

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: P196366

Luminaire Tested: **NAV-AF-04-D-UNV-T4FT-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196366
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)
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-T4FT-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 27594.1 lumens
Efficiency: N/A
Efficacy: 107.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G4

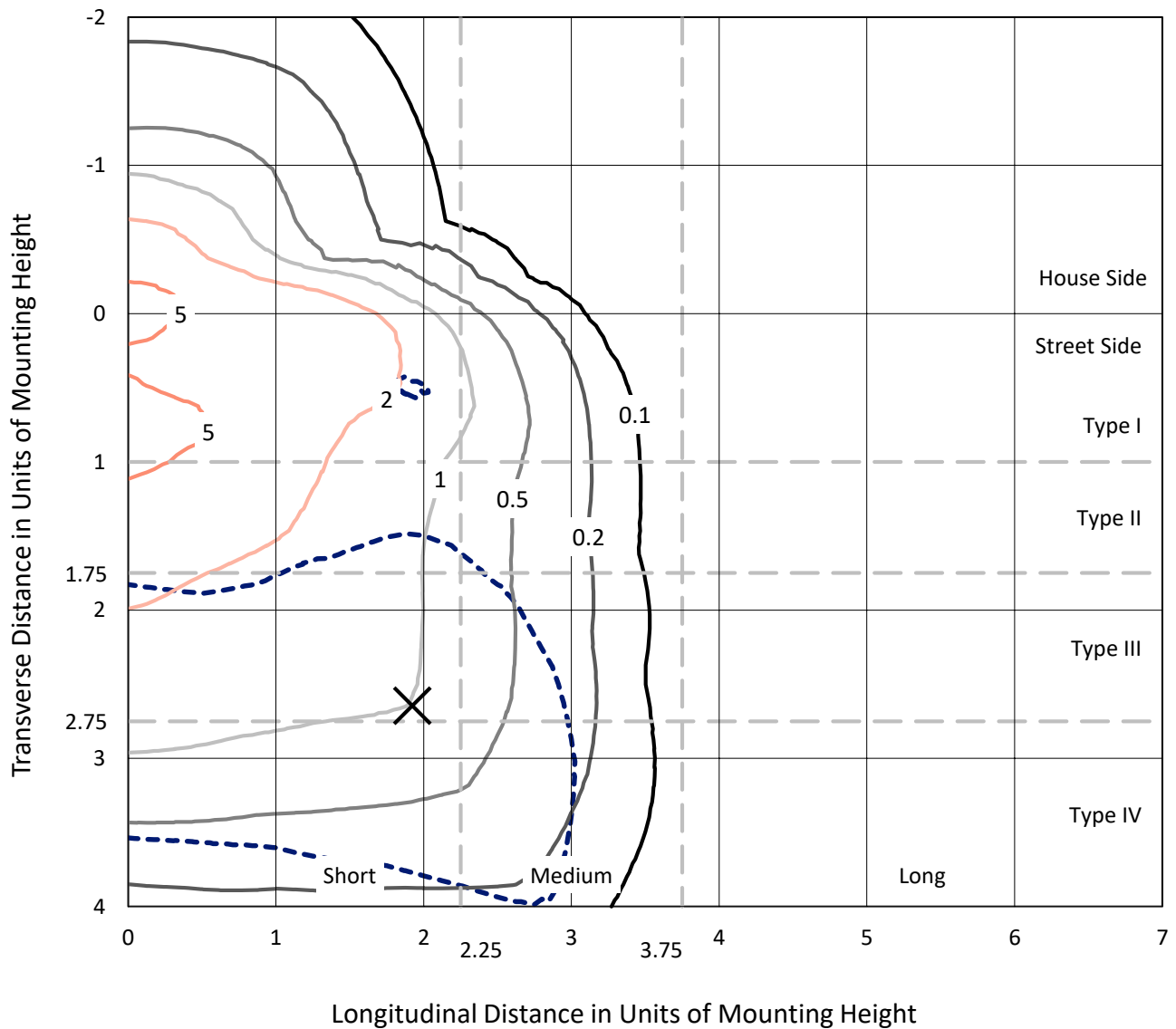
Input Watts (W): 258
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

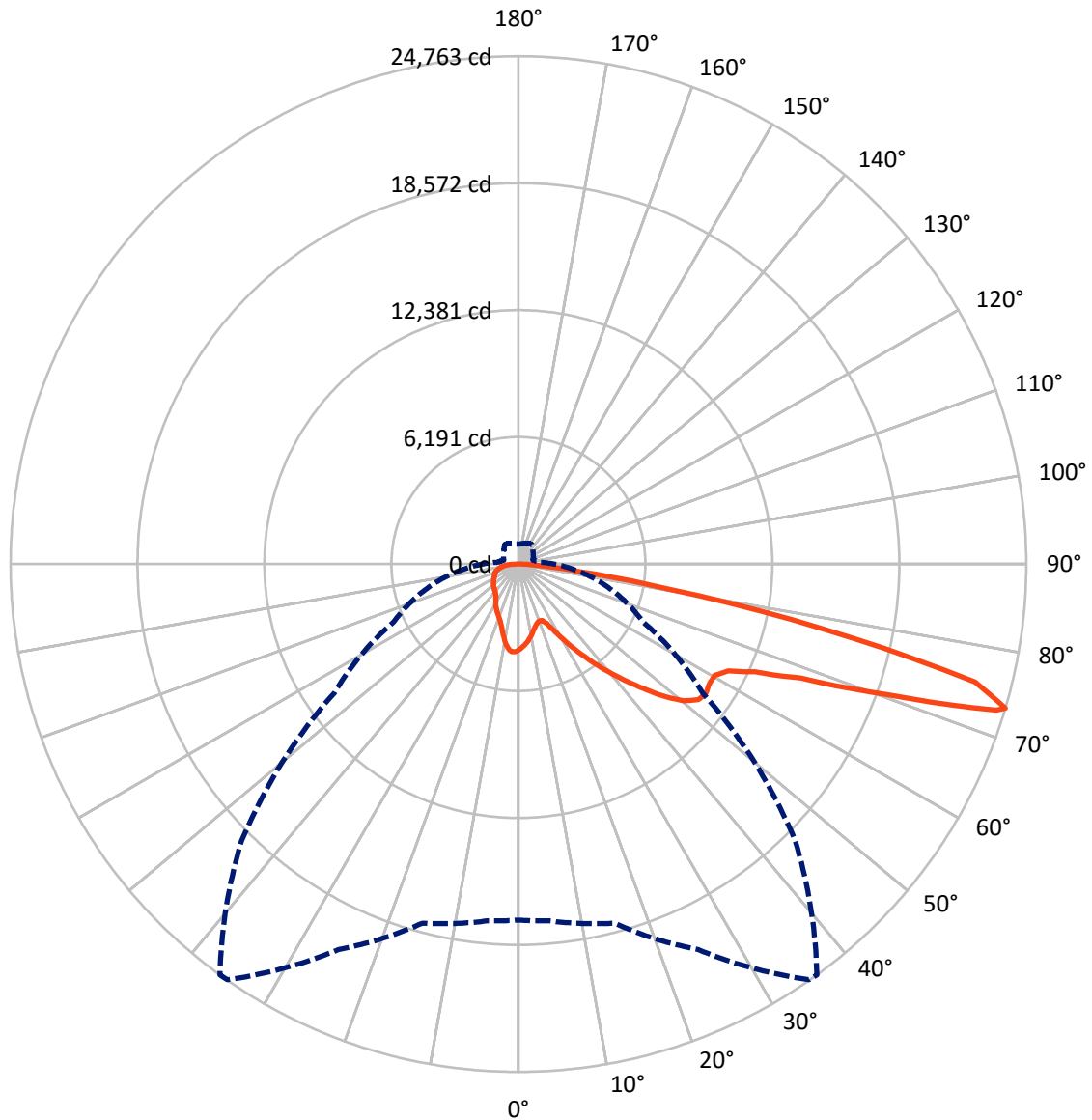
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.7 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5321.0	0.0	5321.0
	% Fixture	19.3	0.0	19.3
Street Side	Lumens	22273.1	0.0	22273.1
	% Fixture	80.7	0.0	80.7
Total	Lumens	27594.1	0.0	27594.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	379.6	1.4
10°-20°	953.5	3.5
20°-30°	1528.7	5.5
30°-40°	2528.5	9.2
40°-50°	3912.6	14.2
50°-60°	5237.8	19.0
60°-70°	6842.3	24.8
70°-80°	5588.9	20.3
80°-90°	622.1	2.3
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°	27594.1	100.0
0°-180°	27594.1	100.0



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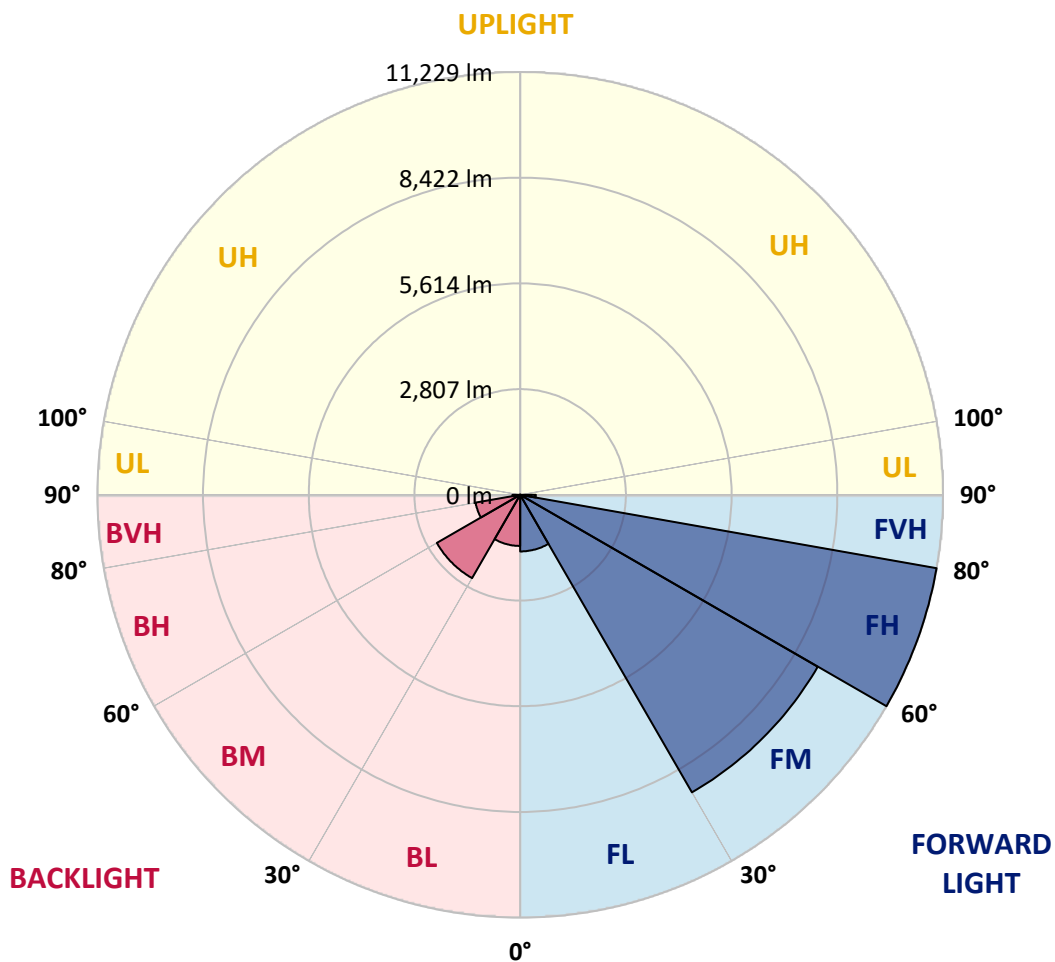
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1503.6	5.4			
FM (30°-60°)	9123.6	33.1			
FH (60°-80°)	11228.8	40.7			G4/12000
FVH (80°-90°)	417.2	1.5			G3/500
BL (0°-30°)	1358.2	4.9	B3/2500		
BM (30°-60°)	2555.4	9.3	B3/5000		
BH (60°-80°)	1202.4	4.4	B3/2500		G3/2500
