

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: P196021

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196021
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 4000K, 1050mA LIGHTSQUARE WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6402.6 lumens
Efficiency: N/A
Efficacy: 108.5 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

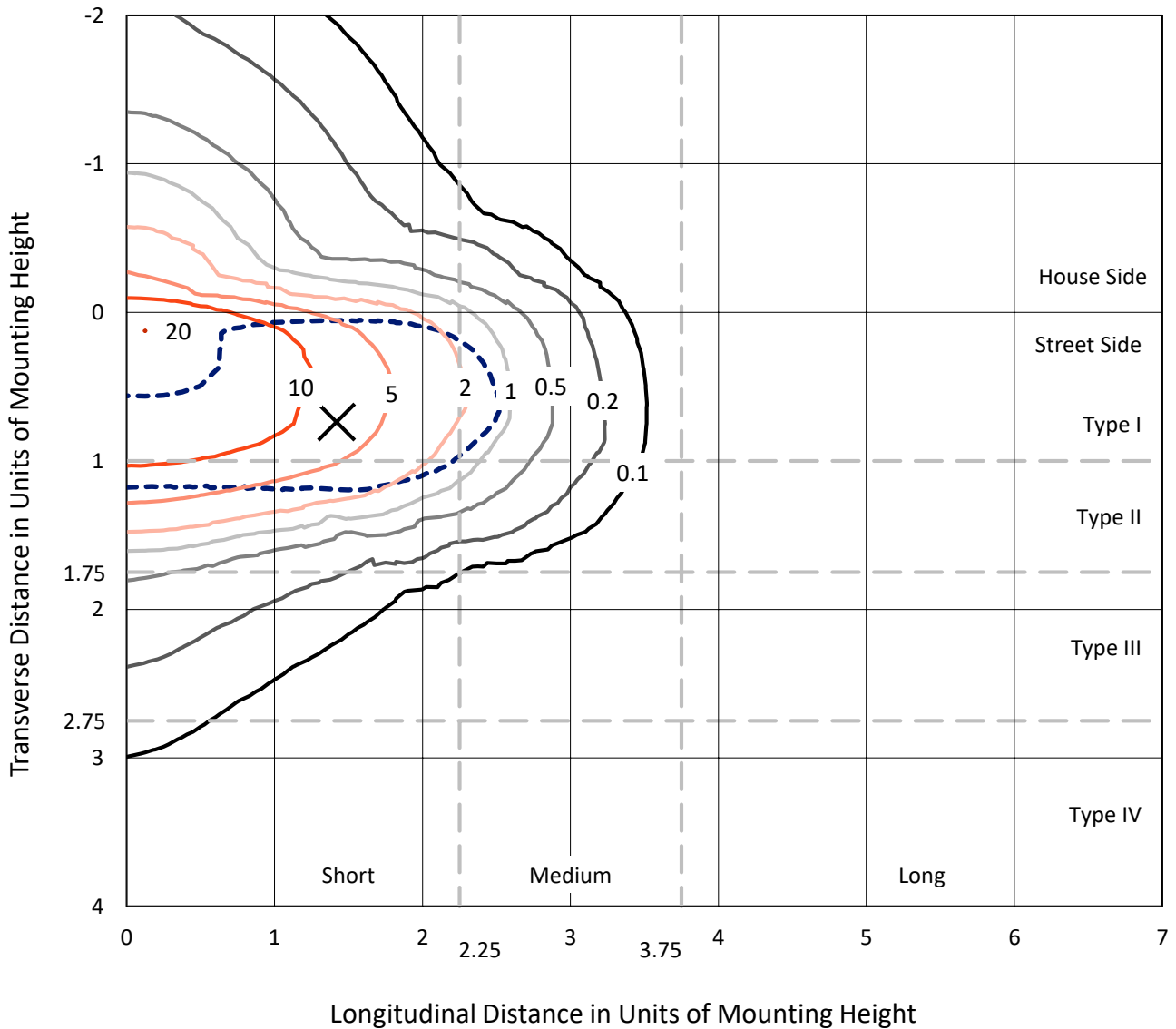
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

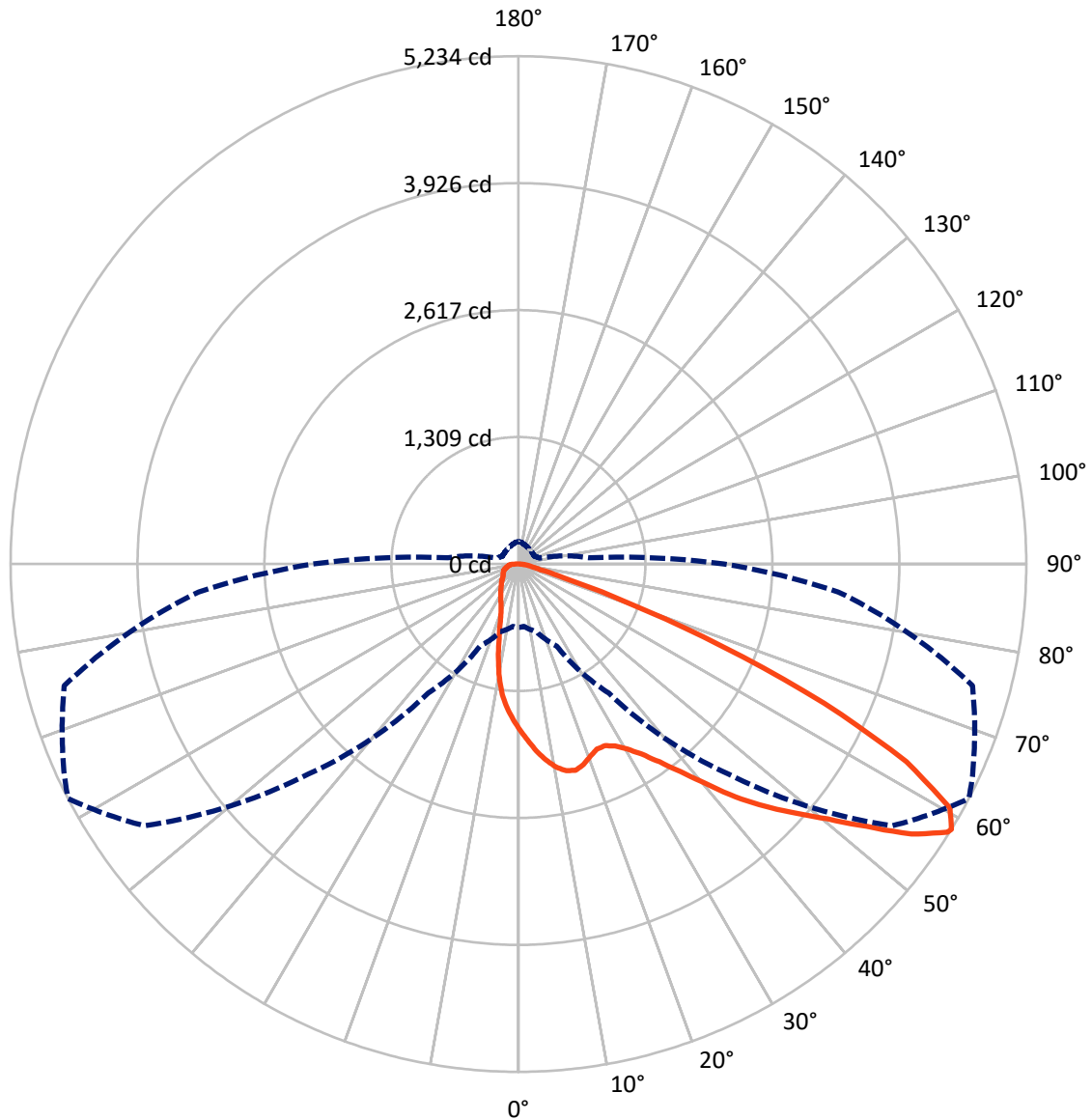
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 20 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	983.1	0.0	983.1
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	5419.6	0.0	5419.6
	% Fixture	84.6	0.0	84.6
Total	Lumens	6402.6	0.0	6402.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.8	2.4
10°-20°	385.6	6.0
20°-30°	624.9	9.8
30°-40°	997.8	15.6
40°-50°	1451.3	22.7
50°-60°	1518.7	23.7
60°-70°	925.8	14.5
70°-80°	258.9	4.0
80°-90°	86.8	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°	6402.6	100.0
0°-180°	6402.6	100.0



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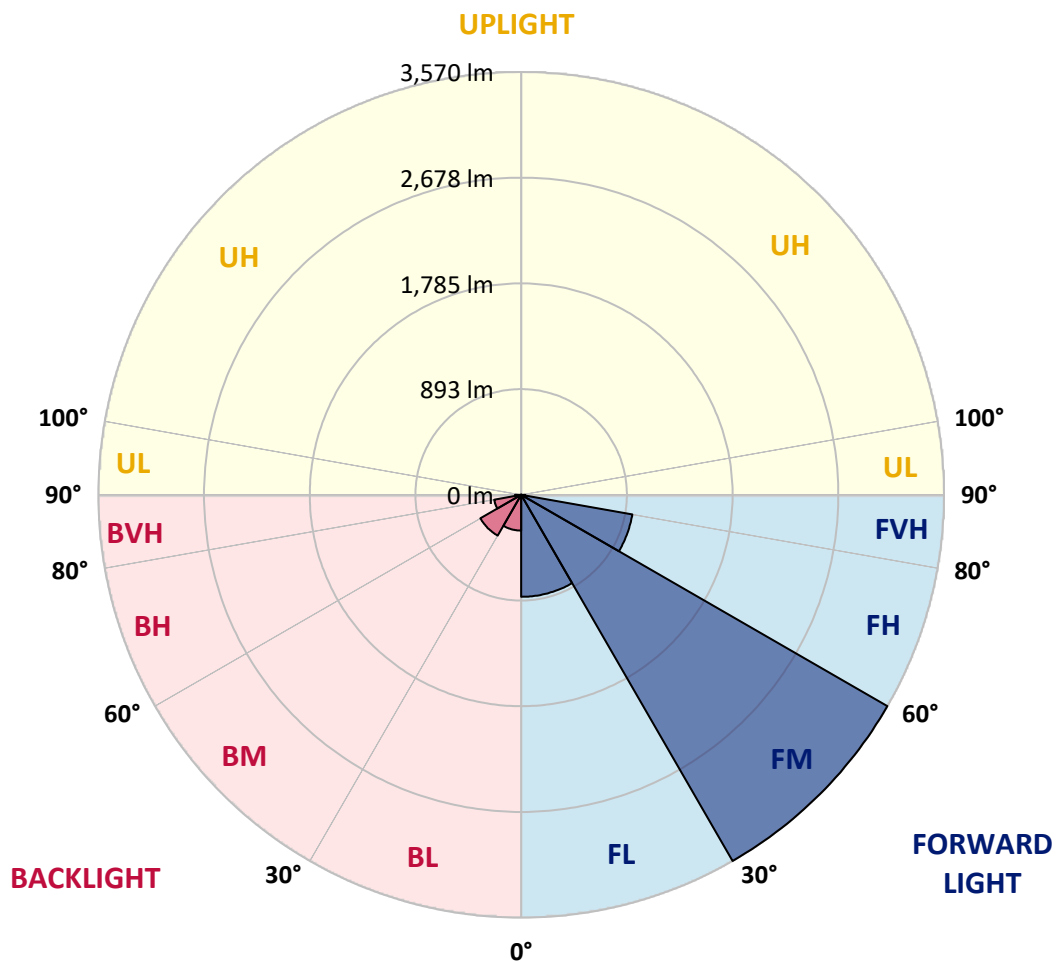
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	861.2	13.5			
FM	(30°-60°)	3570.2	55.8			
FH	(60°-80°)	953.3	14.9			G1/1800
FVH	(80°-90°)	34.9	0.5			G1/100
BL	(0°-30°)	302.2	4.7	B1/500		
BM	(30°-60°)	397.6	6.2	B1/1000		
BH	(60°-80°)	231.4	3.6	B1/500		G1/500
