

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: P196009

Luminaire Tested: **NAV-AF-01-D-UNV-AFL-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196009
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)
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-AFL-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 4000K, 615mA LIGHTSQUARE WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4218.6 lumens
Efficiency: N/A
Efficacy: 124.1 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B1 - U0 - G1

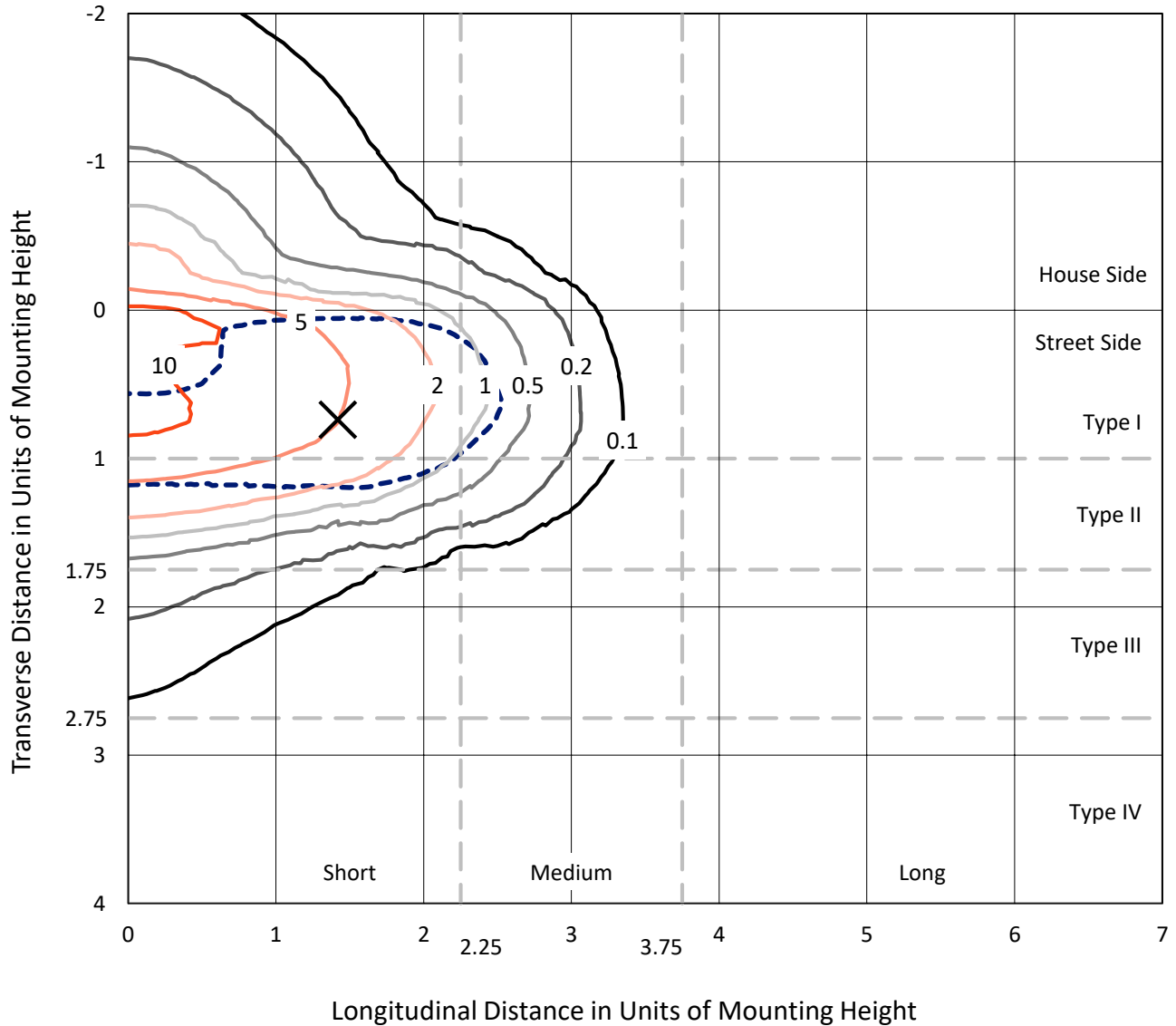
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

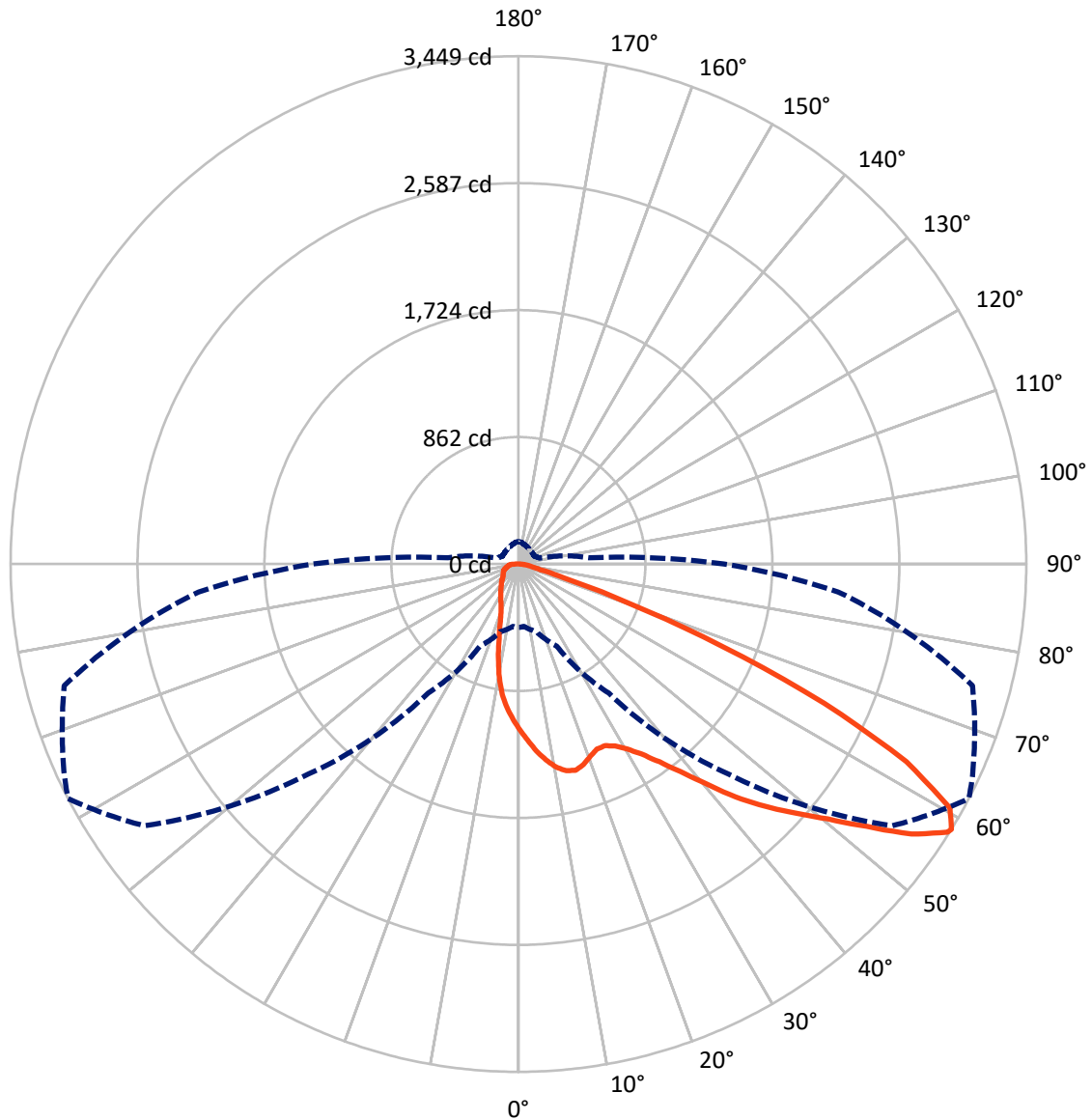
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.2 fc
 Type II - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral - - - Horizontal Cone Through 58-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	647.7	0.0	647.7
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	3570.9	0.0	3570.9
	% Fixture	84.6	0.0	84.6
Total	Lumens	4218.6	0.0	4218.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.7	2.4
10°-20°	254.1	6.0
20°-30°	411.8	9.8
30°-40°	657.4	15.6
40°-50°	956.3	22.7
50°-60°	1000.6	23.7
60°-70°	610.0	14.5
70°-80°	170.6	4.0
80°-90°	57.2	1.4
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°	4218.6	100.0
0°-180°	4218.6	100.0



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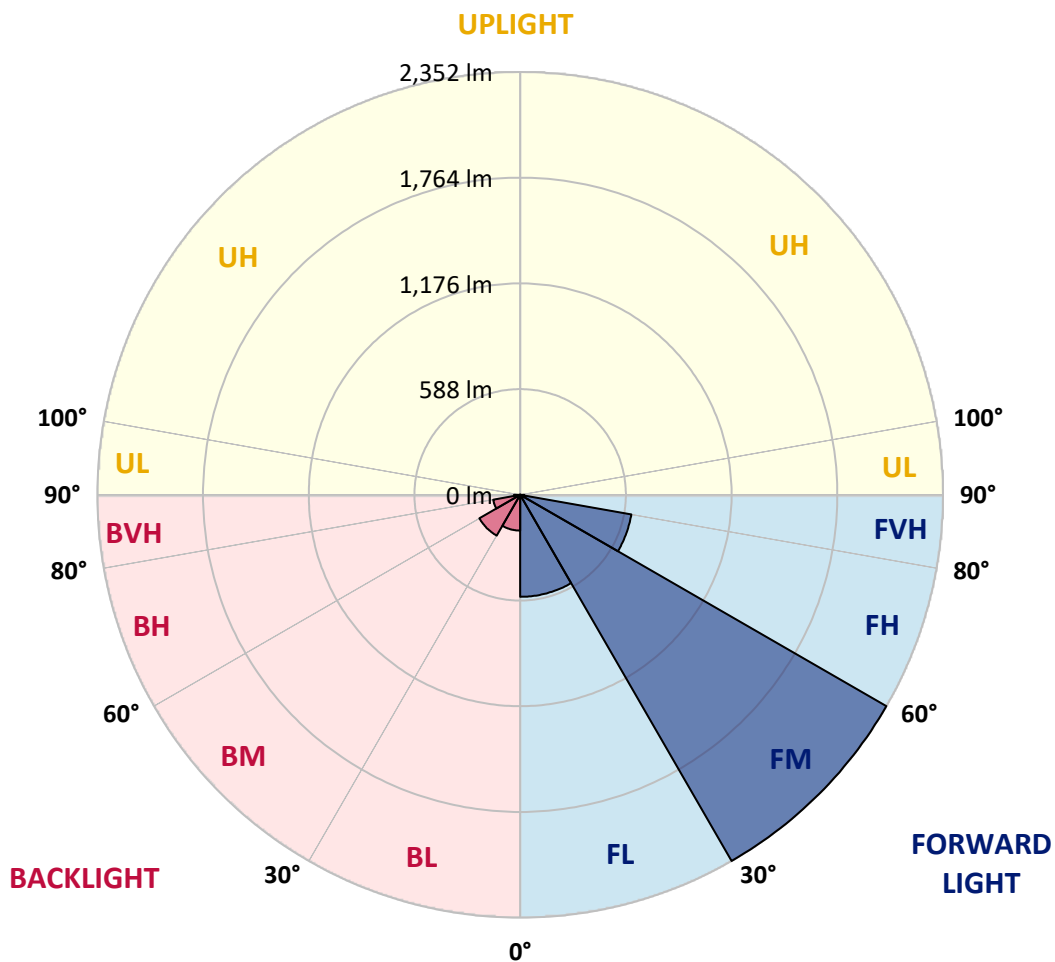
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	567.4	13.5			
