

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: P195956

Luminaire Tested: **NAV-AF-02-D-UNV-5NQ-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195956
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24130)
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-5NQ-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V
NARROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14052.3 lumens
Efficiency: N/A
Efficacy: 108.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B3 - U0 - G2

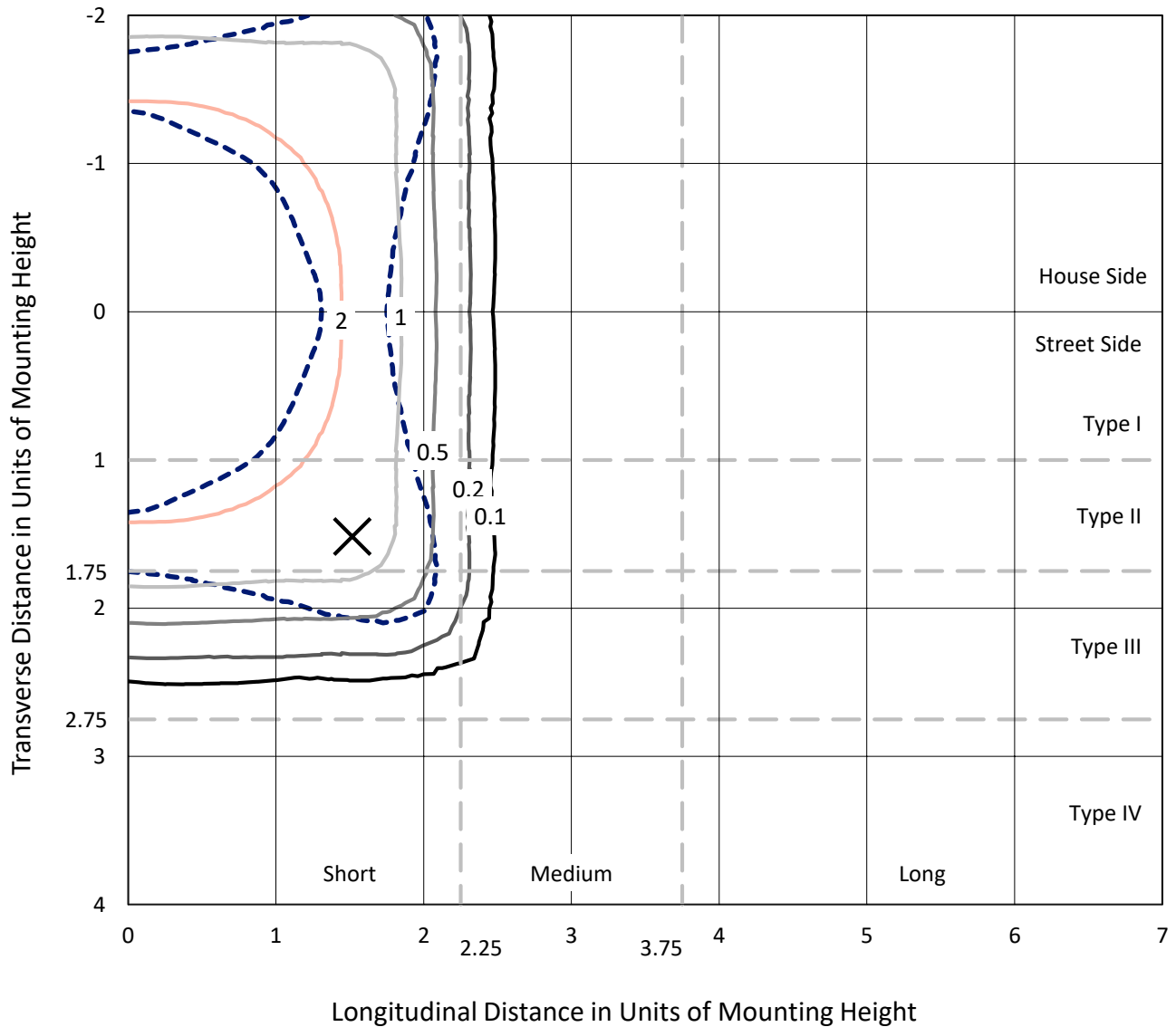
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

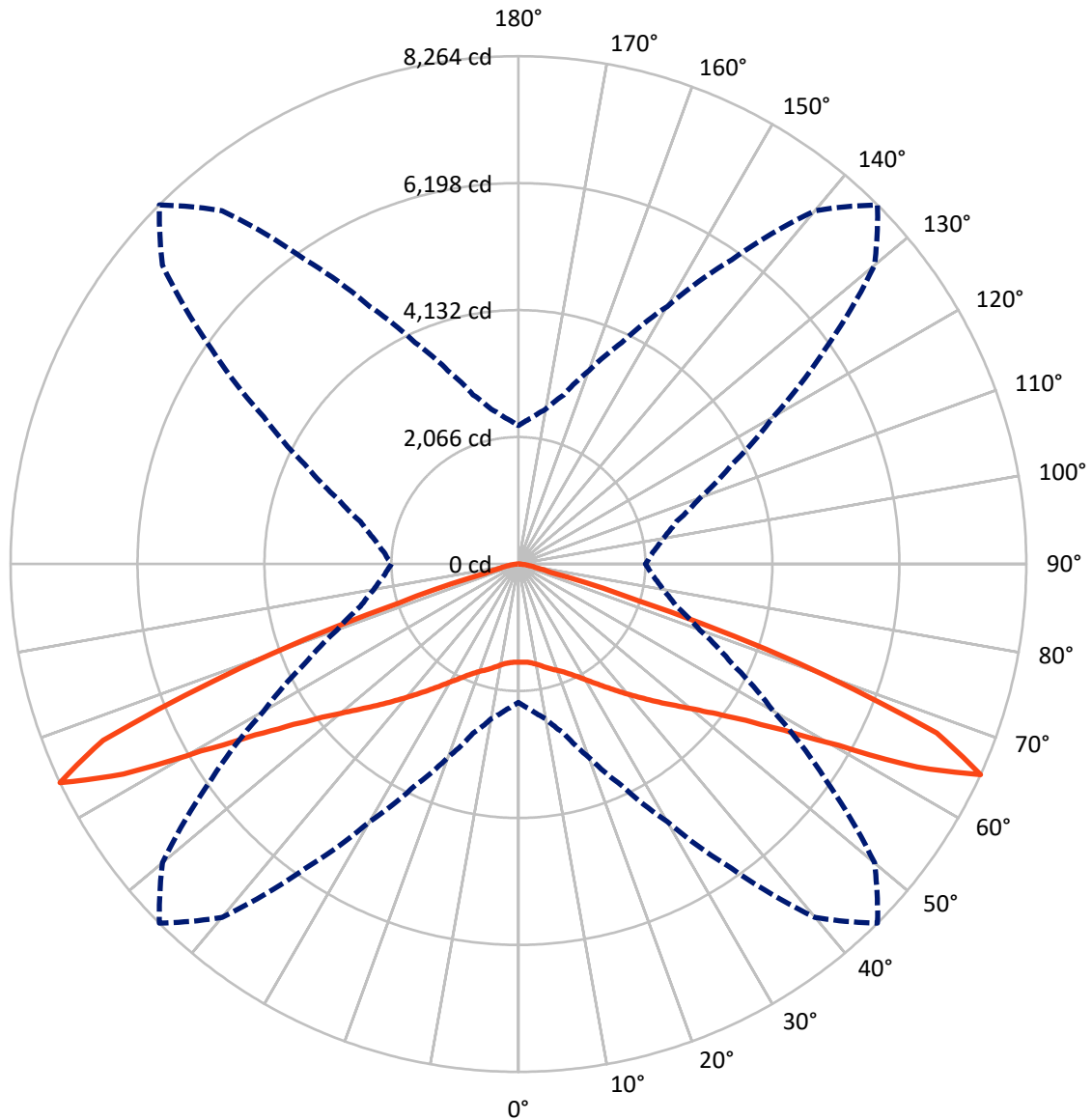
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4 fc
 Type V - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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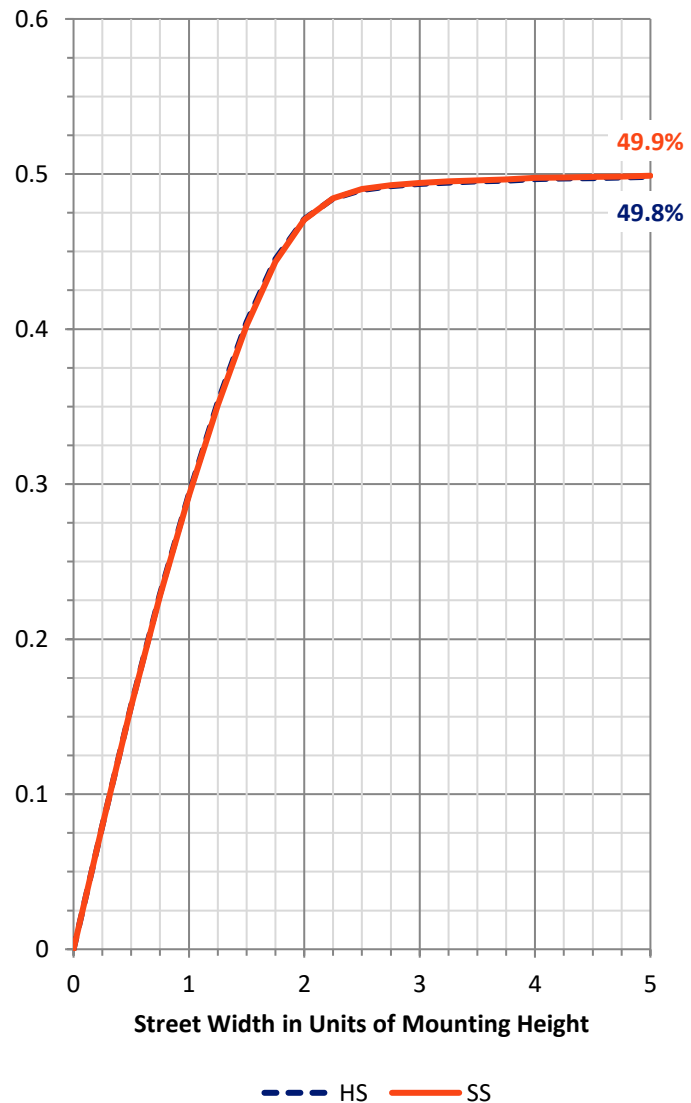
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	7026.1	0.0	7026.1
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	7026.1	0.0	7026.1
	% Fixture	50.0	0.0	50.0
Total	Lumens	14052.3	0.0	14052.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.7	1.1
10°-20°	498.9	3.6
