

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: P195698

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7050-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195698
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-SL4-7050-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 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: 7656 lumens
Efficiency: N/A
Efficacy: 116.0 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

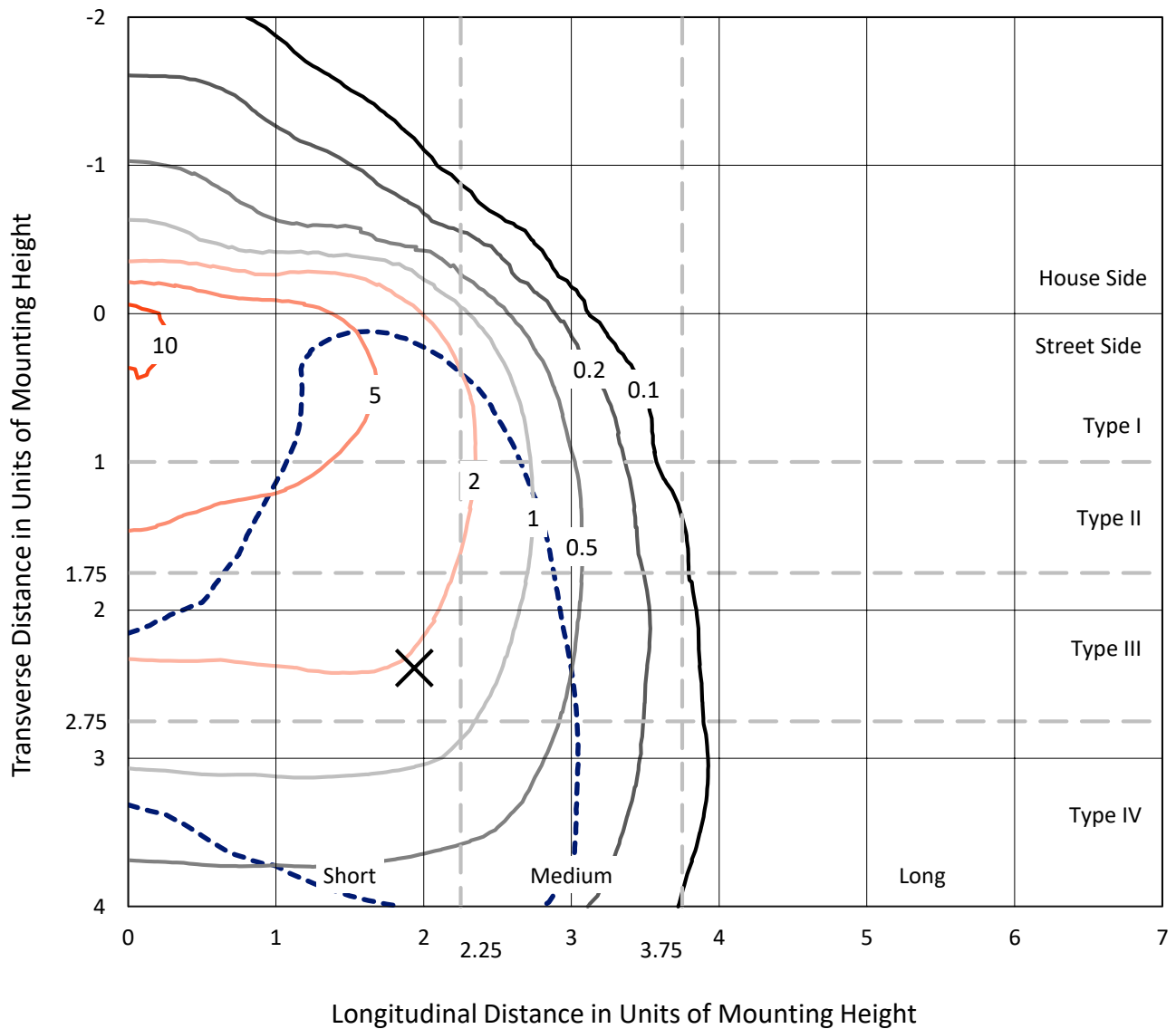
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

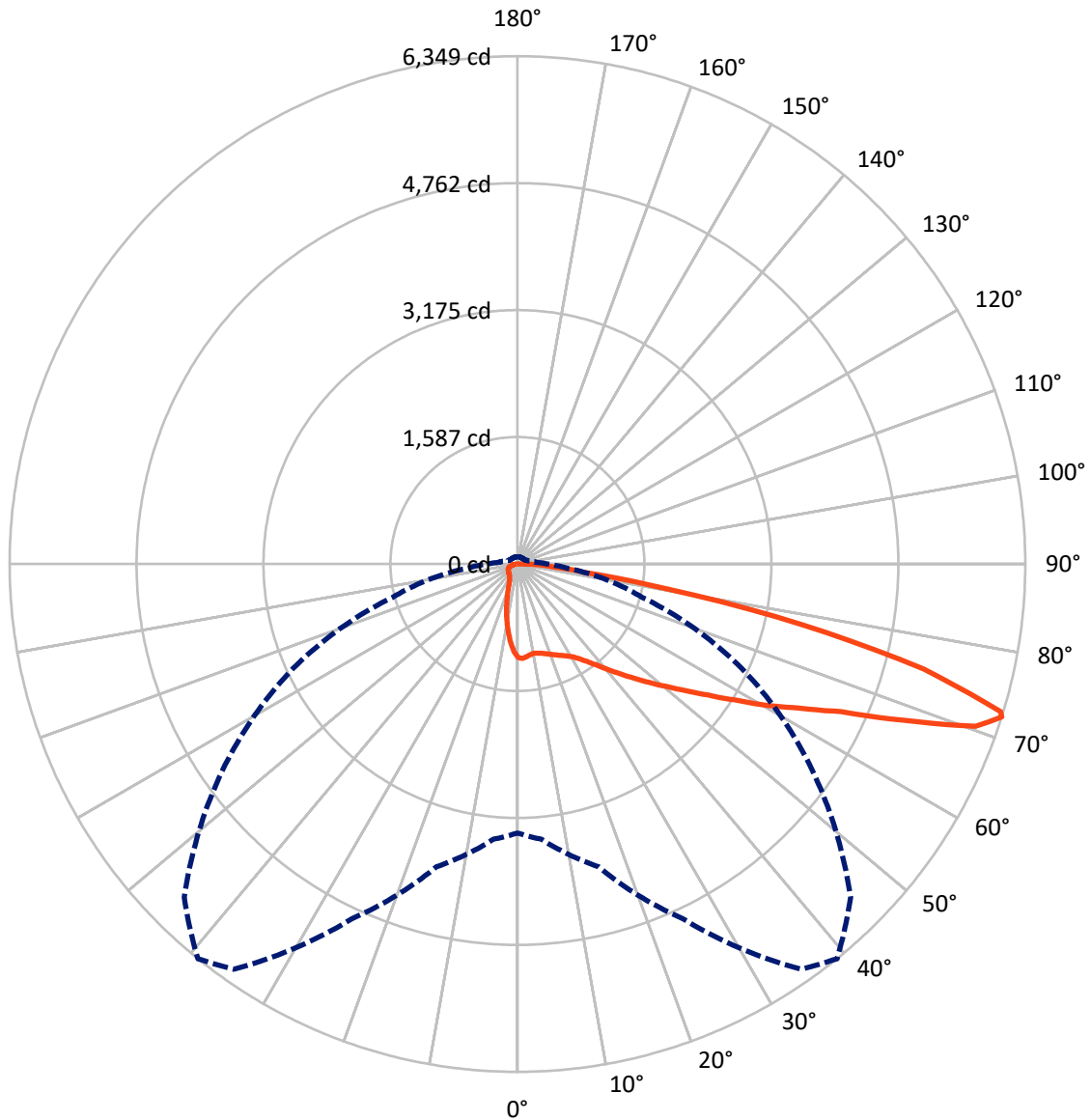
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.7 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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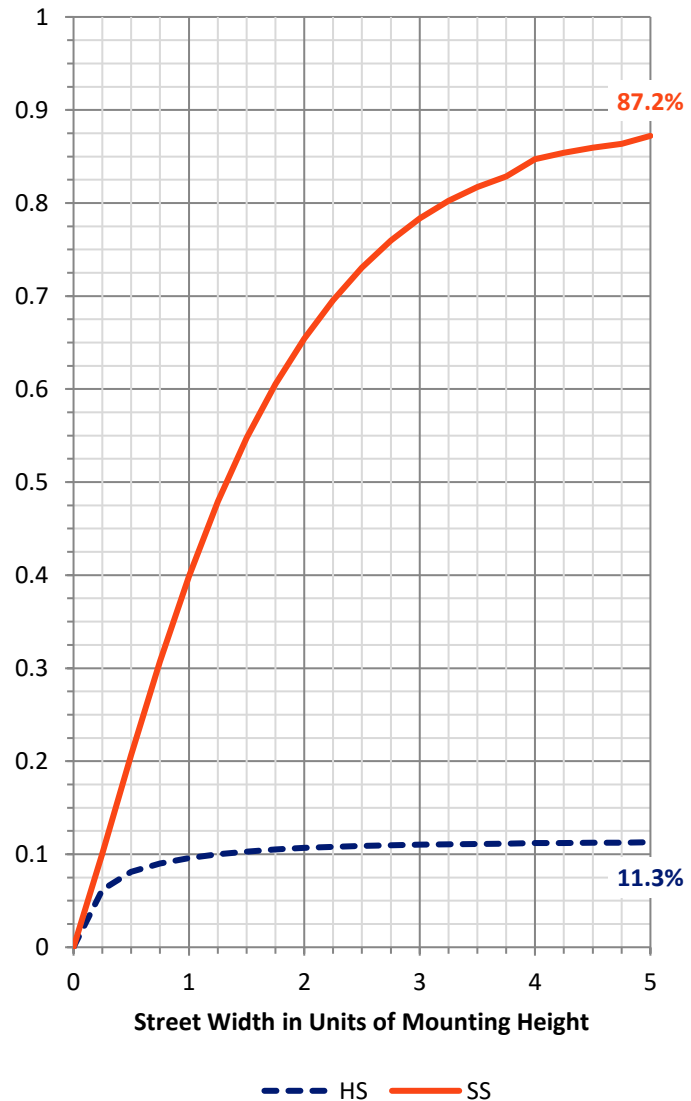
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	877.9	0.0	877.9
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	6778.1	0.0	6778.1
	% Fixture	88.5	0.0	88.5
Total	Lumens	7656.0	0.0	7656.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.5	1.3
10°-20°	252.5	3.3
20°-30°	393.5	5.1
30°-40°	605.8	7.9
40°-50°	987.6	12.9
50°-60°	1534.6	20.0
60°-70°	2054.0	26.8
70°-80°	1477.1	19.3
80°-90°	250.4	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°	7656.0	100.0