BVH (80°-90°)	204.9	0.7			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7
2.5°	4020.2	4030.6	4032.5	4044.7	4044.7	4042.9	4048.2	4069.3	4079.7	4104.3	4125.4
5°	3822.1	3834.3	3839.5	3860.6	3886.9	3888.6	3908.0	3948.3	3986.8	4041.2	4086.8
7.5°	3599.4	3613.4	3627.5	3671.3	3709.8	3713.3	3750.1	3815.0	3865.8	3932.5	4014.9
10°	3383.7	3387.2	3401.3	3457.4	3508.2	3513.4	3566.1	3639.7	3708.1	3801.0	3894.0
12.5°	3206.6	3217.2	3213.7	3255.7	3299.6	3303.1	3373.2	3466.2	3566.1	3671.3	3781.7
15°	3145.3	3143.5	3106.7	3105.0	3124.3	3127.8	3196.1	3304.8	3417.1	3546.8	3688.8
17.5°	3187.4	3173.4	3076.9	3017.3	3005.0	3008.5	3059.3	3178.6	3297.8	3446.8	3616.9
20°	3418.8	3364.5	3138.3	2994.5	2954.2	2954.2	2984.0	3080.4	3212.0	3385.5	3599.4
22.5°	3967.5	3883.4	3401.3	3145.3	3003.3	2989.3	2966.5	3040.1	3185.6	3394.3	3671.3
25°	4658.3	4618.0	3883.4	3546.8	3254.0	3208.4	3057.6	3083.9	3240.0	3489.0	3867.7
27.5°	5298.3	5228.1	4516.3	4130.6	3716.9	3646.7	3327.7	3220.7	3369.7	3664.2	4151.6
30°	5671.8	5624.4	5166.8	4798.6	4305.9	4216.5	3758.9	3490.7	3601.1	3953.5	4554.9
32.5°	6078.5	6050.4	5819.0	5484.1	4944.1	4840.7	4316.4	3930.8	3955.2	4337.5	5040.6
35°	6472.9	6509.8	6378.3	6132.8	5631.3	5535.0	5065.0	4505.8	4391.8	4768.8	5559.5
37.5°	6946.3	6955.0	6872.7	6713.1	6353.8	6274.8	5887.4	5119.5	4867.0	5228.1	6060.9
40°	7891.2	7752.7	7430.2	7304.0	7090.1	7041.0	6599.2	5682.2	5308.8	5699.8	6534.3
42.5°	8913.4	8697.7	8192.8	7986.0	7900.0	7854.5	7191.8	6057.4	5722.6	6171.4	6998.9
45°	9737.5	9562.1	9067.7	8811.7	8822.2	8748.6	7709.0	6392.3	6171.4	6644.8	7517.9
