

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: P196036

Luminaire Tested: **NAV-AF-04-D-UNV-RW-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196036
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24161)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-RW-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16803 lumens
Efficiency: N/A
Efficacy: 130.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B4 - U0 - G4

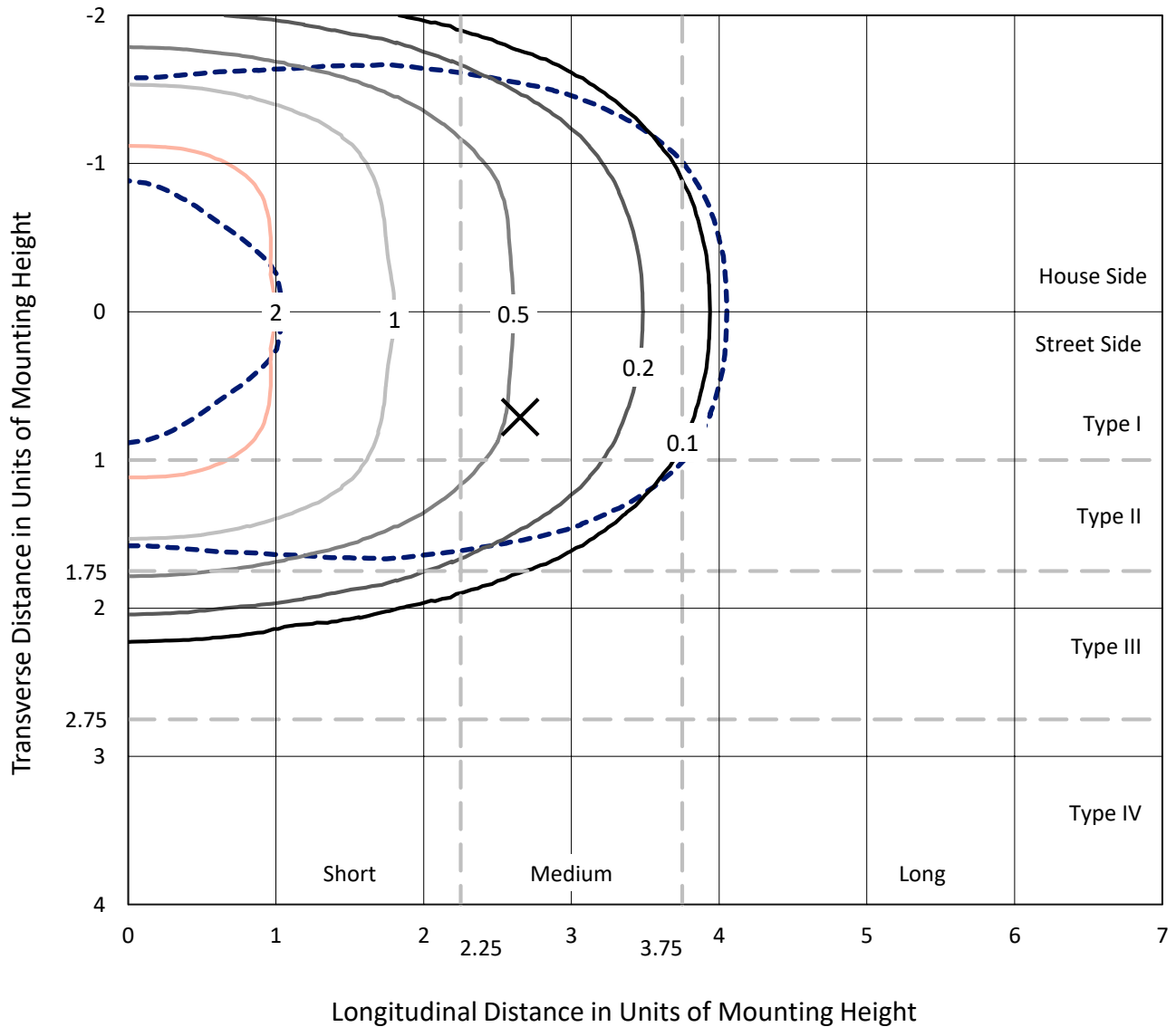
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