0°-180°	7656.0	100.0



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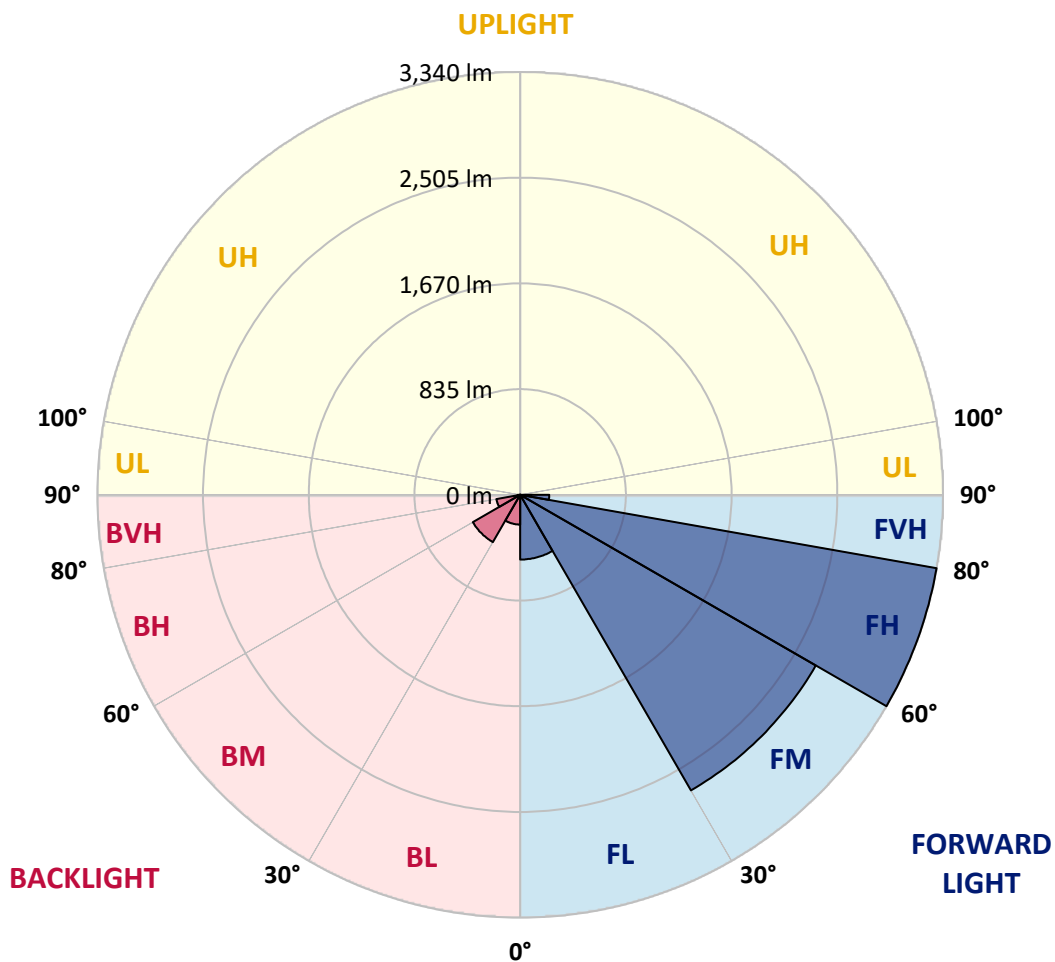
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	511.4	6.7			
FM	(30°-60°)	2696.6	35.2			
FH	(60°-80°)	3340.4	43.6			G2/5000
FVH	(80°-90°)	229.7	3.0			G3/500
BL	(0°-30°)	235.0	3.1	B1/500		
BM	(30°-60°)	431.4	5.6	B1/1000		
BH	(60°-80°)	190.7	2.5	B1/500		G1/500
BVH	(80°-90°)	20.7	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°	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2
2.5°	1194.4	1194.9	1193.4	1188.7	1184.6	1182.6	1179.0	1172.8	1164.6	1158.9	1154.3
5°	1183.1	1184.6	1183.6	1175.9	1168.7	1164.6	1158.9	1150.2	1139.4	1134.8	1124.0
7.5°	1174.3	1175.4	1172.3	1163.6	1149.7	1144.5	1134.3	1123.0	1113.2	1106.5	1093.7
10°	1168.2	1169.2	1166.6	1157.9	1142.5	1136.3	1124.0	1111.6	1098.8	1090.6	1076.2
12.5°	1159.4	1161.5	1161.5	1157.4	1147.1	1143.0	1130.7	1117.3	1105.5	1096.7	1078.8
15°	1157.9	1160.5	1165.1	1164.6	1161.5	1158.4	1148.7	1135.3	1125.0	1114.7	1092.6
17.5°	1170.8	1176.4	1185.7	1188.7	1186.7	1180.0	1168.7	1156.4	1145.1	1135.3	1108.1
20°	1203.1	1206.2	1220.1	1226.3	1216.0	1206.2	1191.3	1175.4	1165.1	1157.4	1122.4
