

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: P195224

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7060-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195224
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-SL4-7060-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5700K, 800mA 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: 9388 lumens
Efficiency: N/A
Efficacy: 110.4 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

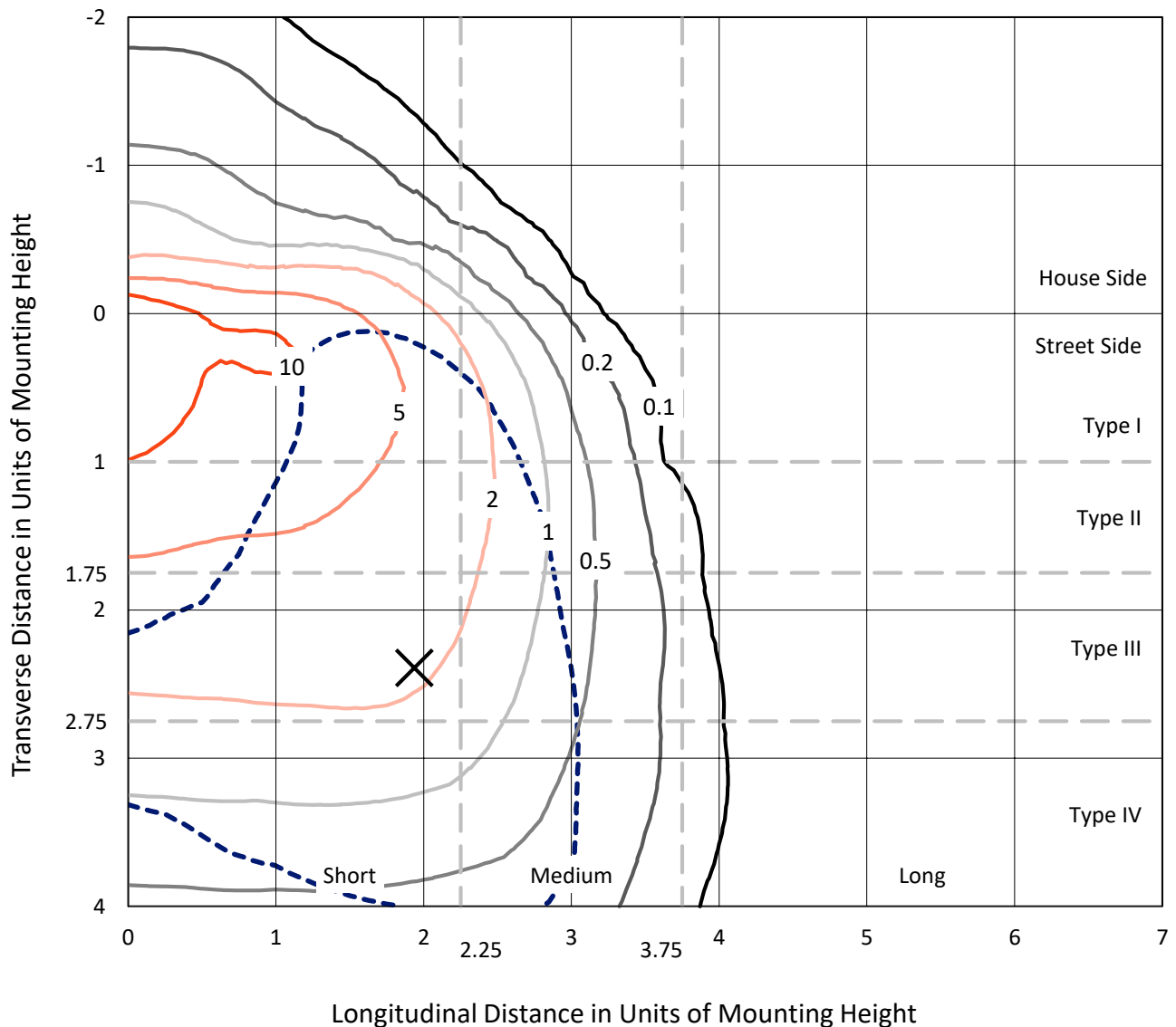
Input Watts (W): 85
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P195224
 CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7060-800

