

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: P270389

Luminaire Tested: **NAV-AF-02-D-UNV-T3R-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270389
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
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-T3R-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10763.9 lumens
Efficiency: N/A
Efficacy: 95.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B1 - U0 - G2

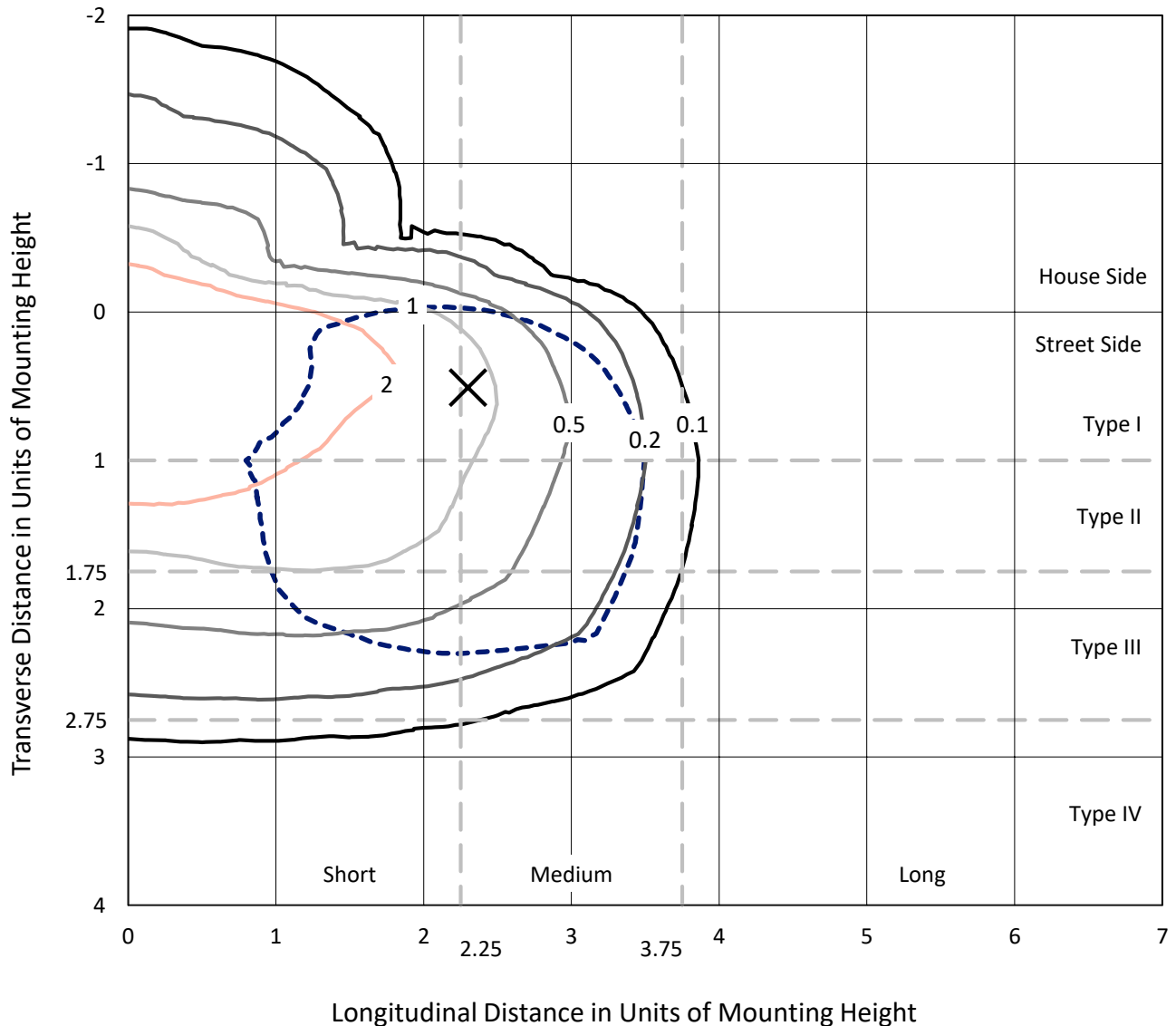
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

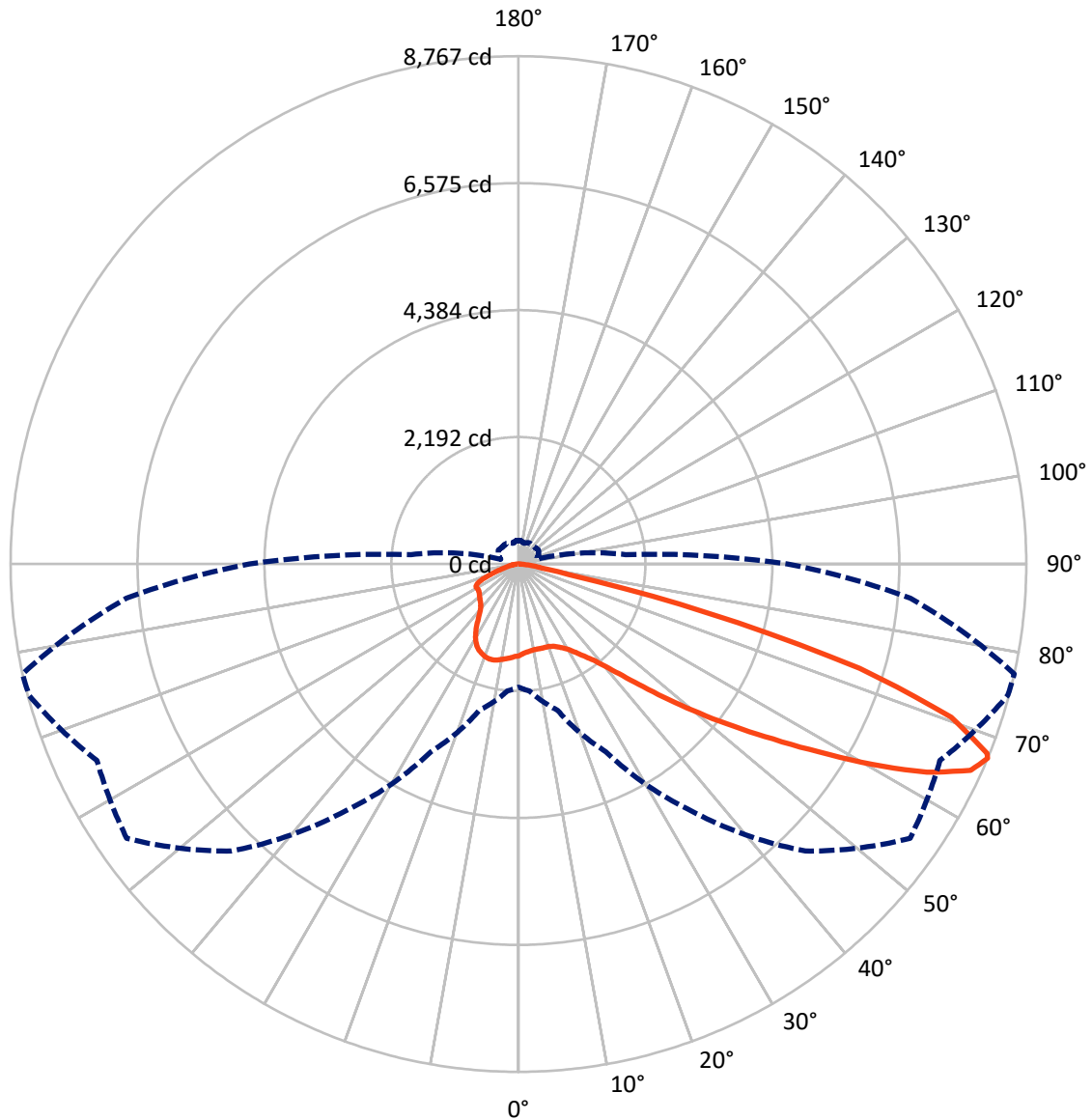
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.8 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1849.8	0.0	1849.8
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	8914.1	0.0	8914.1
	% Fixture	82.8	0.0	82.8
Total	Lumens	10763.9	0.0	10763.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.1	1.3
10°-20°	390.7	3.6
20°-30°	663.9	6.2
30°-40°	1062.1	9.9
40°-50°	1635.1	15.2
50°-60°	2268.5	21.1
60°-70°	3026.1	28.1
70°-80°	1440.1	13.4
80°-90°	136.4	1.3
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°	10763.9	100.0
0°-180°	10763.9	100.0



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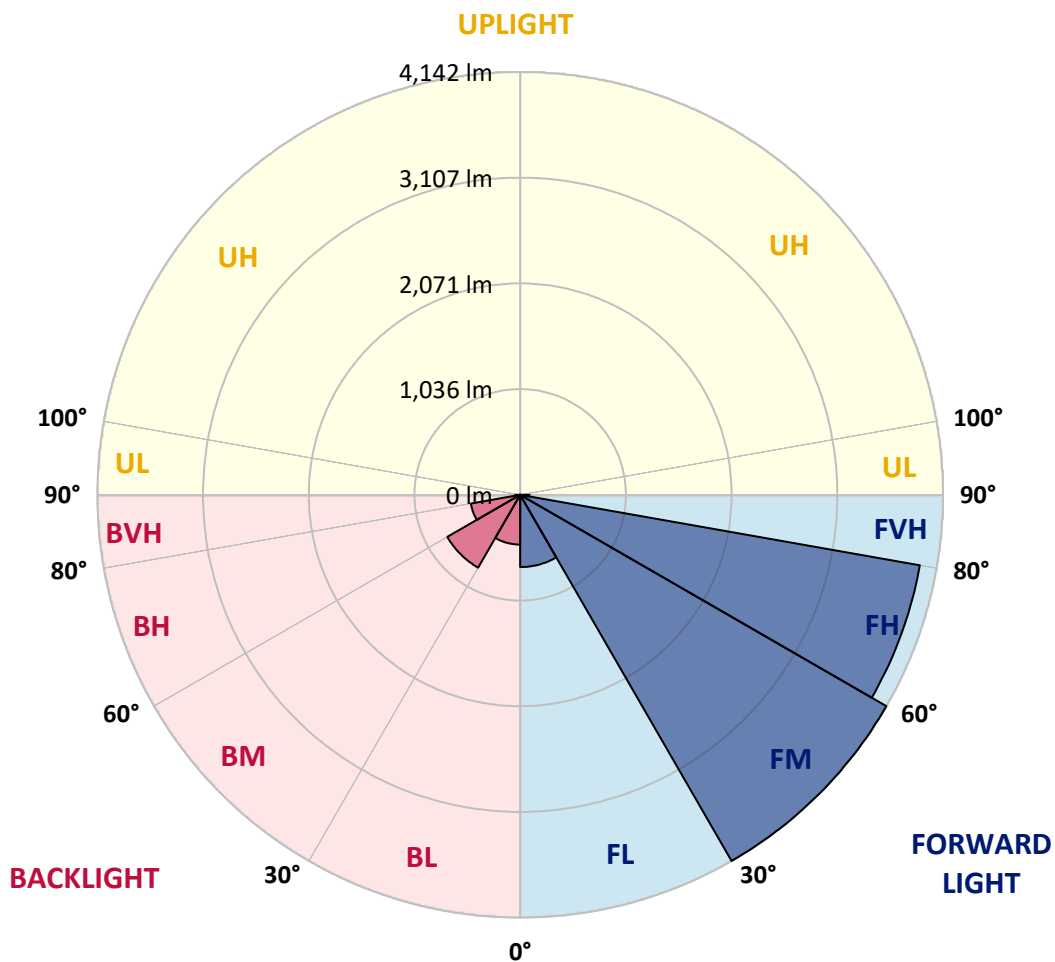
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	707.8	6.6			
FM	(30°-60°)	4142.1	38.5			
FH	(60°-80°)	3975.7	36.9			G2/5000
FVH	(80°-90°)	88.6	0.8			G1/100
BL	(0°-30°)	487.9	4.5	B1/500		
BM	(30°-60°)	823.6	7.7	B1/1000		