47.5°	10549.2	10256.4	9702.4	9665.6	9788.3	9679.6	8203.3	6727.1	6639.5	7160.2	8036.8
50°	10601.8	10335.3	10110.8	10405.5	10615.8	10480.8	8652.2	7165.5	7125.2	7784.3	8706.5
52.5°	9961.9	9923.3	10265.2	10761.3	11110.3	10989.3	9018.6	7616.1	7621.3	8564.6	9521.8
55°	9728.7	9679.6	10089.9	10700.0	11171.5	11099.7	9292.1	8124.5	8171.8	9511.3	10396.7
57.5°	10121.4	9998.6	10079.3	10584.3	11027.8	10985.8	9576.1	8689.0	8774.9	10601.8	11204.9
60°	11339.9	11089.2	10661.4	10756.1	11033.0	11008.6	9982.9	9318.5	9462.2	11737.8	11716.9
62.5°	13165.0	12881.0	12009.6	11588.9	11527.5	11480.2	10654.3	10091.6	10163.5	12558.4	11418.8
65°	15167.2	14862.1	13826.0	13136.9	12775.8	12674.2	11737.8	11024.3	10573.7	12556.6	10258.2
67.5°	17414.8	17092.3	16059.6	15402.2	15011.2	14837.6	13496.4	11778.3	10440.5	11494.2	8208.7
70°	19716.9	19410.0	18936.7	19166.3	19338.2	19073.4	16266.5	12028.9	9483.3	9011.6	5512.2
72.5°	18494.8	18470.3	18829.7	21007.2	24319.1	24371.7	19033.1	11320.6	7326.8	5356.2	2938.4
73°	17360.5	17463.9	18130.2	20735.4	24745.1	24762.7	19087.4	10954.2	6727.1	4614.5	2580.8
75°	8994.1	9695.3	12167.4	16813.5	22913.0	22995.4	16825.8	8292.8	4009.7	2563.2	1739.2
77.5°	2408.9	2377.3	3920.3	8191.1	15275.9	15167.2	10631.6	4014.9	1921.5	1607.7	1220.3
80°	825.7	836.3	1334.2	2996.2	7130.4	7384.6	4614.5	1751.5	1264.1	1120.3	864.4
82.5°	420.7	434.8	697.8	1274.6	2982.2	2919.1	1485.0	1030.9	846.8	680.3	483.9
85°	224.4	231.4	383.9	660.9	1094.0	1106.3	522.4	550.6	538.3	385.8	238.4
87.5°	110.5	114.0	184.1	291.0	405.0	391.0	182.3	238.4	264.7	217.4	131.4
