

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: P195916

Luminaire Tested: **NAV-AF-04-D-UNV-5MQ-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195916
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24129)
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-5MQ-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17510.9 lumens
Efficiency: N/A
Efficacy: 135.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B4 - U0 - G2

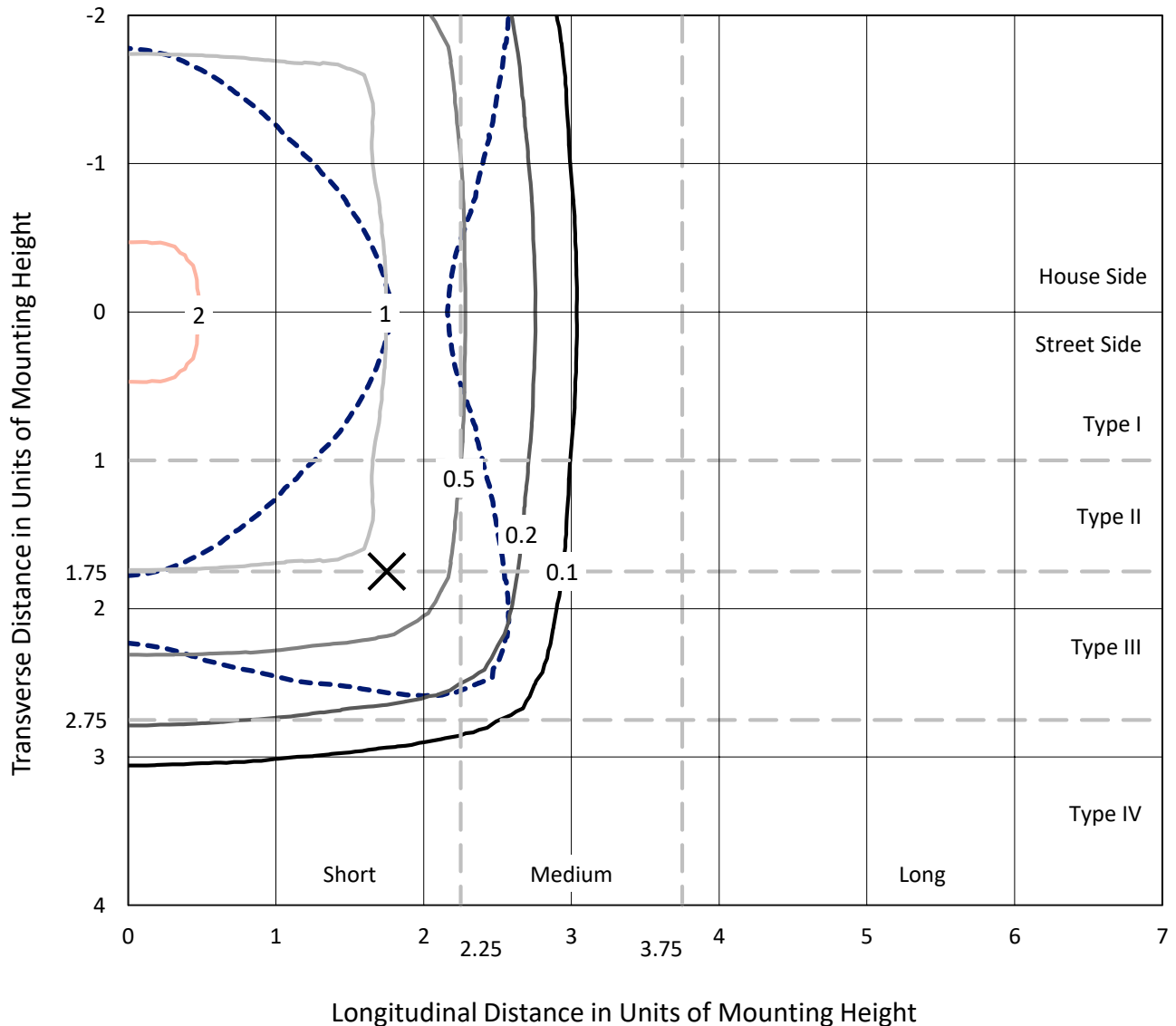
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

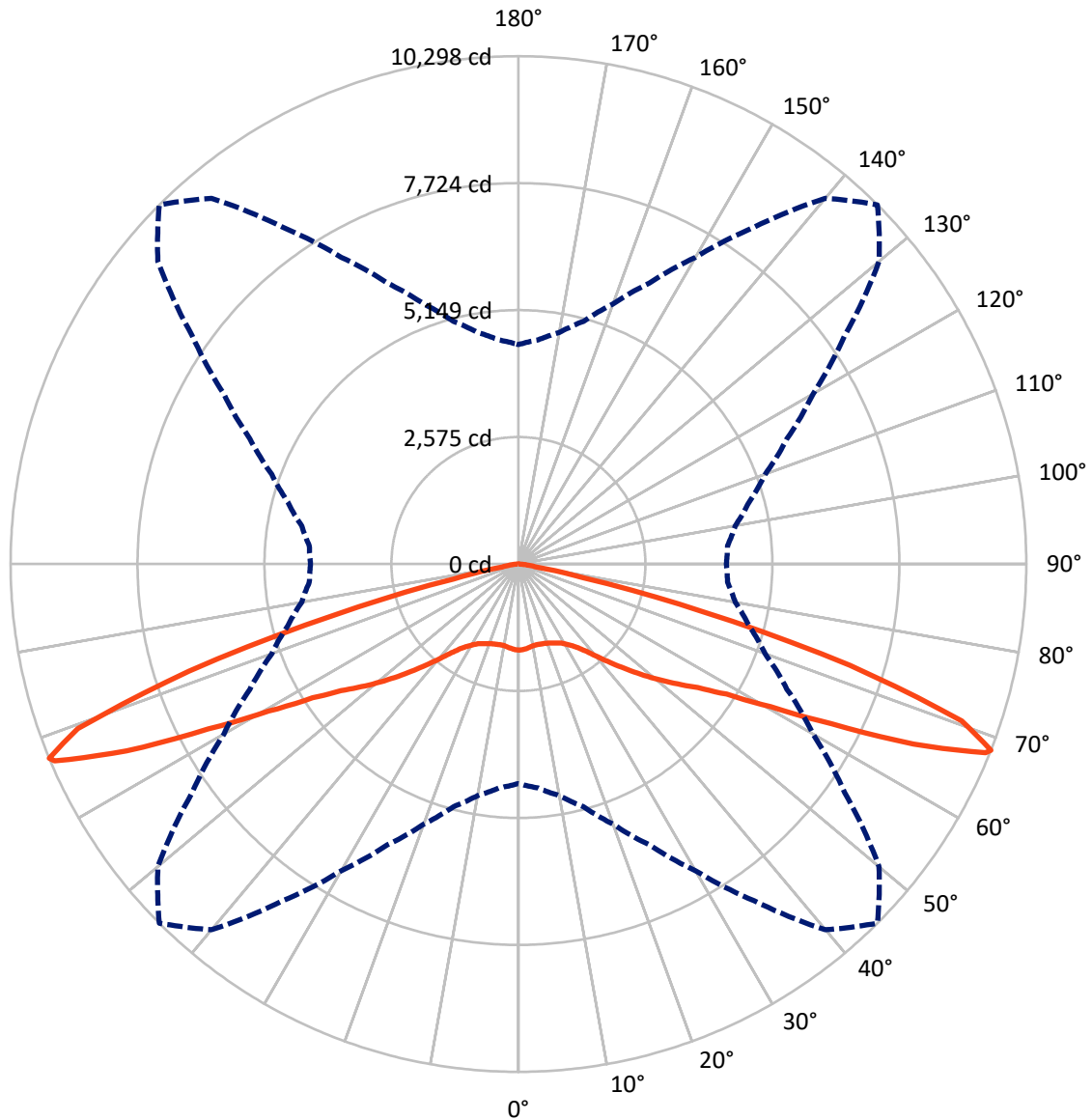
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.8 fc
 Type V - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	8755.4	0.0	8755.4
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	8755.4	0.0	8755.4
	% Fixture	50.0	0.0	50.0
Total	Lumens	17510.9	0.0	17510.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.4	0.9
10°-20°	474.0	2.7
20°-30°	805.9	4.6
30°-40°	1318.8	7.5
40°-50°	2357.0	13.5
50°-60°	3980.5	22.7
60°-70°	6172.3	35.2
70°-80°	2122.2	12.1
80°-90°	116.6	0.7
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°	17510.9	100.0
0°-180°	17510.9	100.0



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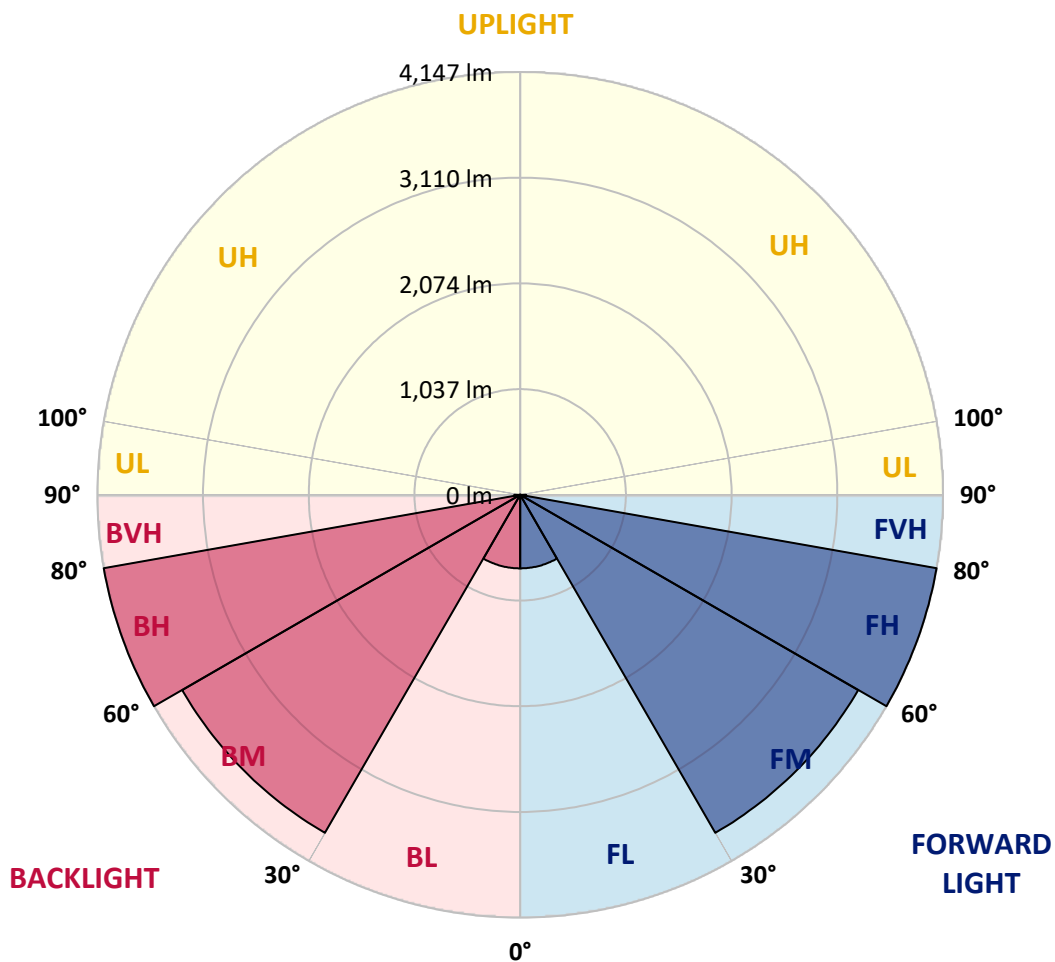
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	721.7	4.1			
FM	(30°-60°)	3828.2	21.9			
FH	(60°-80°)	4147.3	23.7			G2/5000