Iso-Footcandle Lines of Horizontal Illumination

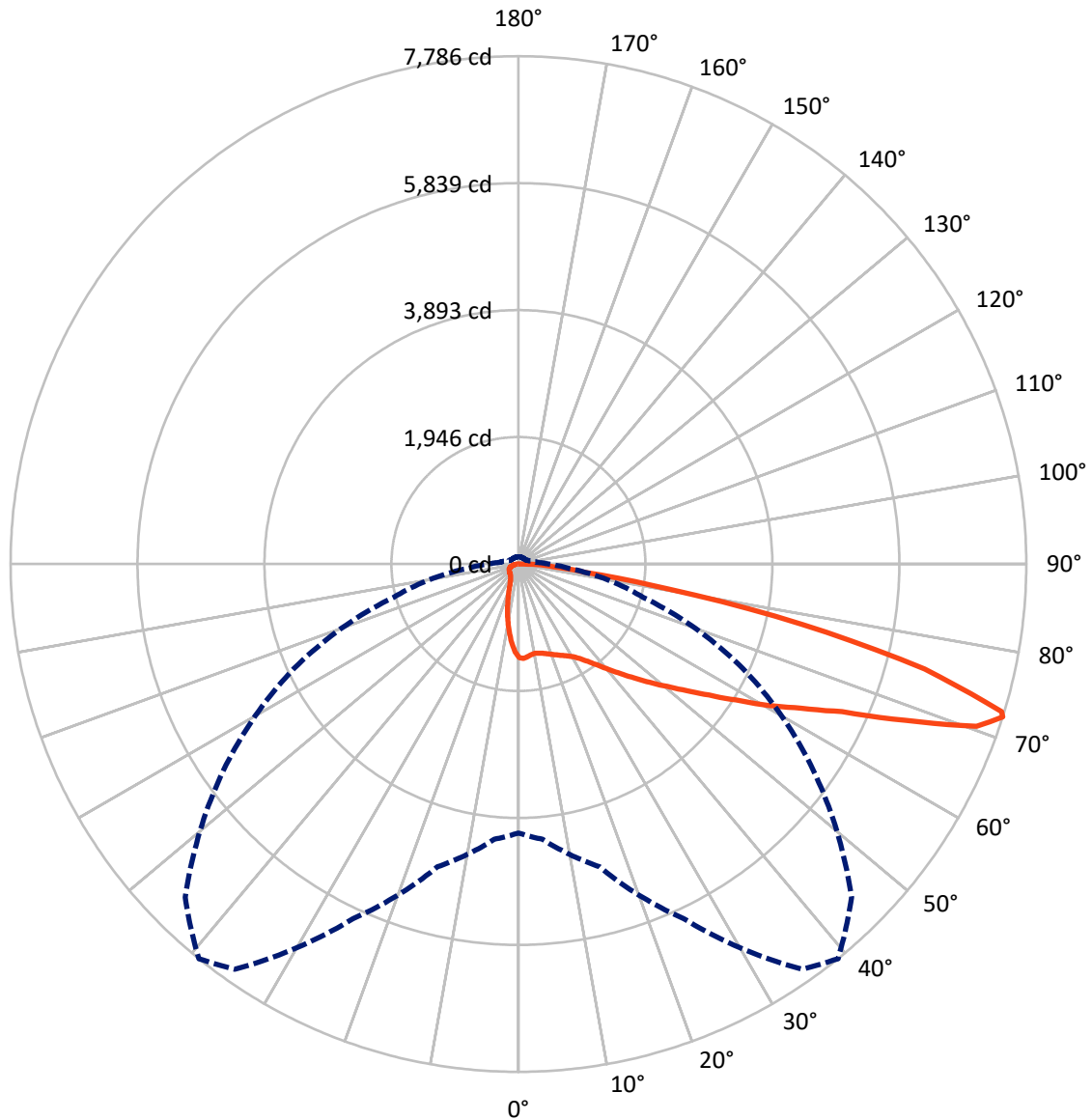
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.3 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P195224
CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7060-800

Luminous Intensity Polar Plot



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

REPORT NUMBER: P195224

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7060-800

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1076.5	0.0	1076.5
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	8311.5	0.0	8311.5
	% Fixture	88.5	0.0	88.5
Total	Lumens	9388.0	0.0	9388.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	123.2	1.3
10°-20°	309.6	3.3
20°-30°	482.5	5.1
30°-40°	742.9	7.9
40°-50°	1211.0	12.9
50°-60°	1881.8	20.0
60°-70°	2518.7	26.8
70°-80°	1811.3	19.3
80°-90°	307.1	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°	9388.0	100.0
0°-180°	9388.0	100.0