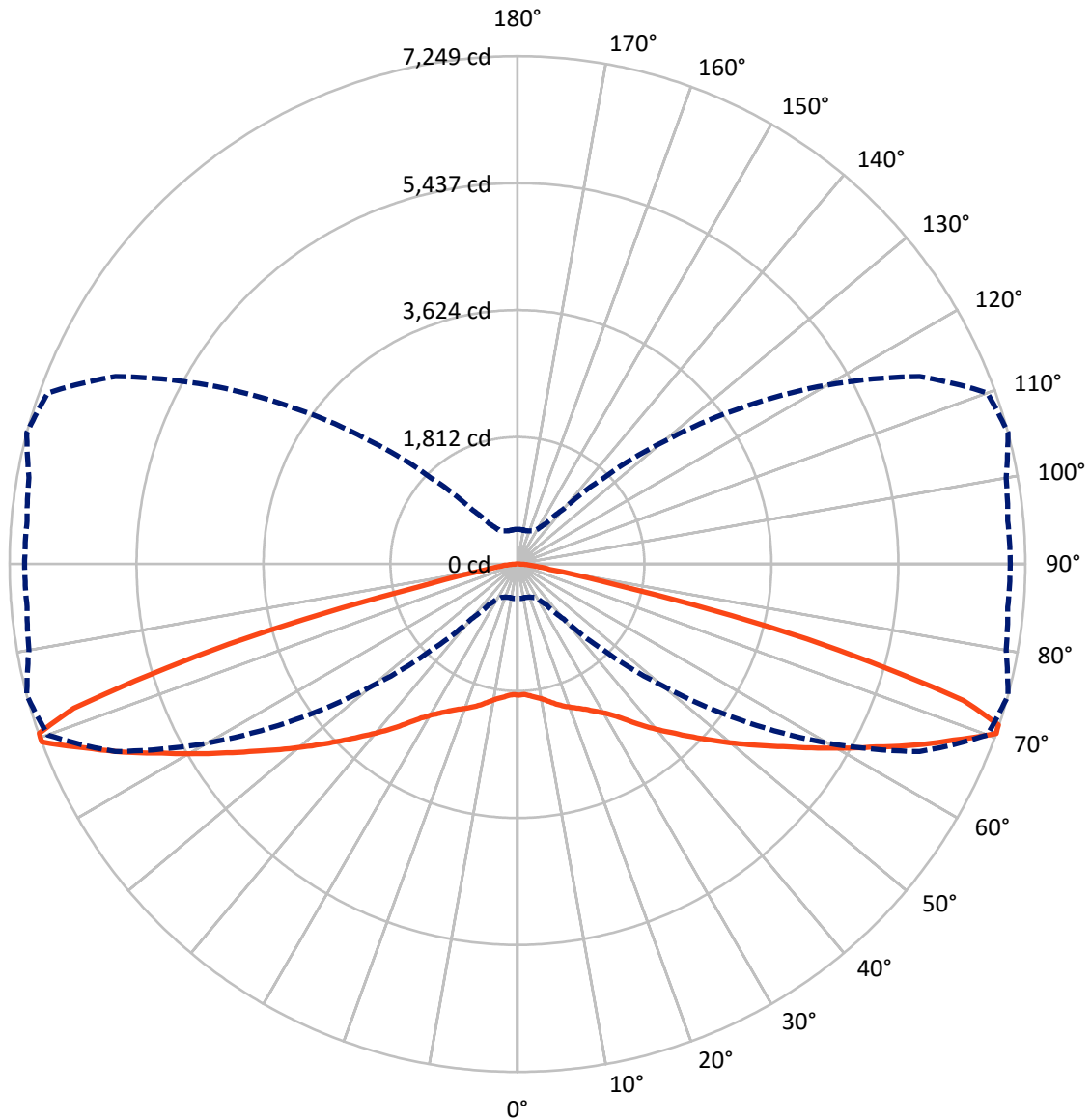
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3 fc
 Type II - Medium - Full Cutoff

REPORT NUMBER: P196036
CATALOG NUMBER: NAV-AF-04-D-UNV-RW-600

Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	8401.5	0.0	8401.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	8401.5	0.0	8401.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	16803.0	0.0	16803.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.5	1.1
10°-20°	556.6	3.3
20°-30°	1045.4	6.2
30°-40°	1841.6	11.0
40°-50°	3052.1	18.2
50°-60°	4245.9	25.3
60°-70°	4008.2	23.9
70°-80°	1711.9	10.2
80°-90°	161.8	1.0
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°	16803.0	100.0
0°-180°	16803.0	100.0



