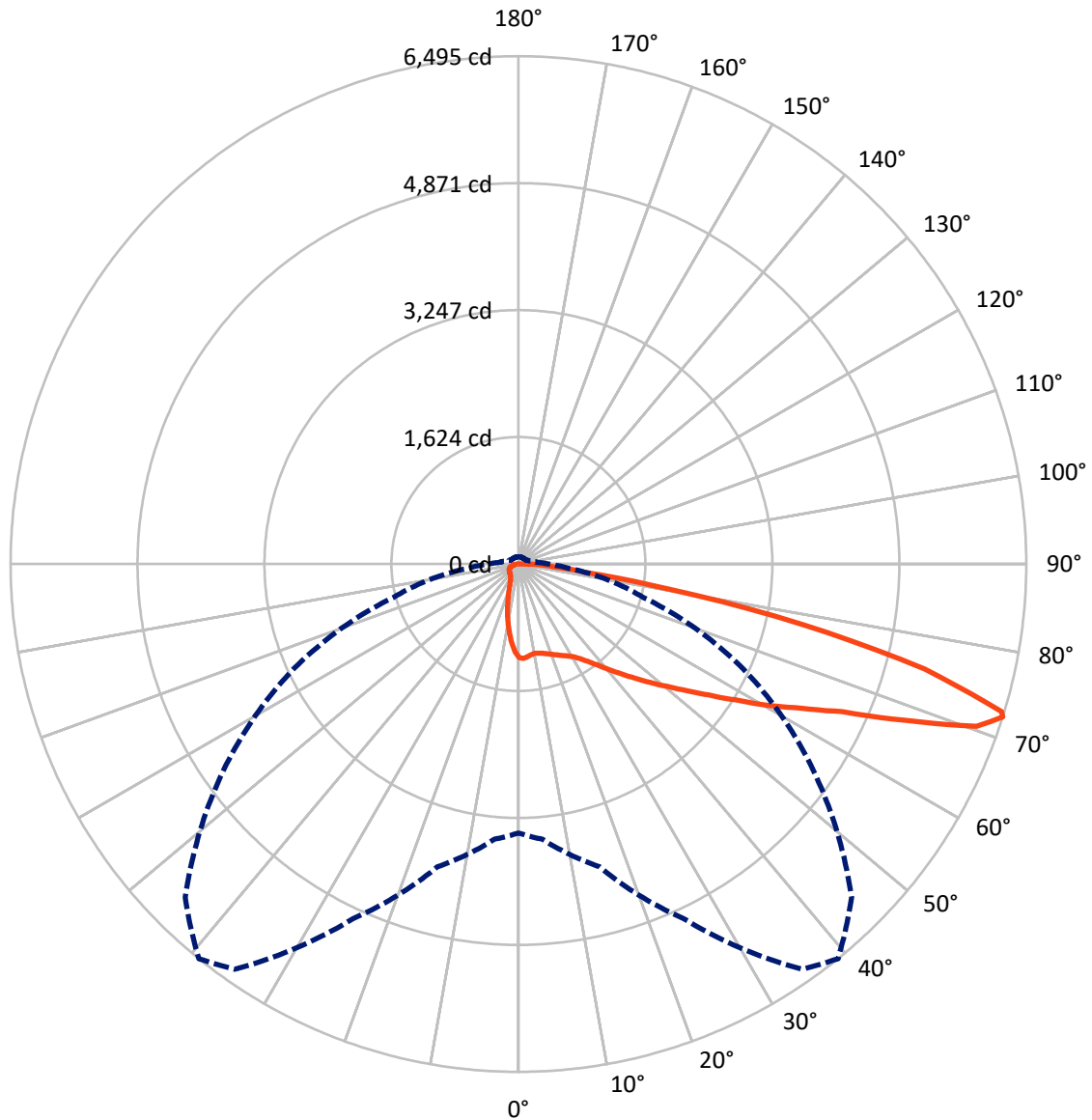
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12 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	898.0	0.0	898.0
	% Fixture	11.5	0.0	11.5
<b>Street Side</b>	Lumens	6933.7	0.0	6933.7
	% Fixture	88.5	0.0	88.5
<b>Total</b>	Lumens	7831.7	0.0	7831.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.8	1.3
10°-20°	258.3	3.3
20°-30°	402.5	5.1
30°-40°	619.7	7.9
40°-50°	1010.3	12.9
50°-60°	1569.8	20.0
60°-70°	2101.2	26.8
70°-80°	1511.0	19.3
80°-90°	256.2	3.3
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°	7831.7	100.0
0°-180°	7831.7	100.0



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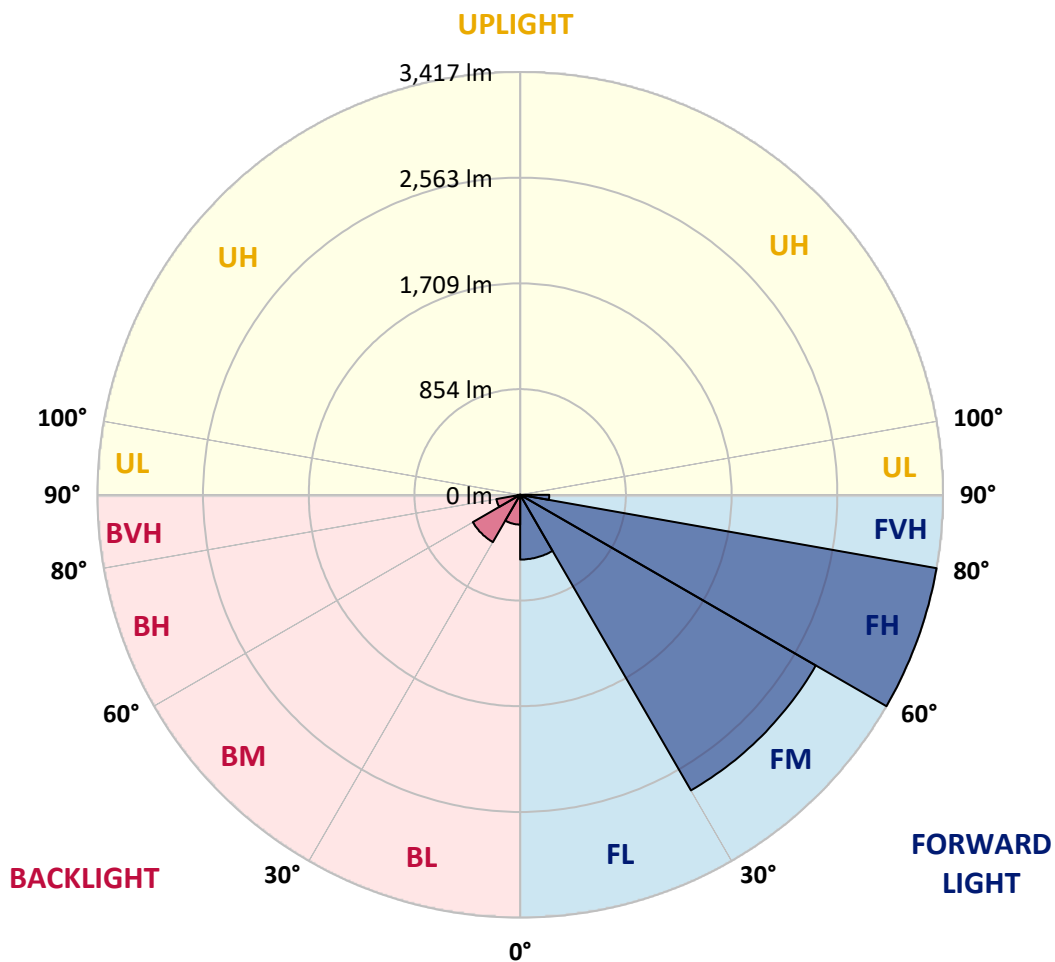
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	523.1	6.7			
FM	(30°-60°)	2758.5	35.2			
FH	(60°-80°)	3417.1	43.6			G2/5000
FVH	(80°-90°)	235.0	3.0			G3/500
BL	(0°-30°)	240.4	3.1	B1/500		
BM	(30°-60°)	441.3	5.6	B1/1000		
BH	(60°-80°)	195.1	2.5	B1/500		G1/500
BVH	(80°-90°)	21.2	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0
2.5°	1221.8	1222.3	1220.8	1216.0	1211.8	1209.7	1206.1	1199.7	1191.3	1185.5	1180.8
5°	1210.3	1211.8	1210.8	1202.9	1195.5	1191.3	1185.5	1176.6	1165.6	1160.8	1149.8
7.5°	1201.3	1202.4	1199.2	1190.3	1176.1	1170.8	1160.3	1148.8	1138.7	1131.9	1118.8
10°	1195.0	1196.0	1193.4	1184.5	1168.7	1162.4	1149.8	1137.1	1124.0	1115.6	1100.9
12.5°	1186.0	1188.2	1188.2	1184.0	1173.4	1169.2	1156.7	1142.9	1130.9	1121.9	1103.6
15°	1184.5	1187.1	1191.8	1191.3	1188.2	1185.0	1175.1	1161.4	1150.8	1140.3	1117.7
17.5°	1197.7	1203.4	1212.9	1216.0	1213.9	1207.1	1195.5	1182.9	1171.4	1161.4	1133.5
20°	1230.7	1233.9	1248.1	1254.4	1243.9	1233.9	1218.6	1202.4	1191.8	1184.0	1148.2
