

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: P196130

Luminaire Tested: **NAV-AF-02-D-UNV-SL3-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196130
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24262)
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-SL3-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8199 lumens
Efficiency: N/A
Efficacy: 124.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B1 - U0 - G2

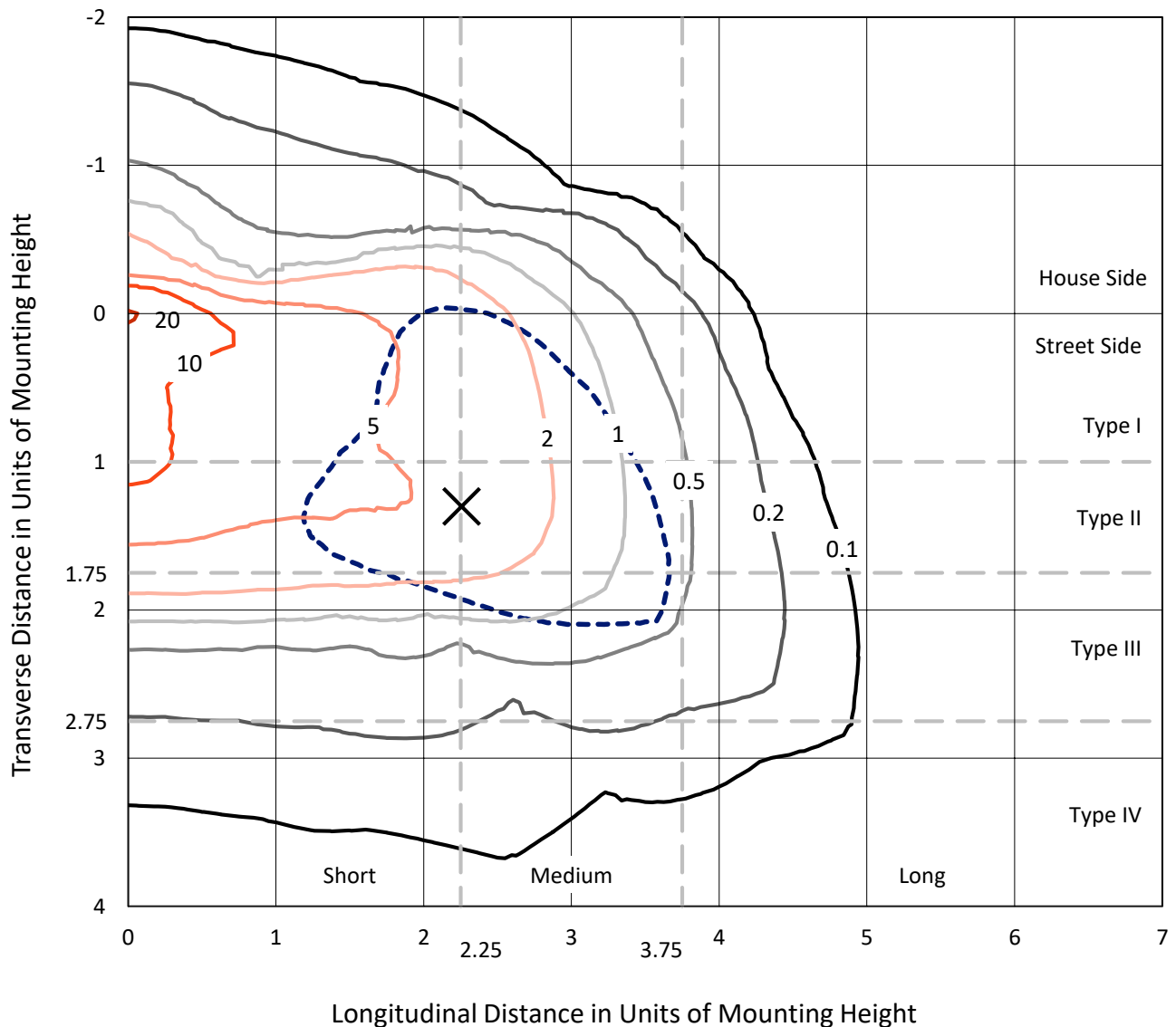
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196130
 CATALOG NUMBER: NAV-AF-02-D-UNV-SL3-600