BVH	(80°-90°)	51.9	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°	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5
2.5°	1940.3	1939.1	1922.7	1911.9	1899.1	1869.5	1839.9	1817.9	1806.7	1763.9	1722.2
5°	2100.8	2096.0	2086.8	2075.2	2058.4	2021.1	1974.4	1934.0	1917.9	1841.9	1765.5
7.5°	2016.0	2023.6	2052.0	2084.1	2117.6	2120.1	2086.8	2038.8	2021.1	1919.6	1807.6
10°	1781.1	1777.9	1813.5	1875.9	1986.8	2096.4	2151.3	2127.6	2109.2	1993.2	1849.5
12.5°	1709.9	1709.0	1715.1	1731.0	1800.7	1951.2	2134.8	2186.0	2179.6	2071.2	1894.3
15°	1731.4	1732.3	1731.9	1733.9	1753.1	1824.7	2043.2	2205.7	2225.6	2148.4	1939.9
17.5°	1800.7	1797.9	1789.1	1779.5	1782.3	1807.9	1944.3	2172.0	2232.1	2217.2	1978.4
20°	1907.5	1907.5	1884.0	1857.2	1839.5	1845.1	1903.1	2114.4	2202.4	2275.7	2007.1
22.5°	2041.6	2043.5	2008.8	1960.0	1920.0	1904.7	1926.7	2071.6	2166.4	2329.7	2032.8
25°	2208.0	2207.6	2156.8	2086.8	2023.6	1987.2	1986.8	2073.6	2155.3	2392.9	2059.6
27.5°	2414.2	2395.3	2336.1	2236.5	2147.3	2091.6	2066.4	2124.1	2178.9	2470.5	2095.6
30°	2646.7	2627.4	2549.8	2421.7	2300.9	2219.7	2178.1	2211.2	2250.9	2569.4	2150.0
32.5°	2876.7	2881.1	2789.9	2645.5	2490.2	2375.7	2314.1	2334.5	2362.1	2690.3	2223.7
35°	3213.6	3213.3	3094.0	2913.6	2729.0	2570.6	2492.5	2503.4	2528.6	2860.7	2326.9
37.5°	3464.9	3460.9	3384.1	3224.4	3016.8	2826.7	2713.9	2715.4	2737.1	3074.8	2463.0
40°	3490.5	3489.8	3489.4	3466.6	3324.5	3145.3	3004.0	2974.7	2983.5	3302.1	2607.4