20°-30°	930.7	6.6
30°-40°	1569.2	11.2
40°-50°	2548.9	18.1
50°-60°	3993.7	28.4
60°-70°	3769.8	26.8
70°-80°	508.1	3.6
80°-90°	77.4	0.6
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°	14052.3	100.0
0°-180°	14052.3	100.0



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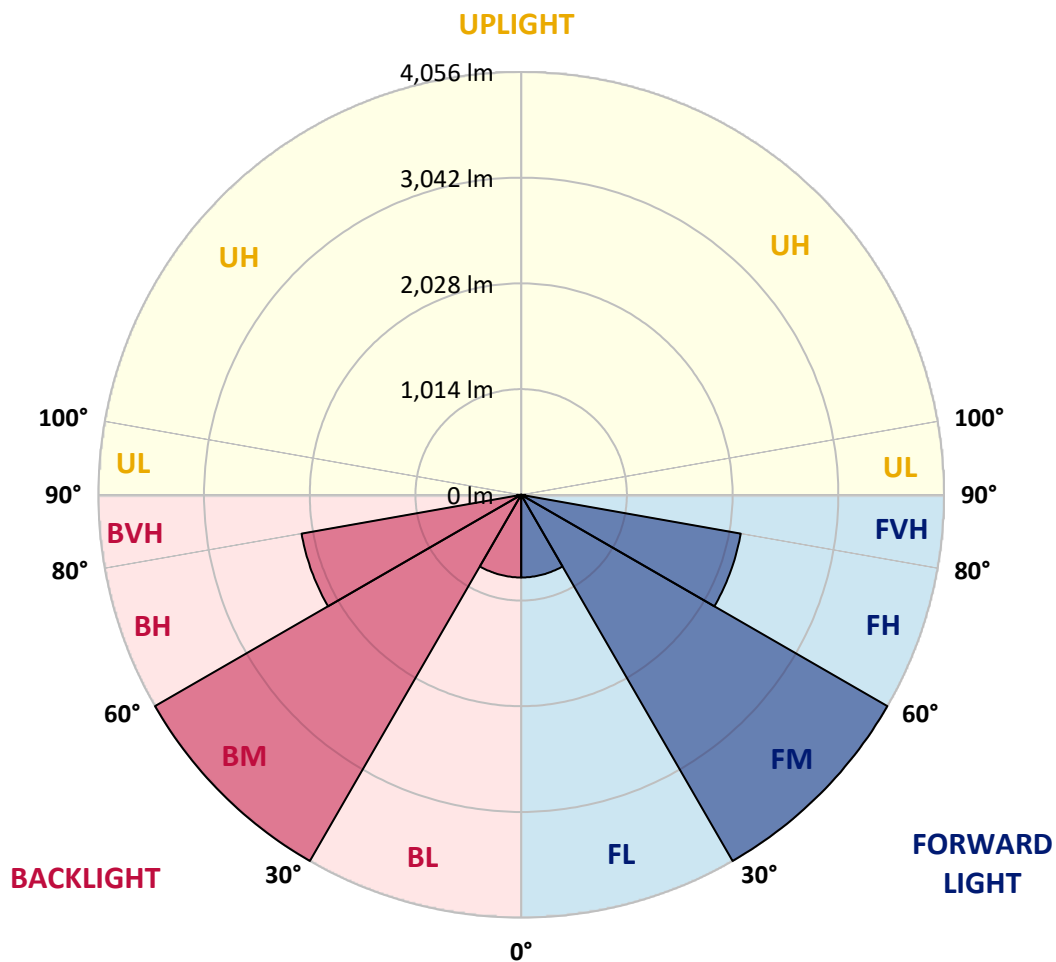
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	792.6	5.6			
FM (30°-60°)	4055.9	28.9			
FH (60°-80°)	2138.9	15.2			G2/5000
FVH (80°-90°)	38.7	0.3			G1/100
BL (0°-30°)	792.6	5.6	B2/1000		
BM (30°-60°)	4055.9	28.9	B3/5000		
BH (60°-80°)	2138.9	15.2	B3/2500		G2/5000
BVH (80°-90°)	38.7	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G2

Type V Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5
2.5°	1611.6	1611.6	1614.2	1613.3	1609.8	1607.2	1604.6	1601.0	1599.3	1597.5	1596.7
5°	1620.4	1620.4	1622.9	1622.1	1619.4	1616.0	1614.2	1611.6	1608.9	1607.2	1608.1
7.5°	1642.2	1643.1	1644.0	1643.1	1640.4	1637.8	1634.4	1633.4	1630.0	1627.3	1629.0
10°	1675.5	1675.5	1676.3	1677.2	1675.5	1669.4	1669.4	1667.6	1664.0	1660.6	1661.5
12.5°	1712.2	1712.2	1713.1	1713.1	1713.1	1709.6	1710.5	1709.6	1705.3	1703.5	1705.3