REPORT NUMBER: P196036

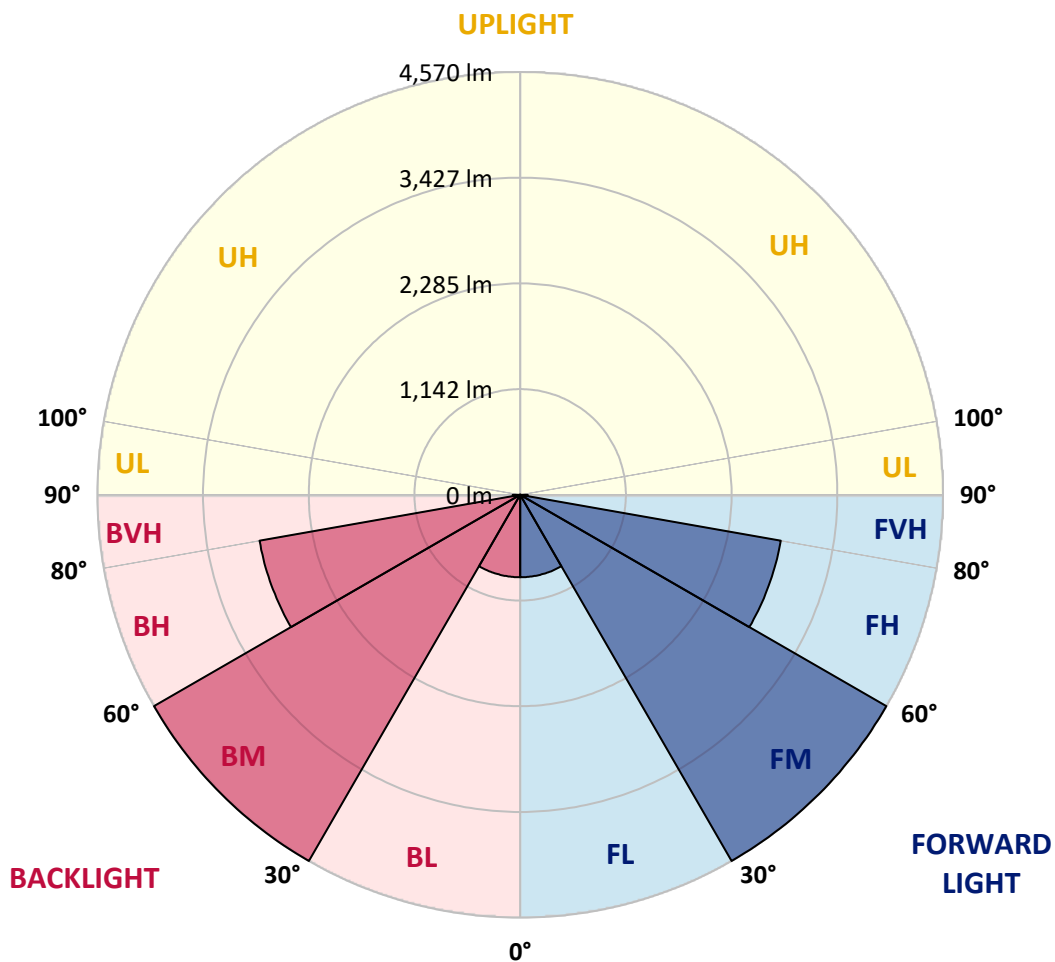
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	890.8	5.3			
FM	(30°-60°)	4569.8	27.2			
FH	(60°-80°)	2860.1	17.0			G2/5000
FVH	(80°-90°)	80.9	0.5			G1/100
BL	(0°-30°)	890.8	5.3	B2/1000		
BM	(30°-60°)	4569.8	27.2	B3/5000		
BH	(60°-80°)	2860.1	17.0	B4/5000		G4/5000
BVH	(80°-90°)	80.9	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G4