Iso-Footcandle Lines of Horizontal Illumination

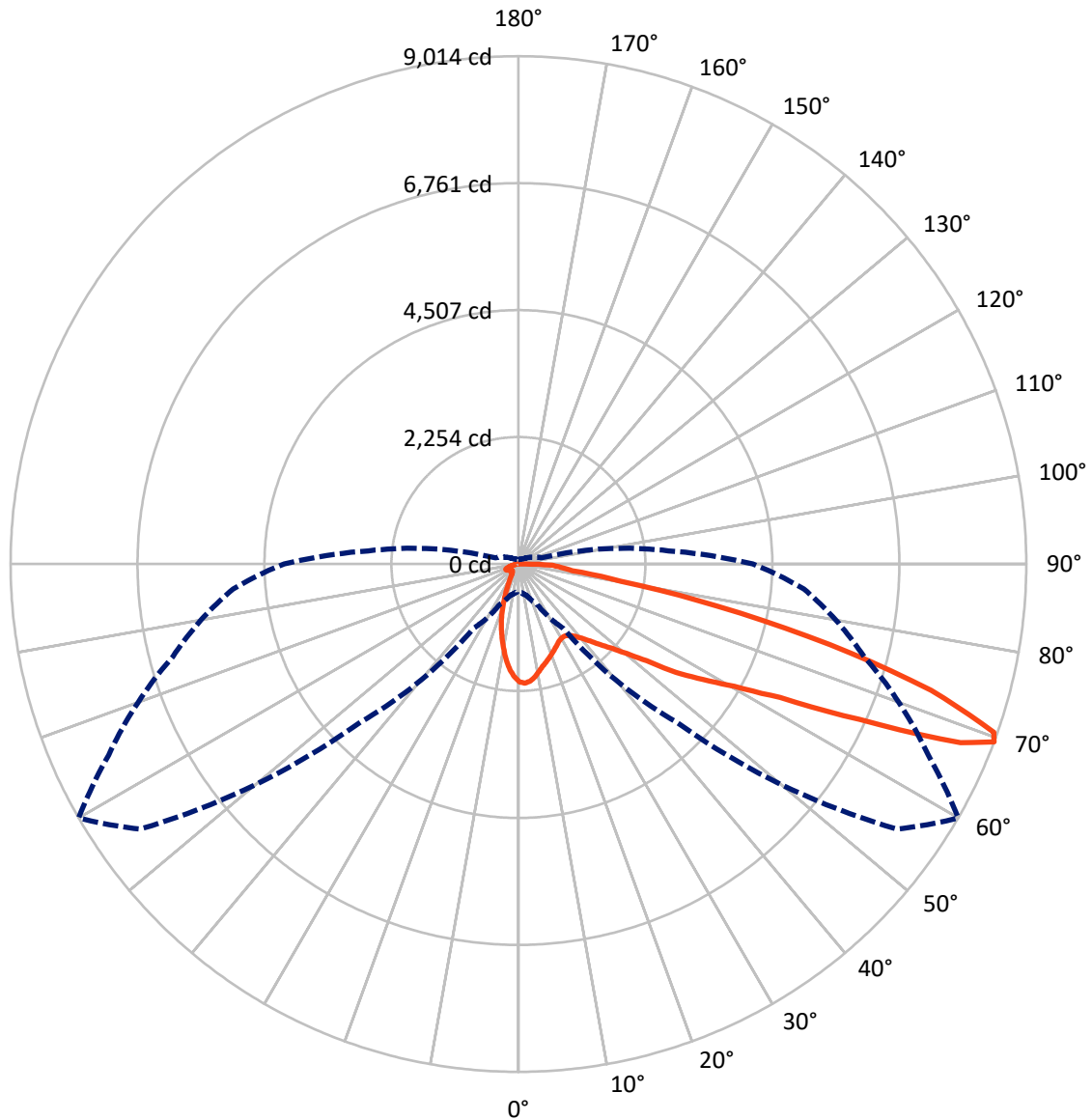
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 20.9 fc
 Type III - Medium - Non-Cutoff

REPORT NUMBER: P196130
CATALOG NUMBER: NAV-AF-02-D-UNV-SL3-600

Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

REPORT NUMBER: P196130

CATALOG NUMBER: NAV-AF-02-D-UNV-SL3-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1169.4	0.0	1169.4
	% Fixture	14.3	0.0	14.3
Street Side	Lumens	7029.5	0.0	7029.5
	% Fixture	85.7	0.0	85.7
Total	Lumens	8199.0	0.0	8199.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.5	2.2
10°-20°	380.0	4.6
20°-30°	484.7	5.9
30°-40°	667.1	8.1
40°-50°	1080.5	13.2
50°-60°	1695.8	20.7
60°-70°	2260.8	27.6
70°-80°	1257.5	15.3
80°-90°	195.0	2.4
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°	8199.0	100.0
0°-180°	8199.0	100.0