42.5°	3294.9	3324.1	3408.2	3537.0	3576.5	3482.5	3348.9	3283.7	3264.4	3562.9	2760.2
45°	3016.0	3030.8	3178.0	3467.7	3703.5	3799.4	3699.0	3561.4	3528.6	3816.7	2884.7
47.5°	2886.4	2879.9	2965.1	3280.9	3691.0	4051.6	4058.8	3833.1	3777.5	4035.5	2990.8
50°	2608.2	2599.8	2707.4	3005.9	3555.8	4176.8	4428.1	4129.2	4026.3	4243.6	3086.8
52.5°	2054.0	2046.0	2190.4	2575.0	3253.3	4130.0	4739.4	4492.6	4317.3	4444.1	3176.5
55°	1336.5	1337.3	1475.0	1871.5	2632.7	3857.1	4885.5	4912.3	4715.8	4644.6	3248.9
57.5°	735.9	729.1	827.2	1070.8	1811.1	3237.2	4763.9	5214.8	5112.4	4816.7	3301.3
58°	654.3	646.3	721.9	932.0	1623.8	3062.4	4702.6	5234.0	5163.2	4845.1	3308.8
60°	466.2	452.6	441.0	525.4	935.6	2208.0	4294.4	5109.6	5178.0	4901.9	3301.7
62.5°	392.9	377.4	335.7	332.6	440.6	1080.0	3396.1	4487.4	4679.0	4771.0	3185.7
65°	365.0	349.3	294.5	274.9	298.9	466.2	2100.0	3464.9	3721.1	4316.0	2893.5
67.5°	344.9	326.5	267.7	242.1	246.9	279.0	891.2	2266.0	2563.0	3365.7	2321.3
70°	326.9	306.5	246.5	216.9	212.9	212.1	348.1	1183.2	1469.4	2202.4	1555.0
72.5°	306.5	286.5	227.7	196.1	187.3	172.1	209.3	489.0	670.2	1079.6	712.7
75°	276.9	260.5	206.8	178.9	163.7	139.6	154.5	234.5	288.9	413.4	330.9
77.5°	243.7	230.5	185.7	164.5	144.0	114.1	118.0	158.9	178.5	232.9	191.7
80°	172.5	177.3	162.0	144.8	126.8	92.1	90.8	116.4	128.1	156.5	128.9
82.5°	118.9	122.4	132.1	114.5	102.4	71.6	66.8	80.8	86.8	94.4	62.4
85°	84.8	82.4	91.7	82.0	75.2	45.6	42.9	51.2	54.8	57.6	30.0