22.5°	1252.0	1256.1	1267.4	1267.9	1246.3	1234.5	1215.5	1195.9	1186.2	1183.1	1142.0
25°	1330.1	1329.0	1332.1	1319.3	1280.2	1266.3	1243.2	1220.6	1213.9	1220.1	1170.8
27.5°	1423.6	1421.0	1411.3	1377.9	1318.8	1300.8	1273.0	1253.0	1253.0	1267.4	1209.8
30°	1531.5	1529.0	1497.1	1441.1	1364.5	1343.9	1314.7	1293.6	1304.4	1332.1	1262.7
32.5°	1645.6	1636.4	1591.7	1516.6	1429.8	1407.2	1378.9	1357.3	1377.9	1425.1	1338.8
35°	1753.0	1747.9	1692.9	1604.0	1514.1	1495.0	1475.5	1448.8	1481.7	1555.2	1446.2
37.5°	1864.1	1859.9	1792.6	1698.1	1616.8	1604.0	1587.6	1569.1	1622.0	1718.6	1591.7
40°	1987.9	1979.7	1894.9	1800.3	1736.6	1730.4	1721.7	1716.6	1801.9	1945.8	1775.7
42.5°	2128.2	2112.3	2002.8	1912.9	1867.1	1872.3	1867.7	1888.2	2018.7	2207.9	1994.6
45°	2288.6	2256.7	2110.2	2032.6	2011.6	2032.1	2041.9	2094.3	2275.2	2510.6	2239.2
47.5°	2438.6	2397.5	2227.9	2162.7	2174.5	2209.9	2237.7	2330.2	2556.3	2809.7	2489.0
50°	2576.9	2530.6	2353.8	2297.3	2354.9	2405.2	2462.8	2593.3	2855.4	3117.5	2718.2
52.5°	2679.2	2645.8	2479.8	2444.3	2562.0	2628.8	2720.8	2885.8	3157.6	3411.0	2922.8
55°	2758.3	2740.3	2602.6	2612.9	2796.3	2891.9	3003.5	3193.1	3477.3	3674.1	3087.2
57.5°	2849.8	2836.4	2742.9	2816.4	3087.2	3207.5	3339.1	3549.8	3781.6	3905.9	3216.2