FM	(30°-60°)	2352.4	55.8			
FH	(60°-80°)	628.1	14.9			G0/660
FVH	(80°-90°)	23.0	0.5			G1/100
BL	(0°-30°)	199.1	4.7	B1/500		
BM	(30°-60°)	262.0	6.2	B1/1000		
BH	(60°-80°)	152.5	3.6	B1/500		G1/500
BVH	(80°-90°)	34.2	0.8			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4
2.5°	1278.5	1277.7	1266.9	1259.8	1251.4	1231.8	1212.3	1197.8	1190.4	1162.2	1134.8
5°	1384.3	1381.1	1374.9	1367.4	1356.2	1331.8	1300.9	1274.3	1263.8	1213.6	1163.3
7.5°	1328.3	1333.3	1352.0	1373.1	1395.3	1396.8	1374.9	1343.3	1331.8	1264.8	1190.9
10°	1173.5	1171.5	1194.9	1236.0	1309.1	1381.3	1417.4	1401.9	1389.8	1313.3	1218.6
12.5°	1126.6	1126.1	1130.1	1140.6	1186.4	1285.6	1406.7	1440.4	1436.1	1364.7	1248.2
15°	1140.9	1141.4	1141.1	1142.4	1155.1	1202.3	1346.2	1453.3	1466.5	1415.6	1278.2
17.5°	1186.4	1184.6	1178.8	1172.5	1174.3	1191.2	1281.1	1431.1	1470.7	1461.0	1303.5
20°	1256.9	1256.9	1241.4	1223.7	1212.0	1215.8	1253.9	1393.2	1451.2	1499.4	1322.5
22.5°	1345.2	1346.5	1323.6	1291.4	1265.1	1255.1	1269.5	1364.9	1427.4	1535.0	1339.3
25°	1454.8	1454.6	1421.1	1374.9	1333.3	1309.4	1309.1	1366.3	1420.1	1576.7	1357.0
27.5°	1590.7	1578.3	1539.2	1473.6	1414.8	1378.1	1361.5	1399.5	1435.6	1627.8	1380.8
30°	1743.8	1731.1	1680.0	1595.7	1516.0	1462.5	1435.1	1457.0	1483.1	1693.0	1416.7
32.5°	1895.4	1898.4	1838.2	1743.0	1640.7	1565.3	1524.7	1538.2	1556.4	1772.6	1465.2
35°	2117.4	2117.2	2038.6	1919.7	1798.1	1693.7	1642.3	1649.4	1666.1	1884.9	1533.2