FVH	(80°-90°)	58.3	0.3			G1/100
BL	(0°-30°)	721.7	4.1	B2/1000		
BM	(30°-60°)	3828.2	21.9	B3/5000		
BH	(60°-80°)	4147.3	23.7	B4/5000		G2/5000
BVH	(80°-90°)	58.3	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G2

Type V Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8
2.5°	1754.3	1754.3	1756.4	1755.4	1752.1	1748.9	1745.7	1742.5	1740.3	1738.2	1736.0
5°	1736.0	1736.0	1739.2	1737.1	1734.9	1731.8	1729.6	1726.4	1724.3	1722.1	1723.2
7.5°	1712.4	1714.6	1716.7	1715.7	1711.4	1710.3	1707.1	1706.0	1703.8	1700.7	1701.7
10°	1692.1	1693.2	1695.3	1694.2	1693.2	1689.9	1688.9	1687.8	1686.7	1682.4	1681.3
12.5°	1671.7	1673.9	1676.0	1677.0	1676.0	1677.0	1678.2	1679.2	1678.2	1676.0	1676.0
15°	1655.6	1657.8	1661.0	1664.2	1665.3	1671.7	1676.0	1680.3	1683.5	1684.6	1681.3
17.5°	1647.1	1650.2	1654.5	1661.0	1666.4	1673.9	1681.3	1687.8	1693.2	1694.2	1691.0
20°	1645.9	1649.2	1655.6	1663.1	1672.7	1682.4	1694.2	1703.8	1709.2	1712.4	1709.2
22.5°	1653.5	1657.8	1666.4	1676.0	1687.8	1700.7	1715.7	1726.4	1737.1	1741.4	1738.2
25°	1674.9	1679.2	1688.9	1700.7	1713.5	1729.6	1744.6	1758.6	1769.3	1774.6	1770.3
27.5°	1720.0	1721.0	1731.8	1744.6	1759.7	1773.6	1792.8	1799.3	1807.9	1813.3	1807.9
30°	1783.2	1785.4	1795.0	1815.4	1829.3	1847.6	1858.3	1864.7	1874.4	1879.8	1873.3
32.5°	1879.8	1881.8	1890.4	1909.7	1922.6	1936.5	1949.4	1953.7	1963.3	1969.8	1962.3