22.5°	1280.7	1284.9	1296.5	1297.0	1274.9	1262.8	1243.4	1223.3	1213.4	1210.3	1168.2
25°	1360.6	1359.5	1362.7	1349.6	1309.6	1295.4	1271.7	1248.6	1241.8	1248.1	1197.7
27.5°	1456.3	1453.6	1443.7	1409.5	1349.1	1330.7	1302.2	1281.8	1281.8	1296.5	1237.6
30°	1566.6	1564.1	1531.5	1474.2	1395.8	1374.7	1344.9	1323.3	1334.3	1362.7	1291.7
32.5°	1683.4	1674.0	1628.2	1551.4	1462.6	1439.5	1410.5	1388.5	1409.5	1457.8	1369.5
35°	1793.2	1788.0	1731.8	1640.8	1548.8	1529.3	1509.4	1482.1	1515.7	1590.9	1479.4
37.5°	1906.9	1902.6	1833.7	1737.1	1653.9	1640.8	1624.0	1605.1	1659.2	1758.0	1628.2
40°	2033.5	2025.1	1938.4	1841.6	1776.5	1770.1	1761.2	1756.0	1843.3	1990.5	1816.5
42.5°	2177.0	2160.8	2048.8	1956.8	1910.0	1915.3	1910.6	1931.5	2065.0	2258.6	2040.4
45°	2341.1	2308.5	2158.6	2079.2	2057.8	2078.7	2088.8	2142.4	2327.4	2568.2	2290.6
47.5°	2494.6	2452.5	2279.0	2212.3	2224.4	2260.6	2289.1	2383.7	2615.0	2874.2	2546.1
50°	2636.0	2588.7	2407.8	2350.0	2408.9	2460.4	2519.3	2652.8	2920.9	3189.0	2780.6
52.5°	2740.7	2706.5	2536.7	2500.4	2620.8	2689.1	2783.2	2952.0	3230.1	3489.3	2989.9
55°	2821.6	2803.2	2662.3	2672.9	2860.5	2958.3	3072.4	3266.4	3557.1	3758.4	3158.1
57.5°	2915.2	2901.5	2805.9	2881.0	3158.1	3281.1	3415.7	3631.3	3868.4	3995.5	3290.0
60°	3014.0	3014.0	2965.6	3131.8	3530.3	3671.2	3805.3	3972.9	4178.5	4209.0	3343.6
62.5°	3088.7	3108.1	3125.5	3398.9	3883.6	4058.7	4205.9	4366.8	4499.8	4314.2	3217.5
65°	3197.0	3238.6	3336.3	3707.5	4321.0	4550.2	4748.9	4884.1	4760.0	4230.6	2805.9
67.5°	3383.1	3444.6	3652.8	4167.0	4990.8	5334.1	5527.0	5293.6	4708.9	3704.3	2149.2
70°	3550.8	3637.5	3993.5	4750.0	5861.4	6217.8	6129.0	5198.4	4101.2	2715.4	1322.3