37.5°	2283.0	2280.4	2229.7	2124.6	1987.7	1862.5	1788.1	1789.1	1803.5	2026.0	1622.8
40°	2299.9	2299.4	2299.1	2284.0	2190.4	2072.4	1979.3	1960.1	1965.8	2175.7	1718.0
42.5°	2171.0	2190.2	2245.6	2330.5	2356.6	2294.6	2206.6	2163.5	2151.0	2347.6	1818.7
45°	1987.2	1997.0	2094.0	2284.9	2440.1	2503.5	2437.3	2346.5	2325.0	2514.8	1900.7
47.5°	1901.8	1897.6	1953.7	2161.7	2432.0	2669.6	2674.3	2525.6	2488.9	2659.0	1970.6
50°	1718.6	1713.0	1783.9	1980.6	2342.9	2752.0	2917.7	2720.7	2652.9	2796.1	2033.8
52.5°	1353.4	1348.0	1443.3	1696.7	2143.6	2721.3	3122.8	2960.1	2844.6	2928.2	2093.0
55°	880.7	881.2	971.8	1233.2	1734.6	2541.4	3219.0	3236.7	3107.2	3060.3	2140.6
57.5°	484.9	480.4	545.0	705.5	1193.3	2133.0	3138.8	3436.0	3368.5	3173.7	2175.2
58°	431.1	425.9	475.7	614.1	1069.9	2017.8	3098.5	3448.7	3402.0	3192.4	2180.2
60°	307.2	298.2	290.5	346.2	616.4	1454.8	2829.6	3366.6	3411.7	3229.9	2175.4
62.5°	258.9	248.7	221.2	219.1	290.3	711.7	2237.7	2956.6	3083.0	3143.6	2099.0
65°	240.5	230.2	194.1	181.2	196.9	307.2	1383.6	2283.0	2451.8	2843.8	1906.5
67.5°	227.3	215.1	176.4	159.5	162.6	183.7	587.2	1493.1	1688.7	2217.7	1529.5
70°	215.4	201.9	162.4	142.9	140.2	139.7	229.3	779.6	968.1	1451.2	1024.6
72.5°	201.9	188.7	150.1	129.2	123.4	113.3	137.9	322.2	441.6	711.4	469.5
75°	182.5	171.7	136.4	117.8	107.8	92.1	101.8	154.5	190.4	272.3	218.1
77.5°	160.6	151.9	122.3	108.3	94.9	75.2	77.7	104.6	117.6	153.4	126.3
80°	113.6	116.8	106.8	95.4	83.6	60.7	59.8	76.7	84.4	103.1	84.9