15°	1748.1	1749.0	1749.0	1750.8	1750.8	1751.6	1755.1	1755.1	1753.3	1752.5	1752.5
17.5°	1790.2	1791.9	1792.7	1795.4	1796.3	1798.0	1801.5	1802.4	1803.3	1800.6	1801.5
20°	1846.1	1847.0	1849.7	1850.5	1854.0	1854.0	1855.8	1854.9	1853.2	1849.7	1849.7
22.5°	1909.2	1911.0	1916.2	1916.2	1920.6	1917.9	1918.9	1916.2	1911.8	1910.1	1908.3
25°	1991.5	1994.1	1998.4	1996.7	1998.4	1994.1	1994.1	1994.1	1991.5	1988.8	1988.0
27.5°	2095.6	2091.2	2095.6	2092.1	2091.2	2087.7	2088.7	2086.9	2084.3	2083.3	2079.9
30°	2204.2	2198.9	2201.6	2202.4	2200.7	2199.9	2196.3	2193.7	2189.3	2190.1	2187.6
32.5°	2328.4	2323.2	2325.9	2326.7	2325.0	2326.7	2325.9	2319.7	2314.5	2318.0	2318.0
35°	2476.5	2472.9	2479.9	2482.6	2477.3	2474.7	2471.1	2464.2	2456.3	2461.5	2462.4
37.5°	2654.1	2649.7	2655.0	2662.0	2652.4	2647.1	2633.1	2622.6	2617.3	2620.0	2623.5
40°	2838.8	2839.7	2854.5	2856.4	2845.8	2839.7	2825.7	2809.9	2795.1	2795.1	2799.4
42.5°	3033.2	3035.8	3053.3	3059.4	3056.0	3044.5	3025.3	3006.0	2986.8	2990.3	2995.5
45°	3252.9	3249.4	3267.7	3282.6	3280.0	3276.5	3258.1	3223.1	3205.6	3204.7	3213.5
47.5°	3484.0	3491.0	3510.3	3535.6	3534.7	3526.0	3502.4	3470.0	3437.6	3440.2	3450.7