Coefficient of Utilization



REPORT NUMBER: P195224

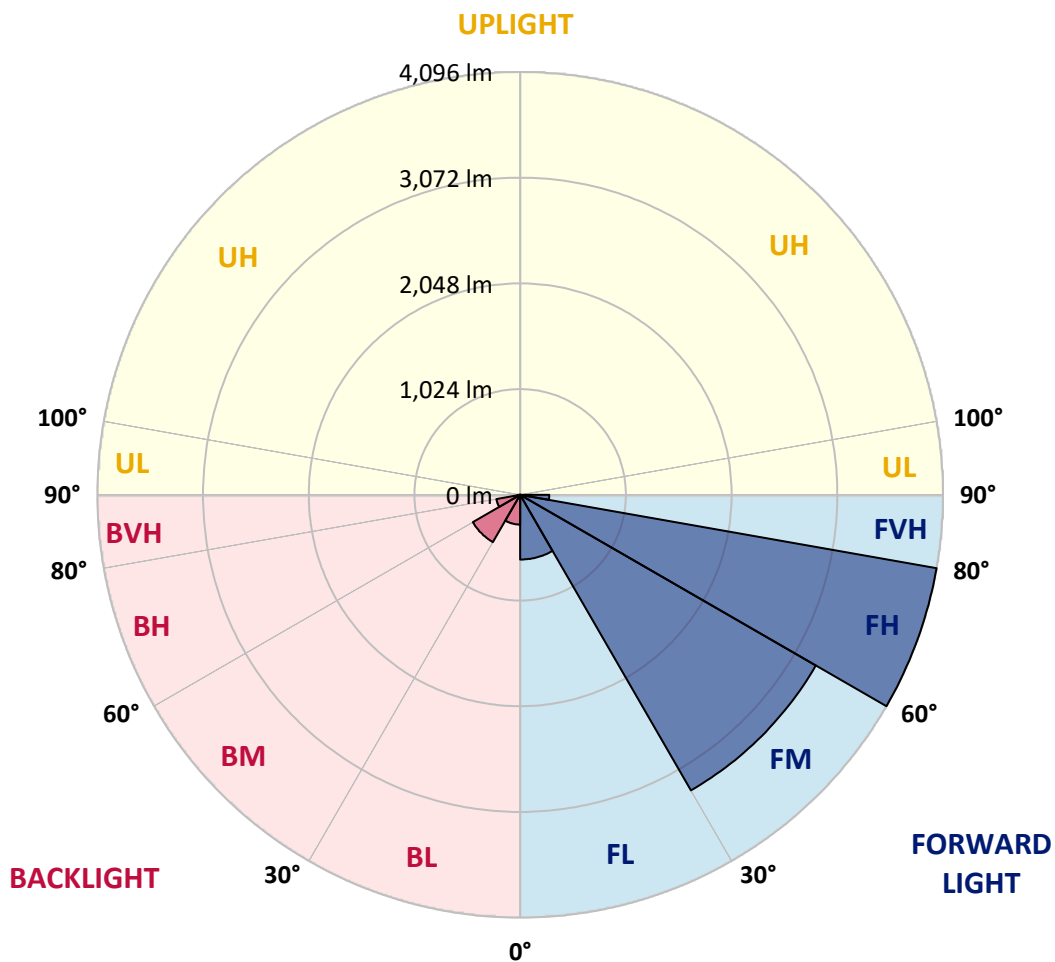
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	627.1	6.7			
FM	(30°-60°)	3306.6	35.2			
FH	(60°-80°)	4096.1	43.6			G2/5000
FVH	(80°-90°)	281.7	3.0			G3/500
BL	(0°-30°)	288.2	3.1	B1/500		
BM	(30°-60°)	529.0	5.6	B1/1000		
BH	(60°-80°)	233.9	2.5	B1/500		G1/500
BVH	(80°-90°)	25.4	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