82.5°	78.3	80.7	87.1	75.4	67.5	47.2	44.0	53.3	57.2	62.2	41.1
85°	55.9	54.3	60.4	54.0	49.6	30.1	28.2	33.8	36.1	38.0	19.7
87.5°	34.0	33.8	34.8	27.9	25.9	15.2	14.0	16.1	17.2	16.6	9.5
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°	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4	1126.4
2.5°	1124.5	1111.5	1083.4	1060.7	1036.1	1017.4	998.7	988.2	976.6	970.0	969.2
5°	1136.9	1110.5	1050.5	994.5	937.0	885.4	834.7	797.3	766.7	749.3	748.3
7.5°	1150.6	1109.2	1016.4	919.6	817.3	715.6	625.6	562.1	521.3	502.3	500.9
10°	1161.2	1103.7	975.0	824.5	662.4	527.8	446.1	408.7	396.3	393.1	392.6
12.5°	1173.8	1099.7	922.8	702.4	506.3	401.8	377.1	374.7	377.3	378.9	379.1
15°	1185.7	1092.1	852.4	567.1	396.3	359.1	359.7	364.7	369.9	372.3	372.6
17.5°	1191.2	1073.4	759.8	446.9	346.7	339.8	346.0	352.5	357.2	359.1	359.1
20°	1191.2	1043.3	652.5	362.0	320.9	322.2	329.6	334.6	335.6	334.1	333.3
22.5°	1186.2	1006.1	548.1	315.9	299.8	304.8	310.6	307.2	294.8	285.3	283.5
25°	1181.7	962.1	447.6	287.7	281.3	288.0	285.5	262.1	243.1	233.3	231.8
27.5°	1174.3	908.8	363.9	264.4	263.4	268.6	245.2	222.5	213.1	207.8	206.7
30°	1172.5	851.1	304.5	243.9	245.7	238.3	211.4	204.1	201.9	199.1	197.7
32.5°	1178.5	793.4	267.4	227.0	228.8	204.6	194.4	195.4	195.1	191.4	190.1
35°	1195.2	737.2	243.7	211.8	206.4	183.2	184.5	187.7	187.7	183.2	181.7
37.5°	1224.2	685.0	228.6	198.8	180.7	172.2	175.6	179.8	179.8	176.7	175.3
40°	1255.1	634.1	217.3	188.5	164.3	164.5	168.0	171.1	172.5	173.0	171.9