87.5°	51.7	51.2	52.8	42.5	39.2	23.2	21.2	24.4	26.0	25.2	14.4
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°	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5	1709.5
2.5°	1706.7	1687.1	1644.2	1609.8	1572.6	1544.2	1515.8	1499.7	1482.2	1472.1	1471.0
5°	1725.5	1685.4	1594.3	1509.4	1422.1	1343.7	1266.9	1210.0	1163.6	1137.2	1135.7
7.5°	1746.3	1683.5	1542.6	1395.7	1240.5	1086.1	949.6	853.1	791.2	762.3	760.3
10°	1762.2	1675.1	1479.8	1251.3	1005.2	801.1	677.1	620.2	601.4	596.6	595.9
12.5°	1781.5	1669.0	1400.5	1066.0	768.3	609.9	572.2	568.7	572.6	575.0	575.4
15°	1799.5	1657.5	1293.7	860.7	601.4	545.0	545.8	553.4	561.4	565.0	565.4
17.5°	1807.9	1629.0	1153.3	678.2	526.2	515.8	525.0	535.0	542.2	545.0	545.0
20°	1807.9	1583.4	990.4	549.4	487.0	489.0	500.2	507.8	509.4	507.0	505.7
22.5°	1800.3	1527.0	832.0	479.4	455.0	462.6	471.4	466.2	447.3	433.0	430.2
25°	1793.5	1460.2	679.4	436.6	427.0	437.0	433.3	397.7	369.0	354.1	351.7
27.5°	1782.3	1379.3	552.2	401.4	399.8	407.7	372.1	337.8	323.4	315.3	313.7
30°	1779.5	1291.7	462.2	370.1	373.0	361.7	320.9	309.7	306.5	302.1	300.1
32.5°	1788.7	1204.1	405.8	344.5	347.3	310.6	294.9	296.6	296.1	290.5	288.5
35°	1813.9	1118.8	369.7	321.3	313.3	278.1	280.1	284.9	284.9	278.1	275.7
37.5°	1857.9	1039.6	347.0	301.7	274.2	261.3	266.5	272.9	272.9	268.1	266.1
40°	1904.7	962.4	329.7	286.1	249.3	249.7	254.9	259.7	261.7	262.5	260.9
42.5°	1947.2	882.3	311.3	269.3	238.1	240.9	243.3	246.9	255.3	260.9	260.1