REPORT NUMBER: P195224

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7060-800

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7
2.5°	1464.6	1465.2	1463.3	1457.7	1452.6	1450.1	1445.7	1438.1	1428.0	1421.1	1415.4
5°	1450.7	1452.6	1451.4	1441.9	1433.1	1428.0	1421.1	1410.4	1397.2	1391.5	1378.3
7.5°	1440.0	1441.3	1437.5	1426.8	1409.8	1403.5	1390.9	1377.0	1365.0	1356.8	1341.1
10°	1432.5	1433.7	1430.6	1419.9	1400.9	1393.4	1378.3	1363.1	1347.4	1337.3	1319.6
12.5°	1421.7	1424.3	1424.3	1419.2	1406.6	1401.6	1386.5	1370.1	1355.6	1344.9	1322.8
15°	1419.9	1423.0	1428.7	1428.0	1424.3	1420.5	1408.5	1392.1	1379.5	1366.9	1339.8
17.5°	1435.6	1442.5	1453.9	1457.7	1455.1	1447.0	1433.1	1418.0	1404.1	1392.1	1358.7
20°	1475.3	1479.1	1496.1	1503.7	1491.1	1479.1	1460.8	1441.3	1428.7	1419.2	1376.4
22.5°	1535.2	1540.2	1554.1	1554.7	1528.2	1513.8	1490.4	1466.5	1454.5	1450.7	1400.3
25°	1631.0	1629.7	1633.5	1617.7	1569.8	1552.8	1524.5	1496.7	1488.5	1496.1	1435.6
27.5°	1745.7	1742.5	1730.5	1689.6	1617.1	1595.0	1561.0	1536.4	1536.4	1554.1	1483.5
30°	1878.0	1874.9	1835.8	1767.1	1673.2	1648.0	1612.1	1586.2	1599.5	1633.5	1548.4
32.5°	2017.9	2006.6	1951.7	1859.7	1753.2	1725.5	1690.8	1664.4	1689.6	1747.6	1641.7
35°	2149.6	2143.3	2075.9	1966.9	1856.6	1833.3	1809.3	1776.5	1816.9	1907.0	1773.4
37.5°	2285.8	2280.7	2198.2	2082.2	1982.6	1966.9	1946.7	1924.0	1988.9	2107.4	1951.7
40°	2437.6	2427.5	2323.6	2207.6	2129.5	2121.9	2111.2	2104.9	2209.5	2386.0	2177.4
42.5°	2609.7	2590.1	2455.9	2345.6	2289.5	2295.8	2290.2	2315.4	2475.4	2707.4	2445.8
45°	2806.3	2767.2	2587.6	2492.5	2466.6	2491.8	2503.8	2568.1	2789.9	3078.6	2745.8
47.5°	2990.3	2939.9	2731.9	2651.9	2666.4	2709.9	2743.9	2857.3	3134.6	3445.3	3052.1
50°	3159.8	3103.1	2886.3	2817.0	2887.6	2949.4	3019.9	3180.0	3501.4	3822.8	3333.2
52.5°	3285.3	3244.3	3040.7	2997.3	3141.6	3223.5	3336.3	3538.6	3872.0	4182.7	3584.0
55°	3382.3	3360.3	3191.4	3204.0	3428.9	3546.2	3682.9	3915.5	4264.0	4505.3	3785.6
57.5°	3494.5	3478.1	3363.4	3453.5	3785.6	3933.1	4094.4	4352.8	4637.0	4789.6	3943.8
60°	3613.0	3613.0	3555.0	3754.1	4231.8	4400.7	4561.4	4762.5	5008.9	5045.4	4008.1
62.5°	3702.5	3725.8	3746.6	4074.3	4655.3	4865.2	5041.6	5234.5	5393.9	5171.5	3856.9
65°	3832.3	3882.1	3999.3	4444.2	5179.7	5454.4	5692.6	5854.6	5705.9	5071.3	3363.4
67.5°	4055.4	4129.1	4378.7	4995.0	5982.5	6394.1	6625.3	6345.5	5644.7	4440.4	2576.3
70°	4256.4	4360.4	4787.0	5693.9	7026.2	7453.4	7346.9	6231.5	4916.2	3255.0	1585.0
72°	4122.8	4236.2	4805.9	5998.3	7583.9	7785.6	7224.0	5522.5	3798.9	1986.4	781.5
72.5°	4035.2	4153.1	4744.8	5990.7	7599.0	7743.3	7053.3	5240.8	3448.5	1738.1	632.1
75°	3371.0	3471.8	4079.9	5309.5	6696.6	6431.9	5504.2	3391.8	1585.0	561.5	325.2
77.5°	2201.3	2278.2	2813.2	3678.5	4690.6	4436.0	3350.2	1588.1	594.3	340.9	244.5
80°	1106.0	1160.8	1505.6	1934.1	2531.5	2329.2	1546.5	768.2	397.7	246.4	192.2
82.5°	769.5	819.9	1036.7	987.5	1058.1	1024.1	727.3	640.9	297.5	155.7	100.8
85°	645.3	697.6	857.7	703.9	576.0	525.0	521.2	605.6	196.6	76.9	85.1
87.5°	562.8	642.2	707.7	514.2	395.1	348.5	383.8	555.2	62.4	42.2	25.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P195224