Coefficient of Utilization



REPORT NUMBER: P196130

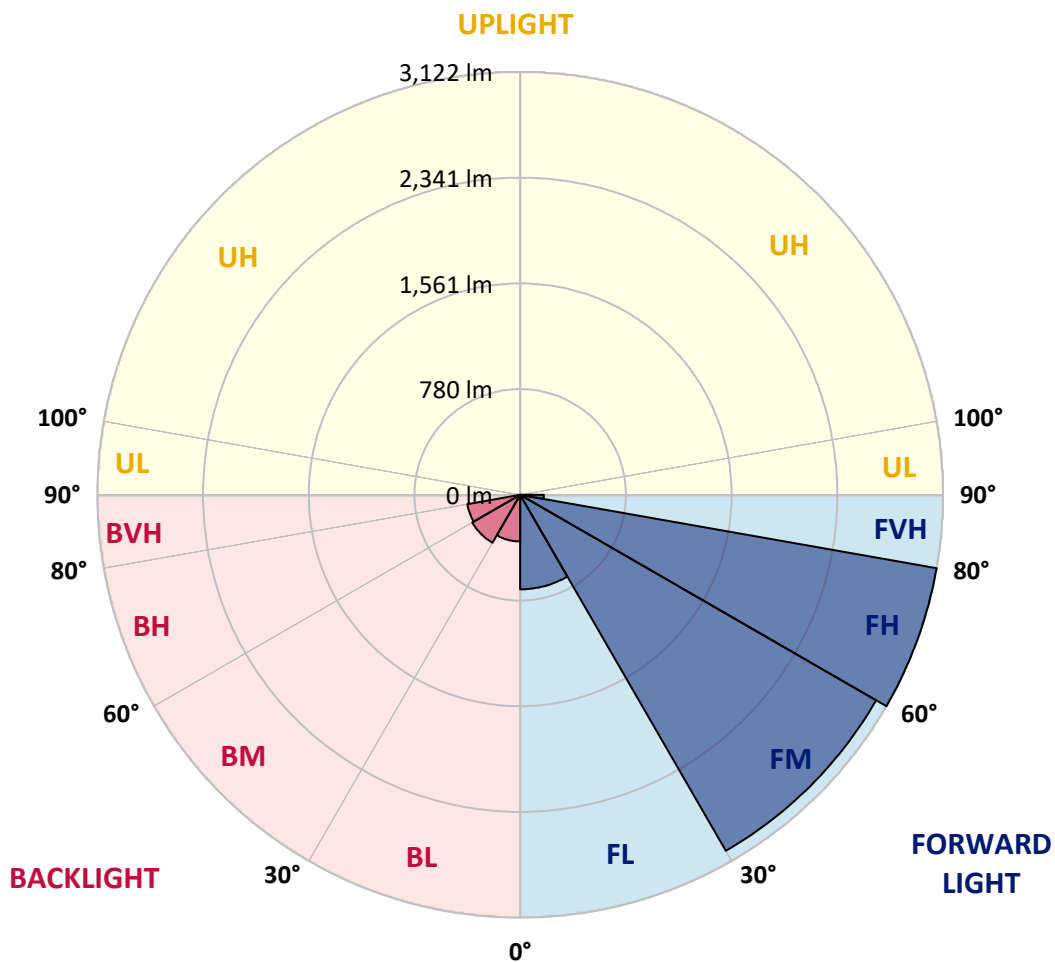
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	697.6	8.5			
FM	(30°-60°)	3034.8	37.0			
FH	(60°-80°)	3121.8	38.1			G2/5000
FVH	(80°-90°)	175.3	2.1			G2/225
BL	(0°-30°)	344.6	4.2	B1/500		
BM	(30°-60°)	408.5	5.0	B1/1000		
BH	(60°-80°)	396.5	4.8	B1/500		G1/500
BVH	(80°-90°)	19.8	0.2			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