45°	1971.9	801.9	291.3	248.5	230.5	231.7	230.9	237.3	247.2	255.7	255.7
47.5°	1994.8	735.9	274.9	227.7	222.9	222.9	220.4	226.9	236.1	246.1	246.9
50°	2016.3	693.0	263.3	211.6	213.3	212.1	211.2	217.3	229.7	241.7	243.7
52.5°	2038.4	678.6	252.9	200.1	203.3	201.7	202.4	210.9	224.8	237.3	239.3
55°	2069.2	687.8	242.1	192.1	193.6	193.2	196.5	206.1	218.5	230.9	231.7
57.5°	2107.2	721.5	232.9	186.1	184.4	186.9	192.1	201.3	213.3	228.1	229.2
58°	2114.8	729.5	231.3	184.4	182.5	186.1	191.3	200.1	212.5	228.1	229.2
60°	2126.4	757.9	227.3	181.3	175.6	182.1	188.4	197.3	210.9	230.1	232.5
62.5°	2070.5	763.5	226.1	177.7	168.5	176.5	184.0	194.1	209.3	236.9	242.1
65°	1876.3	705.8	217.7	171.7	162.4	172.1	180.0	191.7	214.1	257.3	259.7
67.5°	1506.2	586.3	197.3	162.4	155.7	166.8	176.9	191.7	216.0	260.5	262.1
70°	1035.6	440.6	171.7	152.4	147.6	160.5	175.6	196.1	209.3	246.5	241.7
72.5°	541.0	306.5	150.5	140.9	138.1	154.9	187.3	191.7	201.3	230.1	225.3
75°	272.5	208.5	132.5	127.7	127.3	152.8	209.7	184.4	192.8	216.5	226.9
77.5°	160.9	163.3	118.0	115.3	117.2	149.2	210.1	177.3	183.3	199.3	210.5
80°	110.1	134.8	106.8	106.1	107.6	137.3	193.6	168.5	172.1	188.4	200.5
82.5°	62.0	74.5	93.6	98.8	98.0	112.4	167.3	153.2	157.6	222.9	235.7
85°	30.0	44.8	78.5	92.5	83.7	74.9	136.1	136.1	137.3	159.7	161.6
87.5°	11.3	20.0	52.8	73.2	58.4	44.8	92.5	96.5	107.2	110.5	112.8
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)