BH	(60°-80°)	490.5	4.6	B1/500		G1/500
BVH	(80°-90°)	47.8	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3
2.5°	1420.5	1427.1	1427.9	1447.1	1455.8	1477.7	1501.6	1522.9	1541.6	1548.1	1560.3
5°	1278.1	1278.1	1280.2	1292.8	1317.4	1352.6	1402.6	1457.1	1514.4	1528.2	1563.5
7.5°	1203.5	1204.9	1206.2	1218.9	1238.3	1269.5	1319.4	1393.9	1489.0	1512.2	1574.2
10°	1210.2	1208.2	1201.7	1199.0	1207.0	1226.8	1270.2	1346.6	1467.7	1503.7	1593.5
12.5°	1314.7	1310.6	1288.8	1256.8	1227.5	1220.2	1250.3	1322.7	1457.8	1503.7	1626.1
15°	1493.7	1496.3	1453.1	1386.5	1310.1	1258.2	1254.2	1314.0	1454.4	1507.6	1664.0
17.5°	1726.5	1727.9	1668.1	1571.6	1444.5	1337.3	1281.4	1314.0	1454.4	1511.7	1700.6
20°	1974.0	1964.8	1897.0	1775.8	1610.8	1447.1	1331.4	1322.0	1458.4	1517.6	1735.2
22.5°	2186.3	2177.6	2106.4	1979.3	1790.4	1576.9	1398.5	1348.6	1480.3	1542.2	1783.8
25°	2372.0	2377.3	2308.0	2165.1	1969.4	1723.2	1499.0	1409.8	1526.3	1586.9	1843.6
27.5°	2597.4	2587.5	2507.7	2371.3	2153.6	1874.9	1624.8	1487.1	1580.8	1640.8	1916.9
30°	2858.2	2853.6	2745.8	2605.4	2356.7	2044.6	1749.2	1570.1	1652.1	1714.5	2008.6
32.5°	3175.0	3174.3	3058.5	2886.3	2584.9	2236.2	1896.2	1684.0	1755.7	1819.0	2130.4
35°	3533.7	3532.9	3413.2	3185.6	2847.6	2448.4	2069.2	1822.3	1884.3	1950.8	2275.4
37.5°	3782.5	3778.5	3715.8	3495.0	3138.4	2695.3	2285.4	2008.6	2029.9	2104.5	2450.4
40°	3830.4	3854.3	3908.2	3777.8	3455.8	2969.3	2502.3	2208.9	2228.9	2324.6	2670.7