REPORT NUMBER: P196130

CATALOG NUMBER: NAV-AF-02-D-UNV-SL3-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	65°	75°	85°
0°	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0
2.5°	2147.7	2153.5	2153.5	2148.8	2146.2	2130.9	2121.9	2115.7	2104.6	2084.1	2065.7
5°	2071.0	2082.0	2086.7	2088.9	2102.5	2097.8	2098.3	2094.1	2084.7	2062.6	2032.6
7.5°	1930.1	1932.1	1940.5	1954.8	1987.9	2011.0	2029.9	2033.6	2031.5	2015.2	1973.2
10°	1791.3	1795.0	1804.9	1829.1	1860.6	1893.8	1934.8	1951.6	1964.3	1959.0	1905.9
12.5°	1676.1	1676.6	1687.7	1715.6	1750.8	1792.3	1848.1	1874.4	1904.3	1916.4	1857.0
15°	1565.2	1572.6	1583.0	1616.7	1660.4	1712.9	1777.1	1813.4	1852.8	1887.4	1819.1
17.5°	1481.0	1486.9	1493.2	1521.0	1571.5	1637.2	1716.6	1755.5	1807.6	1860.6	1780.2
20°	1434.8	1436.9	1432.1	1445.8	1488.4	1559.4	1651.5	1698.2	1760.2	1834.9	1740.2
22.5°	1425.3	1425.3	1408.0	1405.3	1424.3	1484.2	1584.1	1641.4	1717.1	1817.1	1704.5
25°	1469.5	1466.3	1433.8	1403.8	1396.9	1427.4	1520.0	1590.4	1680.3	1816.5	1677.7
27.5°	1553.0	1548.8	1508.4	1457.9	1414.3	1401.1	1470.6	1542.6	1651.5	1834.4	1664.0
30°	1657.2	1655.6	1614.6	1551.5	1479.5	1411.7	1451.1	1517.9	1631.9	1867.5	1663.5
32.5°	1771.2	1763.9	1738.7	1675.6	1582.0	1470.0	1462.6	1518.9	1626.7	1915.9	1675.6
35°	1892.8	1887.4	1881.2	1817.6	1712.4	1573.1	1513.7	1555.2	1652.5	1983.2	1709.8
37.5°	2047.3	2041.5	2052.0	1982.6	1867.5	1708.2	1599.9	1627.7	1705.1	2081.0	1773.4
40°	2322.3	2305.4	2276.0	2169.3	2048.4	1873.8	1724.5	1728.7	1795.0	2211.8	1875.4
42.5°	2773.9	2719.7	2574.2	2378.0	2239.2	2066.3	1886.9	1867.0	1919.1	2384.8	2023.6
45°	3226.6	3165.6	2919.5	2605.7	2436.9	2272.9	2087.7	2040.0	2073.6	2586.2	2214.5
47.5°	3518.8	3488.9	3211.3	2833.3	2644.0	2497.8	2317.5	2238.6	2262.9	2814.3	2450.1
50°	3604.6	3578.8	3360.6	3011.6	2839.6	2769.6	2602.0	2497.3	2501.5	3080.9	2732.4
52.5°	3540.4	3529.9	3385.4	3121.9	3019.4	3056.3	2995.8	2850.1	2815.5	3373.3	3038.4
55°	3454.7	3458.4	3402.7	3232.8	3202.3	3323.4	3511.0	3393.7	3246.5	3677.7	3356.9
57.5°	3185.1	3187.6	3333.8	3444.3	3551.5	3697.7	3912.2	3862.8	3691.3	4006.3	3713.9
60°	2564.6	2585.1	2910.6	3400.6	3950.5	4435.3	4487.9	4402.7	4164.5	4384.8	4178.2
62.5°	1832.3	1850.6	2227.7	2952.1	3903.8	5270.1	5550.9	5212.3	4806.4	4951.1	4831.2
65°	962.7	959.5	1251.3	2040.0	3288.1	5463.7	7226.0	6649.8	5888.0	5729.8	5462.0
67.5°	537.9	555.2	668.2	1028.9	2143.0	4808.6	8295.9	8465.7	7391.6	6347.5	5434.7
69°	497.4	503.2	578.9	795.4	1396.9	3967.4	8204.0	9014.1	8025.7	6350.1	5084.6
70°	483.1	489.5	558.3	732.9	1173.5	3250.7	7869.0	8950.0	8179.7	6209.2	4766.0
72.5°	433.2	441.6	508.4	658.8	989.0	1675.6	6338.5	7660.3	7409.5	5426.9	3695.5
75°	369.6	383.8	484.8	654.1	936.9	1065.2	4227.1	5707.1	5514.6	3881.2	2096.7
77.5°	153.0	154.6	211.9	478.9	983.2	1019.5	2271.8	3615.1	3200.3	1701.9	631.5
80°	106.7	104.6	105.7	139.8	793.4	1026.3	1165.7	1838.5	1429.0	449.0	295.4
82.5°	89.9	88.9	93.1	87.8	268.6	1164.5	974.8	958.5	673.0	241.8	140.9
85°	59.4	57.8	76.2	79.9	127.8	924.8	1048.3	753.4	501.6	129.3	59.9
87.5°	28.9	29.5	43.7	54.1	67.8	292.9	1004.2	595.7	387.5	56.3	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