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°	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7	4179.7
2.5°	4151.6	4151.6	4174.5	4213.0	4241.1	4267.3	4284.9	4313.0	4328.7	4327.0	4325.2
5°	4123.6	4141.1	4186.7	4234.1	4265.6	4286.7	4286.7	4299.0	4299.0	4293.6	4286.7
7.5°	4058.8	4088.5	4155.1	4197.3	4206.0	4183.3	4137.6	4102.5	4058.8	4036.0	4027.2
10°	3955.2	3993.9	4078.0	4097.3	4051.7	3971.1	3860.6	3765.9	3681.8	3643.2	3631.0
12.5°	3853.6	3904.4	3983.4	3953.5	3844.9	3687.0	3517.0	3387.2	3292.6	3255.7	3243.5
15°	3769.5	3830.8	3892.1	3799.2	3609.9	3390.8	3203.2	3082.2	3010.3	2982.2	2975.3
17.5°	3713.3	3785.2	3806.3	3632.7	3369.7	3124.3	2957.7	2878.8	2847.3	2835.0	2831.4
20°	3716.9	3797.5	3746.7	3471.4	3138.3	2891.1	2780.6	2757.9	2757.9	2757.9	2756.0
22.5°	3813.3	3883.4	3722.1	3320.6	2915.6	2694.8	2647.4	2666.6	2680.6	2680.6	2678.9
25°	4013.1	4051.7	3739.6	3175.1	2707.0	2524.6	2526.4	2563.2	2575.5	2575.5	2572.0
27.5°	4318.2	4286.7	3771.2	3013.8	2501.8	2370.4	2394.9	2428.2	2437.0	2431.8	2430.0
30°	4700.5	4574.2	3797.5	2824.5	2309.0	2226.6	2247.6	2267.0	2259.9	2247.6	2245.9
32.5°	5128.2	4867.0	3781.7	2612.3	2139.0	2077.6	2089.9	2100.3	2089.9	2060.0	2060.0
35°	5552.5	5131.7	3695.8	2380.9	2004.0	1933.8	1932.0	1965.4	1963.7	1928.6	1930.3
37.5°	5924.2	5340.3	3529.3	2168.8	1888.3	1828.6	1835.6	1856.7	1867.2	1819.8	1814.6
40°	6248.5	5484.1	3294.3	1988.2	1795.3	1798.9	1779.5	1746.2	1733.9	1712.9	1709.4
42.5°	6553.5	5584.1	3045.3	1837.4	1748.0	1788.3	1723.5	1644.5	1611.2	1630.5	1642.8