42.5°	3778.5	3809.7	3988.7	4025.2	3773.2	3301.5	2773.7	2486.4	2511.7	2630.7	2929.5
45°	3733.1	3760.5	3984.7	4162.3	4086.5	3663.4	3112.4	2825.0	2872.9	3020.6	3224.8
47.5°	3656.0	3681.3	3906.2	4187.0	4265.4	4012.0	3520.3	3232.2	3314.7	3493.7	3561.5
50°	3652.0	3663.4	3799.0	4104.4	4327.3	4276.8	3972.0	3708.7	3835.0	4041.3	3934.1
52.5°	3550.9	3630.1	3753.2	3972.8	4328.7	4431.1	4417.1	4230.8	4425.8	4653.9	4342.6
55°	2932.2	3023.2	3600.1	3908.2	4320.7	4563.5	4823.7	4786.3	5091.1	5331.4	4800.5
57.5°	2737.9	2776.4	3158.4	3927.5	4387.2	4782.4	5230.2	5383.3	5852.3	6114.5	5349.2
60°	2684.7	2725.2	3069.9	3936.8	4567.5	5181.0	5781.9	6057.2	6747.2	7025.3	5972.7
62.5°	2625.4	2677.9	3076.5	3945.4	4884.3	5770.4	6513.6	6788.4	7666.0	7914.2	6556.9
65°	2452.5	2522.4	2953.4	3890.9	5230.9	6510.2	7481.1	7551.0	8425.2	8582.9	6909.6
67°	2124.4	2200.9	2615.4	3575.6	5198.9	7008.7	8254.9	8028.0	8747.9	8767.1	6795.0
67.5°	2020.6	2099.8	2501.1	3444.5	5107.9	7073.9	8391.8	8093.8	8745.2	8723.9	6688.6
70°	1360.7	1449.8	1771.1	2529.0	4097.1	6583.5	8358.5	7890.9	8171.6	7927.5	5746.5
72.5°	675.3	678.0	883.6	1385.2	2482.3	4721.9	6972.7	6750.6	6624.1	6163.0	4217.0
75°	325.4	331.4	417.2	612.1	1046.5	2437.8	4755.2	4554.9	3878.3	3358.0	2110.5
77.5°	248.2	254.2	324.0	398.6	436.4	795.1	2355.3	1903.5	1123.8	897.5	594.8
80°	191.6	202.9	273.4	306.1	288.7	318.7	740.6	582.8	437.1	401.3	294.7
82.5°	149.7	156.3	232.2	232.2	199.7	213.5	344.6	336.7	271.5	244.9	158.3
85°	105.8	119.0	186.9	173.1	131.1	132.4	206.3	197.5	139.7	112.5	61.9