REPORT NUMBER: P196130

CATALOG NUMBER: NAV-AF-02-D-UNV-SL3-600

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0	2092.0
2.5°	2058.4	2042.5	2028.4	2010.5	1996.8	1985.2	1969.5	1969.0	1966.3	1970.0	1971.0
5°	2012.6	1986.3	1946.4	1901.7	1870.2	1828.6	1788.1	1774.4	1759.2	1757.6	1762.3
7.5°	1943.7	1902.7	1834.4	1766.0	1697.7	1627.7	1561.5	1527.9	1495.2	1485.2	1490.0
10°	1867.0	1814.9	1710.3	1598.9	1502.6	1398.5	1297.6	1232.3	1172.9	1147.8	1154.0
12.5°	1807.0	1740.8	1593.6	1449.0	1305.0	1155.6	1022.6	893.8	796.6	752.9	755.6
15°	1755.5	1670.9	1484.2	1291.8	1111.4	906.9	722.4	573.1	487.9	456.3	455.3
17.5°	1699.7	1597.2	1370.1	1145.6	911.7	658.8	483.7	395.4	361.7	351.2	351.2
20°	1640.4	1521.5	1250.8	986.3	701.3	460.0	363.9	329.7	317.0	313.8	313.3
22.5°	1585.2	1447.4	1130.9	816.5	507.4	349.1	309.6	296.6	294.4	297.1	297.1
25°	1541.5	1382.2	1009.4	637.7	369.1	292.4	275.5	273.9	281.8	291.2	292.9
27.5°	1509.0	1323.9	889.6	465.9	290.2	254.5	248.7	255.5	273.9	292.9	296.6
30°	1486.3	1273.9	746.0	334.9	241.8	222.9	225.6	237.6	265.6	294.4	302.3
32.5°	1476.3	1233.5	601.5	257.1	206.6	196.1	203.0	218.7	247.7	276.5	286.0
35°	1485.8	1204.0	467.9	213.5	180.9	173.0	180.9	197.1	216.0	230.3	236.1
37.5°	1520.0	1193.5	352.3	189.2	164.1	156.1	162.4	173.5	181.9	187.2	189.8
40°	1592.0	1204.5	276.0	176.7	154.6	145.7	147.2	152.4	158.3	162.4	163.0
42.5°	1706.6	1240.7	245.5	172.0	148.8	137.2	134.6	138.3	144.5	150.4	151.4
45°	1859.1	1301.3	242.3	173.5	146.2	130.4	125.1	128.8	137.2	146.7	148.2
47.5°	2056.2	1396.9	257.1	181.9	147.7	126.7	118.9	122.5	133.5	146.2	148.2
50°	2289.7	1529.4	284.5	194.6	155.1	126.7	116.2	119.4	130.9	145.2	147.2
52.5°	2564.6	1714.0	312.8	207.1	165.6	131.4	117.2	116.7	127.3	140.3	143.0
55°	2868.0	1943.2	340.1	218.2	171.4	137.8	119.9	113.5	121.9	132.5	134.6
57.5°	3225.0	2257.0	388.0	228.7	174.5	142.5	123.1	110.4	115.2	122.5	124.1
60°	3709.2	2718.2	481.1	246.5	180.3	144.5	123.6	107.2	106.7	112.0	112.5
62.5°	4340.7	3258.1	569.9	267.6	191.9	145.2	121.4	105.2	99.9	101.5	101.5
65°	4789.7	3456.9	544.2	285.5	202.4	144.5	119.4	103.6	94.6	92.0	92.0
67.5°	4534.1	3053.6	462.2	290.2	203.5	138.8	114.6	99.9	89.9	83.6	83.6
69°	4158.7	2676.7	424.3	281.8	195.1	132.0	109.4	96.3	86.7	79.4	79.4
70°	3852.7	2391.1	401.2	271.8	185.1	126.2	104.6	92.6	83.6	77.3	76.7
72.5°	2876.4	1595.7	342.8	234.5	151.9	106.7	91.5	82.6	75.2	71.0	71.0
75°	1517.9	799.6	280.8	191.4	117.2	85.2	75.2	69.4	65.2	64.7	64.1
77.5°	497.4	361.7	201.9	144.0	86.2	66.3	59.9	56.3	55.8	57.8	57.8
80°	268.6	216.0	129.8	97.3	59.9	49.4	46.2	45.7	47.4	50.4	50.4
82.5°	130.4	106.7	77.3	59.9	41.0	36.3	36.3	36.8	38.9	42.6	42.6
85°	56.3	50.4	44.7	33.7	25.3	22.6	25.8	28.4	30.0	32.6	33.7
87.5°	26.8	23.6	20.5	13.1	11.0	11.6	13.7	16.8	19.9	22.1	22.6
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)