42.5°	1283.0	581.3	205.1	177.5	156.9	158.8	160.3	162.6	168.2	171.9	171.3
45°	1299.4	528.4	191.9	163.8	151.9	152.6	152.1	156.3	163.0	168.5	168.5
47.5°	1314.4	484.9	181.2	150.1	146.9	146.9	145.3	149.5	155.6	162.1	162.6
50°	1328.6	456.6	173.5	139.4	140.6	139.7	139.2	143.2	151.3	159.3	160.6
52.5°	1343.0	447.1	166.6	131.9	133.9	132.9	133.4	138.9	148.2	156.3	157.6
55°	1363.4	453.3	159.5	126.5	127.6	127.4	129.5	135.7	143.9	152.1	152.6
57.5°	1388.5	475.4	153.4	122.7	121.5	123.2	126.5	132.6	140.6	150.3	151.1
58°	1393.5	480.7	152.4	121.5	120.2	122.7	126.0	131.9	140.0	150.3	151.1
60°	1401.0	499.4	149.8	119.5	115.7	120.0	124.2	130.0	138.9	151.6	153.1
62.5°	1364.2	503.1	148.9	117.0	111.0	116.3	121.3	127.9	137.9	156.1	159.5
65°	1236.3	465.1	143.4	113.1	107.0	113.3	118.7	126.3	141.1	169.5	171.1
67.5°	992.4	386.3	130.0	107.0	102.6	110.0	116.5	126.3	142.4	171.7	172.7
70°	682.3	290.3	113.1	100.5	97.3	105.8	115.7	129.2	137.9	162.4	159.3
72.5°	356.5	201.9	99.1	92.8	90.9	102.0	123.4	126.3	132.6	151.6	148.4
75°	179.5	137.4	87.3	84.1	83.9	100.8	138.2	121.5	127.1	142.6	149.5
77.5°	106.0	107.6	77.7	75.9	77.2	98.3	138.4	116.8	120.7	131.3	138.7
80°	72.5	88.9	70.4	69.9	70.9	90.4	127.6	111.0	113.3	124.2	132.1
82.5°	40.9	49.0	61.7	65.2	64.5	74.1	110.2	101.0	103.9	146.9	155.3
85°	19.7	29.6	51.7	60.9	55.1	49.3	89.6	89.6	90.4	105.2	106.5
87.5°	7.4	13.2	34.8	48.3	38.5	29.6	60.9	63.5	70.7	72.7	74.4
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)