Type II Medium





REPORT NUMBER: P196036

CATALOG NUMBER: NAV-AF-04-D-UNV-RW-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2
2.5°	1882.7	1881.7	1882.7	1879.6	1880.7	1879.6	1879.6	1875.4	1875.4	1873.3	1870.2
5°	1861.7	1863.8	1863.8	1863.8	1867.0	1867.0	1871.2	1872.2	1875.4	1878.5	1880.7
7.5°	1827.0	1828.0	1831.2	1833.2	1839.6	1848.0	1856.5	1865.9	1874.4	1884.9	1896.4
10°	1797.4	1799.6	1804.8	1810.1	1821.7	1832.2	1846.9	1861.7	1876.4	1894.3	1912.2
12.5°	1781.7	1784.8	1793.2	1801.7	1819.6	1833.2	1853.3	1876.4	1896.4	1913.3	1933.3
15°	1783.8	1784.8	1796.4	1808.0	1833.2	1852.3	1880.7	1908.0	1932.3	1951.2	1974.4
17.5°	1814.3	1816.5	1828.0	1844.9	1869.0	1893.3	1923.9	1952.3	1984.9	2007.0	2034.3
20°	1874.4	1877.5	1890.1	1908.0	1934.4	1959.7	1991.2	2020.7	2054.4	2080.7	2108.1
22.5°	1952.3	1957.5	1971.2	1993.3	2019.6	2050.2	2082.8	2113.4	2144.9	2171.3	2194.4
25°	2056.5	2062.8	2077.6	2099.7	2126.0	2158.6	2192.4	2223.9	2256.5	2276.6	2295.5
27.5°	2196.6	2207.1	2222.9	2240.8	2264.0	2298.7	2330.3	2356.6	2388.2	2410.3	2423.0
30°	2385.0	2399.7	2412.4	2431.3	2448.2	2485.1	2510.3	2531.4	2555.6	2568.2	2571.4
32.5°	2615.7	2629.3	2642.0	2655.7	2678.8	2712.6	2736.7	2748.4	2760.9	2758.9	2747.2
35°	2875.7	2886.3	2893.6	2917.9	2955.7	2977.9	2995.8	3000.0	3002.1	2980.0	2957.9
37.5°	3149.6	3162.1	3168.5	3206.3	3242.1	3267.4	3275.9	3285.3	3279.1	3242.1	3202.1
40°	3445.4	3459.1	3478.0	3510.7	3552.8	3577.1	3587.6	3586.5	3581.2	3538.1	3472.8
42.5°	3736.0	3752.9	3768.7	3825.5	3860.3	3901.3	3906.6	3905.5	3894.0	3844.5	3768.7
45°	3982.4	4002.4	4035.1	4098.2	4154.1	4203.6	4223.6	4230.9	4219.4	4166.7	4080.3
47.5°	4185.7	4199.3	4240.4	4317.3	4388.9	4461.6	4501.6	4530.0	4528.9	4491.1	4399.4
50°	4324.6	4340.5	4391.0	4477.4	4566.9	4652.2	4731.1	4795.4	4825.9	4798.6	4713.2
52.5°	4364.6	4384.7	4451.1	4554.2	4658.4	4773.2	4891.1	5004.9	5073.3	5090.2	5023.8
55°	4196.2	4218.3	4315.2	4458.4	4630.1	4799.6	4978.6	5140.7	5281.8	5347.2	5320.8
57.5°	3705.5	3721.3	3844.5	4029.8	4275.2	4573.2	4874.4	5171.2	5413.5	5583.0	5612.5
60°	2930.4	2950.5	3085.3	3281.1	3560.2	3937.1	4358.4	4844.8	5319.8	5708.3	5901.0
62.5°	1977.6	1991.2	2120.8	2299.8	2605.1	2968.4	3438.0	4054.1	4731.1	5425.0	5968.4
65°	1038.3	1038.3	1125.7	1251.0	1494.2	1819.6	2300.8	2932.6	3738.2	4604.7	5513.5
67.5°	602.3	601.3	621.2	649.7	726.6	858.2	1123.5	1587.9	2350.3	3359.1	4393.1
70°	497.1	493.9	490.7	490.7	502.3	522.3	572.9	700.2	1024.6	1732.2	2703.0
71°	474.9	472.8	464.4	461.2	466.5	477.0	499.1	558.1	727.6	1181.5	2018.6
72.5°	448.6	443.3	430.7	425.4	426.5	430.7	437.0	460.1	511.8	671.8	1150.9
75°	408.6	395.9	380.1	372.8	369.6	368.6	368.6	374.9	386.5	405.4	471.8
77.5°	362.2	344.3	327.4	320.1	314.9	311.7	309.5	305.4	303.3	311.7	335.9
80°	306.4	287.4	273.7	269.5	266.4	260.1	251.6	243.3	237.9	242.2	257.0
82.5°	236.9	218.0	220.0	221.2	215.8	205.3	196.9	187.4	178.0	175.8	183.2
85°	188.5	179.0	172.7	186.4	174.8	162.1	150.6	134.8	112.6	92.7	101.1
87.5°	81.1	82.1	117.9	178.0	155.8	125.3	104.2	84.2	53.7	40.0	41.0
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: P196036