45°	6853.4	5696.2	2805.1	1712.9	1688.4	1756.7	1667.3	1579.6	1541.1	1549.9	1562.1
47.5°	7219.8	5852.3	2515.8	1579.6	1597.2	1698.9	1632.2	1537.6	1479.7	1444.7	1434.2
50°	7701.9	6078.5	2140.7	1435.9	1500.8	1635.8	1602.5	1476.2	1413.1	1342.9	1325.4
52.5°	8305.0	6292.4	1762.0	1320.2	1421.9	1581.4	1553.4	1423.6	1346.5	1262.3	1248.3
55°	8906.4	6322.1	1435.9	1220.3	1332.5	1507.8	1493.7	1381.6	1272.9	1204.4	1190.4
57.5°	9327.2	6039.9	1216.7	1136.1	1246.6	1416.6	1439.4	1330.7	1211.5	1158.9	1150.1
60°	9334.2	5364.9	1083.5	1080.0	1181.7	1337.7	1383.3	1271.1	1172.9	1137.8	1130.9
62.5°	8592.6	4323.5	997.6	1037.9	1134.4	1272.9	1341.2	1237.8	1164.1	1150.1	1143.1
65°	7202.3	3194.4	929.2	999.3	1090.5	1218.5	1306.2	1227.2	1160.6	1155.4	1150.1
67.5°	5317.5	2189.8	871.3	950.2	1041.5	1162.4	1272.9	1211.5	1139.6	1160.6	1153.6
70°	3345.2	1462.2	817.0	894.2	976.5	1097.5	1229.0	1183.5	1113.3	1101.0	1078.2
72.5°	1888.3	1057.2	752.2	822.2	892.4	1011.6	1169.4	1136.1	1053.7	1004.6	981.8
73°	1705.9	1001.1	736.3	804.8	873.1	994.1	1155.4	1122.1	1036.1	981.8	960.8
75°	1248.3	818.8	664.5	732.8	792.5	913.4	1088.7	1051.9	959.0	894.2	880.1
77.5°	904.7	631.2	571.5	632.9	685.5	801.3	988.8	946.7	855.6	820.5	806.5
80°	652.2	478.6	473.4	533.0	578.6	696.0	881.9	838.0	750.3	853.9	831.0
82.5°	389.2	306.8	347.2	413.8	461.1	583.8	766.2	715.3	631.2	638.2	543.5
85°	185.9	173.6	215.6	271.8	305.0	399.8	638.2	597.8	504.9	413.8	405.0
87.5°	82.4	78.9	103.4	121.0	163.1	240.2	436.6	387.5	366.4	219.1	171.9
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)