72°	3439.4	3534.0	4009.3	5004.0	6326.6	6494.9	6026.5	4607.0	3169.1	1657.1	651.9
72.5°	3366.2	3464.6	3958.2	4997.6	6339.3	6459.7	5884.0	4372.0	2876.8	1449.9	527.3
75°	2812.2	2896.3	3403.6	4429.3	5586.4	5365.6	4591.7	2829.5	1322.3	468.4	271.3
77.5°	1836.4	1900.5	2346.9	3068.8	3913.0	3700.6	2794.8	1324.8	495.7	284.4	204.0
80°	922.7	968.4	1256.0	1613.5	2111.9	1943.1	1290.1	640.9	331.7	205.5	160.4
82.5°	641.9	683.9	864.8	823.8	882.7	854.3	606.7	534.7	248.2	129.8	84.1
85°	538.4	582.0	715.6	587.3	480.5	437.9	434.8	505.2	164.0	64.1	71.0
87.5°	469.4	535.7	590.4	429.0	329.6	290.7	320.2	463.2	52.1	35.2	21.6
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°	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0	1196.0
2.5°	1172.9	1171.4	1163.4	1151.3	1142.4	1136.6	1125.6	1125.0	1126.2	1116.7	1120.3
5°	1139.8	1133.5	1113.0	1085.1	1062.5	1041.0	1017.3	1009.4	1002.6	988.4	989.9
7.5°	1105.1	1094.0	1058.3	1012.5	968.9	928.9	889.6	870.1	855.4	837.0	837.0
10°	1084.6	1067.2	1012.5	945.8	876.4	818.1	759.1	723.9	698.2	674.5	672.9
12.5°	1083.5	1057.2	981.0	889.0	793.8	711.9	631.4	577.3	538.9	511.0	508.4
15°	1091.9	1055.2	954.7	836.0	716.1	609.4	509.9	441.1	392.2	361.2	358.0
17.5°	1099.3	1052.5	926.4	780.2	640.4	510.5	400.1	328.6	282.3	257.1	254.4
20°	1106.1	1046.8	890.1	721.3	556.8	418.0	312.8	255.0	224.5	210.3	208.7
22.5°	1116.1	1041.5	852.2	655.1	474.8	340.1	258.1	216.6	200.3	193.4	192.4
25°	1132.4	1042.0	815.4	587.3	399.6	283.4	223.4	197.6	188.7	184.0	184.0
27.5°	1156.0	1048.3	779.2	518.3	335.9	244.5	203.0	187.7	181.9	178.2	177.2
30°	1190.8	1059.9	740.7	453.2	285.5	217.7	190.9	181.4	176.7	173.5	173.0
32.5°	1241.2	1080.3	700.3	393.7	247.1	198.8	181.9	176.2	172.5	169.8	169.3