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7060-800

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7	1433.7
2.5°	1406.0	1404.1	1394.6	1380.1	1369.4	1362.5	1349.3	1348.6	1349.9	1338.6	1343.0
5°	1366.3	1358.7	1334.1	1300.7	1273.6	1247.8	1219.4	1210.0	1201.8	1184.8	1186.7
7.5°	1324.7	1311.5	1268.6	1213.8	1161.5	1113.6	1066.3	1043.0	1025.3	1003.3	1003.3
10°	1300.1	1279.3	1213.8	1133.7	1050.6	980.6	910.0	867.8	836.9	808.6	806.7
12.5°	1298.9	1267.3	1176.0	1065.7	951.6	853.3	756.9	692.0	646.0	612.6	609.4
15°	1308.9	1264.8	1144.5	1002.0	858.3	730.4	611.3	528.7	470.1	433.0	429.2
17.5°	1317.8	1261.7	1110.4	935.2	767.6	611.9	479.6	393.9	338.4	308.2	305.0
20°	1326.0	1254.7	1066.9	864.6	667.4	501.0	375.0	305.6	269.1	252.1	250.2
22.5°	1337.9	1248.4	1021.6	785.2	569.1	407.7	309.4	259.6	240.1	231.9	230.7
25°	1357.5	1249.1	977.4	703.9	479.0	339.7	267.8	237.0	226.2	220.6	220.6
27.5°	1385.8	1256.6	934.0	621.4	402.7	293.0	243.3	225.0	218.1	213.6	212.4
30°	1427.4	1270.5	888.0	543.2	342.2	260.9	228.8	217.4	211.7	208.0	207.3
32.5°	1487.9	1295.1	839.4	472.0	296.2	238.2	218.1	211.1	206.7	203.6	202.9
35°	1578.0	1338.6	792.2	411.5	263.4	221.8	209.2	203.6	201.0	199.8	199.1
37.5°	1710.4	1408.5	747.4	364.3	242.0	211.1	200.4	197.3	196.0	196.0	196.0
40°	1876.8	1500.5	707.1	330.9	230.0	202.9	194.1	191.6	191.6	192.2	192.2
42.5°	2079.0	1615.8	672.4	308.2	223.1	197.3	189.7	188.4	187.8	187.8	188.4
45°	2314.1	1752.0	651.0	290.5	218.1	194.1	186.5	185.9	183.4	182.1	182.1
47.5°	2550.4	1897.5	649.7	280.4	211.7	190.3	183.4	183.4	178.3	175.8	176.5
50°	2771.0	2028.0	663.6	277.9	208.0	184.7	180.2	180.9	173.9	170.8	170.2
52.5°	2948.7	2127.6	680.6	281.1	208.0	179.6	174.6	177.7	170.2	166.4	165.7
55°	3086.1	2196.9	686.9	288.0	210.5	175.2	169.5	174.6	168.9	163.9	163.9
57.5°	3184.4	2219.0	659.8	291.2	214.3	174.6	164.5	173.9	170.8	164.5	164.5
60°	3148.5	2091.0	559.0	279.2	213.6	173.3	160.7	175.2	177.1	170.2	170.2
62.5°	2868.1	1749.4	448.7	252.1	202.9	168.9	156.3	173.9	181.5	179.0	177.7
65°	2334.9	1283.1	347.9	219.9	184.7	159.4	146.8	162.6	171.4	173.9	174.6
67.5°	1645.5	812.3	270.4	187.2	162.0	145.6	136.1	143.7	146.8	148.1	150.6
70°	899.9	439.9	214.9	157.6	138.6	131.7	124.8	125.4	124.2	122.9	124.2
72°	451.9	287.4	181.5	136.8	122.9	118.5	115.3	113.4	113.4	111.5	112.2
72.5°	388.8	267.2	175.2	131.7	119.1	115.3	112.8	110.9	110.3	109.0	109.7
75°	259.0	211.7	146.2	110.3	101.5	98.9	100.2	98.3	98.9	97.7	98.3
77.5°	209.2	182.1	124.2	93.3	87.0	83.2	85.7	86.3	87.6	86.3	85.7
80°	175.2	155.0	104.0	76.9	72.5	69.3	70.6	75.0	75.6	71.8	71.2
82.5°	113.4	124.8	81.9	59.9	55.5	54.2	57.3	61.8	63.0	58.0	56.7
85°	95.2	100.2	59.2	41.0	36.6	35.3	41.6	46.0	49.2	44.1	42.9
87.5°	26.5	49.2	29.0	19.5	16.4	16.4	20.2	23.9	28.4	29.0	29.0
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)