60°	2946.4	2946.4	2899.1	3061.5	3451.1	3588.8	3719.9	3883.8	4084.8	4114.6	3268.6
62.5°	3019.4	3038.4	3055.4	3322.6	3796.5	3967.6	4111.5	4268.8	4398.8	4217.4	3145.3
65°	3125.3	3165.9	3261.4	3624.3	4224.1	4448.1	4642.4	4774.5	4653.2	4135.7	2742.9
67.5°	3307.2	3367.3	3570.8	4073.5	4878.8	5214.4	5403.0	5174.8	4603.3	3621.2	2101.0
70°	3471.1	3555.9	3903.9	4643.4	5729.9	6078.3	5991.5	5081.8	4009.2	2654.5	1292.6
72°	3362.2	3454.7	3919.3	4891.7	6184.7	6349.2	5891.3	4503.6	3098.0	1619.9	637.3
72.5°	3290.7	3386.9	3869.4	4885.5	6197.1	6314.8	5752.0	4273.9	2812.3	1417.4	515.5
75°	2749.1	2831.3	3327.2	4329.9	5461.1	5245.2	4488.7	2766.0	1292.6	457.9	265.2
77.5°	1795.2	1857.9	2294.2	2999.9	3825.2	3617.6	2732.1	1295.1	484.6	278.0	199.4
80°	902.0	946.7	1227.8	1577.3	2064.5	1899.5	1261.2	626.5	324.3	200.9	156.8
82.5°	627.5	668.6	845.4	805.3	862.9	835.1	593.1	522.7	242.6	126.9	82.2
85°	526.3	568.9	699.5	574.1	469.7	428.1	425.0	493.9	160.3	62.7	69.4
87.5°	458.9	523.7	577.2	419.4	322.2	284.2	313.0	452.8	50.9	34.4	21.1
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°	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2	1169.2
2.5°	1146.6	1145.1	1137.3	1125.5	1116.8	1111.1	1100.3	1099.8	1100.9	1091.6	1095.2
5°	1114.2	1108.1	1088.0	1060.8	1038.7	1017.6	994.5	986.8	980.1	966.2	967.7