CATALOG NUMBER: NAV-AF-04-D-UNV-RW-600

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2	1871.2
2.5°	1869.0	1869.0	1865.9	1863.8	1863.8	1863.8	1861.7	1862.8
5°	1881.7	1883.8	1885.9	1884.9	1888.1	1891.2	1890.1	1889.1
7.5°	1902.8	1909.1	1915.4	1918.5	1922.7	1927.0	1928.1	1924.9
10°	1923.9	1936.4	1946.0	1954.3	1959.7	1963.9	1967.0	1965.9
12.5°	1950.2	1968.1	1984.9	2001.7	2013.4	2019.6	2026.0	2023.9
15°	1993.3	2013.4	2034.3	2056.5	2074.4	2083.9	2093.4	2091.2
17.5°	2052.2	2070.1	2087.0	2109.1	2131.3	2141.8	2152.3	2151.3
20°	2126.0	2139.7	2149.1	2161.8	2182.9	2194.4	2203.9	2200.8
22.5°	2210.3	2214.5	2215.5	2219.7	2236.6	2250.3	2262.9	2266.0
25°	2301.8	2298.7	2292.3	2289.3	2300.8	2315.6	2331.3	2335.5
27.5°	2415.6	2405.1	2389.2	2376.6	2379.8	2398.7	2416.6	2420.8
30°	2558.8	2534.6	2500.9	2476.7	2472.5	2492.4	2511.4	2517.7
32.5°	2722.0	2689.3	2643.0	2606.2	2590.4	2608.3	2625.1	2634.6
35°	2915.7	2879.9	2824.2	2776.8	2751.5	2763.1	2792.6	2803.1
37.5°	3145.3	3095.9	3033.7	2973.6	2931.6	2933.6	2965.2	2977.9
40°	3399.1	3327.5	3248.5	3173.7	3112.6	3108.4	3136.9	3146.4
42.5°	3663.4	3571.7	3479.1	3381.2	3305.4	3291.7	3328.5	3329.6
45°	3947.7	3829.7	3714.9	3601.3	3522.3	3498.1	3533.9	3538.1
47.5°	4251.0	4103.6	3967.7	3844.5	3759.2	3721.3	3756.1	3762.3
50°	4566.9	4414.1	4256.2	4119.3	4019.3	3972.9	4014.1	4018.3
52.5°	4879.6	4735.3	4578.4	4421.5	4300.5	4247.8	4296.2	4311.0
55°	5194.4	5055.4	4908.0	4751.1	4598.5	4552.1	4604.7	4620.6
57.5°	5521.9	5388.2	5254.5	5096.5	4948.0	4877.5	4934.3	4956.5
60°	5883.1	5765.1	5638.8	5479.8	5333.5	5251.3	5299.7	5325.0
62.5°	6238.0	6213.7	6098.9	5933.6	5748.3	5666.2	5707.2	5725.1
65°	6267.4	6660.2	6654.9	6490.7	6231.6	6093.7	6105.3	6113.7
67.5°	5470.3	6371.7	6947.7	6999.2	6710.8	6494.9	6469.7	6474.9
70°	3872.9	5110.2	6332.7	7135.1	7248.8	7081.4	7026.6	7035.0
71°	3103.2	4384.7	5730.4	6809.8	7240.4	7192.0	7161.5	7183.6
72.5°	1980.7	3230.6	4540.6	5831.5	6658.1	6895.0	6929.8	6943.5
75°	719.2	1390.0	2352.4	3370.6	4272.0	4892.3	5233.4	5260.7
77.5°	386.5	498.1	769.8	1149.9	1444.7	1602.7	1621.6	1628.9
80°	284.3	329.6	377.0	430.7	464.4	470.7	459.1	434.9
82.5°	201.1	227.4	246.4	265.4	279.1	267.5	222.2	169.5
85°	116.9	128.5	139.0	148.4	150.6	142.2	93.7	76.8
87.5°	46.3	50.5	49.5	55.9	53.7	49.5	36.8	31.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)