35°	2015.9	2020.2	2027.7	2040.6	2051.3	2062.1	2071.7	2068.4	2074.9	2083.4	2076.0
37.5°	2202.5	2201.4	2203.5	2213.3	2223.9	2230.3	2245.4	2237.9	2244.4	2251.8	2247.5
40°	2420.2	2420.2	2419.1	2436.3	2440.6	2447.0	2463.1	2453.4	2461.9	2470.5	2463.1
42.5°	2667.9	2672.2	2677.5	2691.5	2703.2	2705.4	2712.9	2708.6	2719.3	2726.9	2719.3
45°	2953.1	2959.5	2965.9	2998.2	3003.5	3007.8	3013.1	2999.2	3011.0	3017.4	3015.2
47.5°	3249.0	3260.9	3274.8	3308.0	3329.5	3339.1	3343.4	3327.4	3328.4	3338.0	3339.1
50°	3583.6	3596.5	3610.4	3647.9	3668.3	3685.5	3690.8	3672.6	3674.7	3682.2	3684.4
52.5°	3892.4	3907.5	3937.4	3987.9	4016.8	4046.8	4048.9	4026.4	4036.1	4041.5	4037.2
55°	4183.1	4202.3	4242.0	4309.5	4362.1	4421.1	4447.9	4423.2	4423.2	4418.9	4416.8
57.5°	4521.9	4543.3	4584.0	4662.3	4735.2	4819.9	4892.9	4917.5	4962.5	4977.6	4953.9
60°	5032.3	5054.8	5096.6	5199.6	5291.7	5415.1	5535.2	5632.8	5791.4	5877.3	5800.0
62.5°	5498.7	5533.0	5631.7	5811.8	6011.3	6239.7	6504.5	6693.3	6981.6	7125.4	6931.3
65°	5392.6	5462.3	5655.3	5938.3	6350.1	6845.5	7384.9	7902.8	8499.0	8804.5	8410.0
67.5°	4710.6	4769.5	4977.6	5306.8	5820.4	6503.4	7342.0	8414.3	9644.2	10216.8	9518.8
68°	4450.0	4560.4	4767.4	5094.5	5612.4	6283.6	7179.0	8337.0	9679.6	10298.3	9544.4
70°	3412.1	3451.7	3650.1	3943.9	4502.5	5160.9	6064.9	7384.9	8902.1	9539.1	8763.8
72.5°	1621.3	1644.9	1773.6	2063.1	2418.1	2954.2	3752.0	4996.9	6364.1	7026.8	6253.6