50°	3753.6	3763.2	3795.7	3821.0	3824.5	3821.8	3793.8	3756.2	3710.7	3713.3	3727.3
52.5°	3995.2	4009.3	4046.9	4099.4	4131.8	4146.6	4128.2	4093.2	4046.9	4049.5	4064.4
55°	4214.0	4235.9	4292.0	4363.7	4428.6	4488.9	4516.0	4515.2	4481.0	4488.9	4508.1
57.5°	4351.4	4382.1	4467.0	4582.6	4711.3	4832.9	4938.0	5036.9	5058.8	5099.9	5099.9
60°	4166.8	4238.6	4351.4	4549.3	4802.2	5075.4	5371.3	5659.3	5844.8	5991.0	5912.2
62.5°	3479.6	3585.5	3744.0	4004.9	4398.8	4886.3	5480.7	6150.4	6849.0	7276.0	6962.7
65°	2251.4	2384.5	2557.0	2850.2	3346.6	3974.2	4839.9	6043.6	7505.4	8263.5	7563.2
67.5°	892.0	982.1	1087.2	1295.6	1726.2	2342.5	3314.2	4798.8	6627.4	7342.6	6557.4
70°	426.3	441.2	461.4	506.0	613.7	828.1	1331.5	2364.3	4064.4	4818.1	3967.2
72.5°	308.1	310.8	320.4	335.2	366.8	410.5	499.0	723.0	1401.4	2037.8	1403.2
75°	233.7	237.2	242.4	250.3	267.0	288.0	321.3	385.1	479.7	553.2	478.8
77.5°	177.7	181.2	185.6	193.4	202.2	217.1	229.3	254.7	295.0	310.8	309.0
80°	129.5	135.6	142.7	149.7	155.8	162.9	163.7	175.9	198.8	213.6	209.2
82.5°	82.2	87.6	105.9	113.8	114.7	116.4	115.6	116.4	128.7	139.2	135.6
85°	52.5	56.1	65.7	74.4	72.6	76.1	76.1	74.4	69.2	59.5	70.9