7.5°	1080.3	1069.5	1034.6	989.8	947.2	908.1	869.6	850.6	836.2	818.2	818.2
10°	1060.3	1043.3	989.8	924.6	856.7	799.7	742.1	707.7	682.5	659.4	657.8
12.5°	1059.2	1033.5	959.0	869.1	776.0	695.9	617.2	564.3	526.8	499.5	497.0
15°	1067.4	1031.5	933.3	817.2	700.0	595.7	498.5	431.2	383.4	353.1	350.0
17.5°	1074.6	1028.9	905.6	762.7	626.0	499.0	391.1	321.2	276.0	251.3	248.7
20°	1081.3	1023.3	870.1	705.1	544.3	408.6	305.8	249.3	219.5	205.6	204.0
22.5°	1091.1	1018.1	833.1	640.4	464.1	332.5	252.3	211.7	195.8	189.1	188.1
25°	1107.0	1018.6	797.1	574.1	390.6	277.0	218.4	193.2	184.5	179.9	179.9
27.5°	1130.1	1024.8	761.7	506.7	328.4	239.0	198.4	183.5	177.8	174.2	173.2
30°	1164.1	1036.1	724.1	443.0	279.1	212.8	186.6	177.3	172.7	169.6	169.1
32.5°	1213.4	1056.1	684.6	384.9	241.6	194.3	177.8	172.2	168.6	166.0	165.5
35°	1286.9	1091.6	646.0	335.6	214.8	180.9	170.6	166.0	163.9	162.9	162.4
37.5°	1394.8	1148.7	609.5	297.1	197.4	172.2	163.4	160.9	159.8	159.8	159.8
40°	1530.5	1223.7	576.6	269.8	187.6	165.5	158.3	156.2	156.2	156.8	156.8
42.5°	1695.5	1317.7	548.4	251.3	181.9	160.9	154.7	153.7	153.2	153.2	153.7
45°	1887.2	1428.7	530.9	236.9	177.8	158.3	152.1	151.6	149.6	148.5	148.5
47.5°	2079.9	1547.5	529.9	228.7	172.7	155.2	149.6	149.6	145.4	143.4	143.9