75°	594.0	599.4	629.4	698.1	831.0	1032.6	1415.5	2189.6	3241.5	3865.6	3254.4
77.5°	320.6	321.7	333.5	350.7	374.2	401.0	458.9	615.5	993.0	1351.1	1048.7
80°	201.6	200.5	212.4	226.3	242.3	255.2	260.5	278.8	314.1	367.8	337.8
82.5°	102.9	112.6	139.4	154.4	178.0	182.3	177.0	175.8	186.6	201.6	208.1
85°	56.9	50.4	74.0	98.6	107.2	110.5	111.5	105.1	102.9	100.8	106.2
87.5°	28.9	26.8	32.1	49.3	52.6	42.9	44.0	37.5	25.8	25.8	26.8
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):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8	1746.8
2.5°	1733.9	1734.9	1732.8	1732.8	1732.8	1733.9	1732.8	1731.8
5°	1720.0	1722.1	1722.1	1723.2	1724.3	1724.3	1724.3	1724.3
7.5°	1699.5	1700.7	1702.8	1702.8	1702.8	1702.8	1702.8	1702.8
10°	1680.3	1678.2	1677.0	1674.9	1674.9	1671.7	1672.7	1673.9
12.5°	1670.6	1666.4	1664.2	1661.0	1658.8	1655.6	1655.6	1656.7
15°	1674.9	1668.5	1662.1	1659.9	1657.8	1655.6	1653.5	1654.5
17.5°	1683.5	1676.0	1668.5	1664.2	1659.9	1656.7	1655.6	1656.7
20°	1701.7	1691.0	1679.2	1671.7	1663.1	1661.0	1657.8	1661.0
22.5°	1726.4	1713.5	1698.5	1684.6	1674.9	1670.6	1666.4	1669.6
25°	1756.4	1742.5	1727.5	1711.4	1700.7	1697.5	1692.1	1692.1
27.5°	1798.2	1786.5	1773.6	1758.6	1747.8	1744.6	1736.0	1736.0
30°	1864.7	1852.9	1841.1	1828.2	1817.6	1814.3	1803.6	1803.6
32.5°	1952.6	1939.8	1932.3	1921.5	1912.9	1907.6	1894.7	1893.7