87.5°	26.3	27.1	31.5	39.4	37.6	33.2	32.4	32.4	23.6	20.2	21.9
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°	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5
2.5°	1594.1	1595.8	1593.1	1593.1	1592.3	1594.1	1591.4	1591.4
5°	1606.3	1608.9	1608.1	1608.1	1609.8	1611.6	1610.6	1609.8
7.5°	1628.2	1630.0	1631.7	1632.5	1634.4	1633.4	1635.2	1634.4
10°	1661.5	1659.7	1662.3	1659.7	1660.6	1658.8	1659.7	1659.7
12.5°	1703.5	1700.9	1699.1	1697.4	1697.4	1693.8	1693.8	1694.7
15°	1751.6	1747.2	1743.7	1742.0	1740.2	1740.2	1737.6	1739.3
17.5°	1798.9	1794.6	1788.4	1788.4	1785.8	1784.0	1782.3	1786.6
20°	1848.8	1844.4	1840.9	1840.0	1834.8	1833.0	1833.9	1839.2
22.5°	1906.6	1903.9	1903.9	1902.2	1898.7	1896.0	1896.0	1902.2
25°	1984.4	1979.2	1980.1	1980.9	1979.2	1979.2	1977.5	1981.9
27.5°	2079.9	2075.5	2078.1	2079.9	2078.1	2080.8	2078.1	2081.6
30°	2192.0	2189.3	2192.0	2194.5	2190.1	2190.1	2188.4	2191.1
32.5°	2325.9	2322.4	2324.1	2324.1	2318.0	2312.7	2305.7	2310.9
35°	2472.9	2468.6	2472.1	2474.7	2467.7	2462.4	2451.9	2456.3
37.5°	2634.9	2636.7	2641.0	2652.4	2650.7	2641.9	2634.0	2637.5
40°	2816.1	2824.8	2844.1	2852.0	2850.2	2841.5	2830.9	2832.8