50°	2259.8	1653.9	541.2	226.6	169.6	150.6	147.0	147.5	141.8	139.3	138.8
52.5°	2404.7	1735.1	555.1	229.2	169.6	146.5	142.4	144.9	138.8	135.7	135.2
55°	2516.8	1791.6	560.2	234.9	171.7	142.9	138.2	142.4	137.7	133.6	133.6
57.5°	2596.9	1809.6	538.1	237.4	174.7	142.4	134.1	141.8	139.3	134.1	134.1
60°	2567.6	1705.2	455.9	227.7	174.2	141.3	131.1	142.9	144.4	138.8	138.8
62.5°	2338.9	1426.7	365.9	205.6	165.5	137.7	127.5	141.8	148.0	146.0	144.9
65°	1904.1	1046.4	283.7	179.4	150.6	130.0	119.7	132.6	139.8	141.8	142.4
67.5°	1341.9	662.5	220.5	152.6	132.1	118.7	111.0	117.2	119.7	120.8	122.8
70°	733.9	358.7	175.3	128.5	113.1	107.4	101.8	102.3	101.2	100.2	101.2
72°	368.5	234.4	148.0	111.5	100.2	96.6	94.1	92.5	92.5	91.0	91.5
72.5°	317.1	217.9	142.9	107.4	97.1	94.1	92.0	90.5	89.9	88.9	89.4
75°	211.2	172.7	119.2	89.9	82.7	80.7	81.7	80.2	80.7	79.7	80.2
77.5°	170.6	148.5	101.2	76.1	70.9	67.8	69.9	70.4	71.4	70.4	69.9
80°	142.9	126.4	84.8	62.7	59.1	56.5	57.6	61.2	61.7	58.6	58.1
82.5°	92.5	101.8	66.8	48.8	45.2	44.2	46.8	50.4	51.4	47.3	46.3
85°	77.6	81.7	48.3	33.4	29.8	28.8	33.9	37.5	40.1	36.0	34.9
87.5°	21.6	40.1	23.6	15.9	13.4	13.4	16.4	19.5	23.1	23.6	23.6
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)