35°	2070.6	2058.8	2057.8	2050.2	2041.6	2042.7	2029.8	2027.7
37.5°	2240.1	2230.3	2233.6	2227.2	2219.6	2226.0	2218.6	2218.6
40°	2456.6	2453.4	2456.6	2452.3	2453.4	2454.5	2448.0	2450.2
42.5°	2718.3	2709.7	2729.0	2726.9	2723.6	2732.2	2717.2	2706.4
45°	3019.5	3016.4	3035.6	3038.9	3032.4	3037.8	3011.0	3009.9
47.5°	3346.6	3346.6	3363.8	3361.6	3355.2	3356.3	3324.1	3303.7
50°	3687.6	3685.5	3702.6	3698.4	3689.8	3688.7	3655.4	3635.1
52.5°	4042.5	4042.5	4067.2	4055.4	4035.0	4025.4	3984.6	3957.8
55°	4435.0	4429.7	4437.2	4398.6	4358.9	4329.9	4279.5	4259.2
57.5°	4931.4	4869.2	4815.6	4766.3	4710.6	4676.2	4617.3	4595.8
60°	5635.9	5469.7	5397.9	5299.3	5207.0	5160.9	5082.6	5040.8
62.5°	6611.7	6336.2	6141.0	5923.3	5713.2	5565.2	5446.2	5393.6
65°	7739.7	7139.3	6642.8	6176.4	5780.7	5466.5	5291.7	5237.1
67.5°	8168.7	7066.4	6209.6	5540.5	5060.1	4685.9	4476.8	4432.9
68°	8077.5	6899.1	6009.1	5323.9	4841.4	4464.0	4255.9	4216.3
70°	7125.4	5820.4	4881.1	4199.1	3748.7	3389.5	3242.7	3179.3
72.5°	4857.5	3738.0	2867.3	2293.7	1956.9	1729.6	1594.5	1548.3
75°	2235.8	1510.9	1009.0	753.8	640.2	585.4	543.7	533.0
77.5°	651.9	473.9	407.4	377.5	355.0	335.6	321.7	320.6
80°	309.9	290.6	282.0	262.7	242.3	224.1	211.2	213.4
82.5°	208.1	202.6	202.6	183.3	151.2	129.7	107.2	96.5
85°	110.5	114.8	121.2	114.8	99.7	74.0	48.3	52.6
87.5°	37.5	42.9	45.0	44.0	39.7	30.1	22.5	22.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)