42.5°	3020.9	3032.3	3052.4	3065.6	3059.4	3047.2	3034.1	3039.3
45°	3244.1	3261.7	3287.9	3301.1	3293.2	3280.0	3261.7	3271.3
47.5°	3480.5	3515.5	3550.6	3568.1	3565.4	3547.0	3523.3	3526.0
50°	3763.2	3809.6	3854.3	3871.8	3858.7	3830.6	3797.4	3796.5
52.5°	4115.1	4165.0	4201.8	4197.4	4165.0	4121.3	4083.6	4081.9
55°	4554.6	4571.2	4565.9	4528.3	4471.4	4403.1	4355.0	4347.1
57.5°	5085.9	5029.8	4947.6	4833.9	4706.0	4576.5	4488.9	4456.5
60°	5735.5	5482.5	5188.3	4878.5	4595.7	4383.9	4250.0	4168.5
62.5°	6272.0	5539.4	4881.9	4343.6	3903.3	3641.5	3458.6	3345.7
65°	6088.2	4785.7	3833.3	3139.1	2658.5	2388.0	2194.5	2065.8
67.5°	4703.4	3197.7	2225.2	1542.4	1169.5	990.0	864.9	783.5
70°	2371.4	1226.4	743.2	524.4	448.2	416.6	395.7	383.4
72.5°	695.9	464.8	386.1	341.4	314.3	295.0	282.7	276.6
75°	385.1	314.3	277.5	252.2	234.6	221.5	213.6	208.4
77.5°	265.3	228.4	210.1	193.4	179.4	169.8	163.7	158.5
80°	185.6	167.2	159.3	150.6	140.0	132.2	123.5	119.9
82.5°	123.5	115.6	113.8	106.8	100.7	92.0	76.1	70.9
85°	72.6	71.8	71.8	69.2	64.8	56.9	45.5	45.5
87.5°	25.4	26.3	27.1	28.8	28.0	23.6	19.2	18.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)