35°	1316.4	1116.7	660.8	343.3	219.7	185.1	174.5	169.8	167.7	166.6	166.1
37.5°	1426.8	1175.1	623.5	303.9	201.9	176.2	167.2	164.6	163.5	163.5	163.5
40°	1565.6	1251.8	589.8	276.0	191.9	169.3	161.9	159.8	159.8	160.4	160.4
42.5°	1734.4	1347.9	561.0	257.1	186.1	164.6	158.3	157.2	156.7	156.7	157.2
45°	1930.5	1461.5	543.1	242.3	181.9	161.9	155.6	155.1	153.0	151.9	151.9
47.5°	2127.6	1583.0	542.1	233.9	176.7	158.8	153.0	153.0	148.7	146.7	147.2
50°	2311.7	1691.9	553.6	231.8	173.5	154.1	150.4	150.9	145.1	142.5	142.0
52.5°	2459.9	1774.9	567.8	234.5	173.5	149.9	145.7	148.2	142.0	138.8	138.3
55°	2574.6	1832.7	573.1	240.3	175.6	146.2	141.4	145.7	140.9	136.7	136.7
57.5°	2656.5	1851.1	550.4	242.8	178.7	145.7	137.2	145.1	142.5	137.2	137.2
60°	2626.5	1744.3	466.4	232.9	178.2	144.5	134.1	146.2	147.7	142.0	142.0
62.5°	2392.6	1459.4	374.3	210.3	169.3	140.9	130.4	145.1	151.4	149.4	148.2
65°	1947.8	1070.4	290.2	183.5	154.1	133.0	122.4	135.6	143.0	145.1	145.7
67.5°	1372.7	677.7	225.6	156.1	135.1	121.4	113.5	119.9	122.4	123.6	125.6
70°	750.7	366.9	179.3	131.4	115.7	109.9	104.1	104.6	103.5	102.5	103.5
72°	377.0	239.8	151.4	114.1	102.5	98.8	96.3	94.6	94.6	93.1	93.6
72.5°	324.4	222.9	146.2	109.9	99.3	96.3	94.1	92.6	92.0	90.9	91.5
75°	216.0	176.7	121.9	92.0	84.6	82.6	83.6	82.0	82.6	81.5	82.0
77.5°	174.5	151.9	103.5	77.8	72.5	69.4	71.5	72.0	73.0	72.0	71.5
80°	146.2	129.3	86.7	64.1	60.5	57.8	58.9	62.6	63.1	59.9	59.4
82.5°	94.6	104.1	68.3	49.9	46.2	45.2	47.9	51.6	52.6	48.4	47.4
85°	79.4	83.6	49.4	34.2	30.5	29.5	34.7	38.4	41.0	36.8	35.7
87.5°	22.1	41.0	24.1	16.3	13.7	13.7	16.8	19.9	23.6	24.1	24.1
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)