87.5°	47.3	60.5	133.0	113.0	69.9	53.9	84.5	72.6	55.2	42.6	28.6
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°	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3	1584.3
2.5°	1573.6	1584.3	1600.8	1610.8	1624.0	1629.4	1634.7	1644.1	1651.4	1649.4	1646.1
5°	1588.2	1606.1	1626.7	1633.4	1633.4	1626.7	1622.8	1623.3	1621.4	1620.2	1616.1
7.5°	1609.5	1634.0	1648.7	1642.0	1621.4	1595.5	1570.9	1556.3	1542.2	1533.5	1536.2
10°	1639.3	1666.6	1667.3	1638.1	1588.8	1532.2	1483.7	1452.4	1422.5	1409.3	1413.2
12.5°	1682.6	1710.0	1686.6	1623.3	1536.9	1448.4	1359.2	1294.7	1236.8	1223.0	1218.9
15°	1729.1	1750.4	1698.7	1592.2	1462.4	1316.6	1167.0	1070.5	1006.0	994.7	990.7
17.5°	1769.8	1781.8	1692.6	1536.2	1344.7	1115.1	940.7	875.6	862.3	868.9	868.9
20°	1805.8	1801.7	1666.6	1449.8	1159.1	891.6	790.4	789.8	807.8	824.4	825.7
22.5°	1851.0	1819.6	1625.5	1321.3	937.4	743.8	726.5	743.8	763.7	782.5	784.4
25°	1904.9	1839.6	1570.1	1138.4	753.8	675.3	682.6	697.3	709.9	724.6	725.2
27.5°	1958.8	1855.0	1492.4	923.5	654.1	631.4	639.5	645.4	648.7	658.0	658.0
30°	2021.2	1866.9	1379.8	739.8	608.2	592.8	588.2	585.4	588.2	600.7	601.4
32.5°	2099.8	1888.1	1226.1	634.7	586.9	565.6	541.6	528.3	537.5	560.3	564.2
35°	2189.0	1913.5	1041.9	592.8	579.4	552.2	508.4	487.7	491.1	511.7	515.0
37.5°	2300.6	1946.1	860.2	582.8	586.9	550.9	493.0	463.7	449.2	449.8	449.2
40°	2443.7	1978.6	716.6	585.4	602.9	554.3	485.8	439.8	409.2	410.5	413.2
42.5°	2593.4	1999.9	625.4	593.5	622.0	558.8	483.0	416.5	389.9	412.5	433.2
45°	2768.4	1994.0	578.1	600.7	636.7	560.9	473.0	413.8	391.9	459.8	498.3
47.5°	2969.3	1968.0	551.6	604.1	640.8	560.3	465.7	422.6	408.5	526.2	570.2
50°	3187.6	1927.5	530.3	598.8	638.8	557.6	473.8	433.2	415.1	540.9	574.8
52.5°	3426.4	1890.3	508.4	586.9	628.8	549.6	483.6	428.5	396.5	498.3	524.3
55°	3709.2	1881.6	483.6	566.2	612.1	540.9	478.3	413.8	375.9	441.7	457.7
57.5°	4032.6	1935.5	451.8	540.9	589.5	523.6	465.7	405.9	368.7	401.8	410.5
60°	4443.0	2054.6	417.8	514.3	561.5	497.8	454.5	407.8	370.6	395.9	397.9
62.5°	4763.8	2161.7	387.2	481.8	524.3	466.4	442.4	409.8	376.6	403.9	400.6
65°	4880.2	2109.1	349.4	433.2	471.7	431.8	425.7	411.2	376.6	408.5	401.3
67°	4641.5	1858.2	313.4	384.6	421.8	401.3	409.8	405.9	369.9	407.8	395.3
67.5°	4527.5	1769.8	304.0	376.6	408.5	391.9	405.9	403.2	367.9	406.6	391.9
70°	3733.8	1269.5	256.8	316.1	342.0	345.3	381.2	385.9	352.0	381.9	355.3
72.5°	2656.6	794.5	221.5	244.9	276.0	295.5	348.0	362.6	330.7	332.1	310.1
75°	1314.7	426.4	197.5	189.0	215.0	246.1	303.4	330.7	299.4	276.8	269.4
77.5°	443.9	241.6	167.1	152.4	167.1	197.5	251.4	288.7	264.1	234.2	229.5
80°	229.5	175.7	130.4	122.3	131.7	153.0	197.0	240.1	225.6	226.9	186.9
82.5°	143.0	107.1	93.9	93.2	99.8	117.0	145.0	194.9	193.7	165.6	120.5
85°	66.6	61.9	59.8	61.9	63.9	66.6	94.5	139.1	147.1	89.1	79.2
87.5°	27.9	27.3	24.0	26.0	28.6	27.9	37.9	59.2	82.6	55.9	51.3
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)