

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: P196336

Luminaire Tested: **NAV-AF-04-D-UNV-T3R**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196336  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)  
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-T3R  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 25384.6 lumens  
Efficiency: N/A  
Efficacy: 112.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Medium - Full Cutoff  
BUG Rating: B3 - U0 - G4

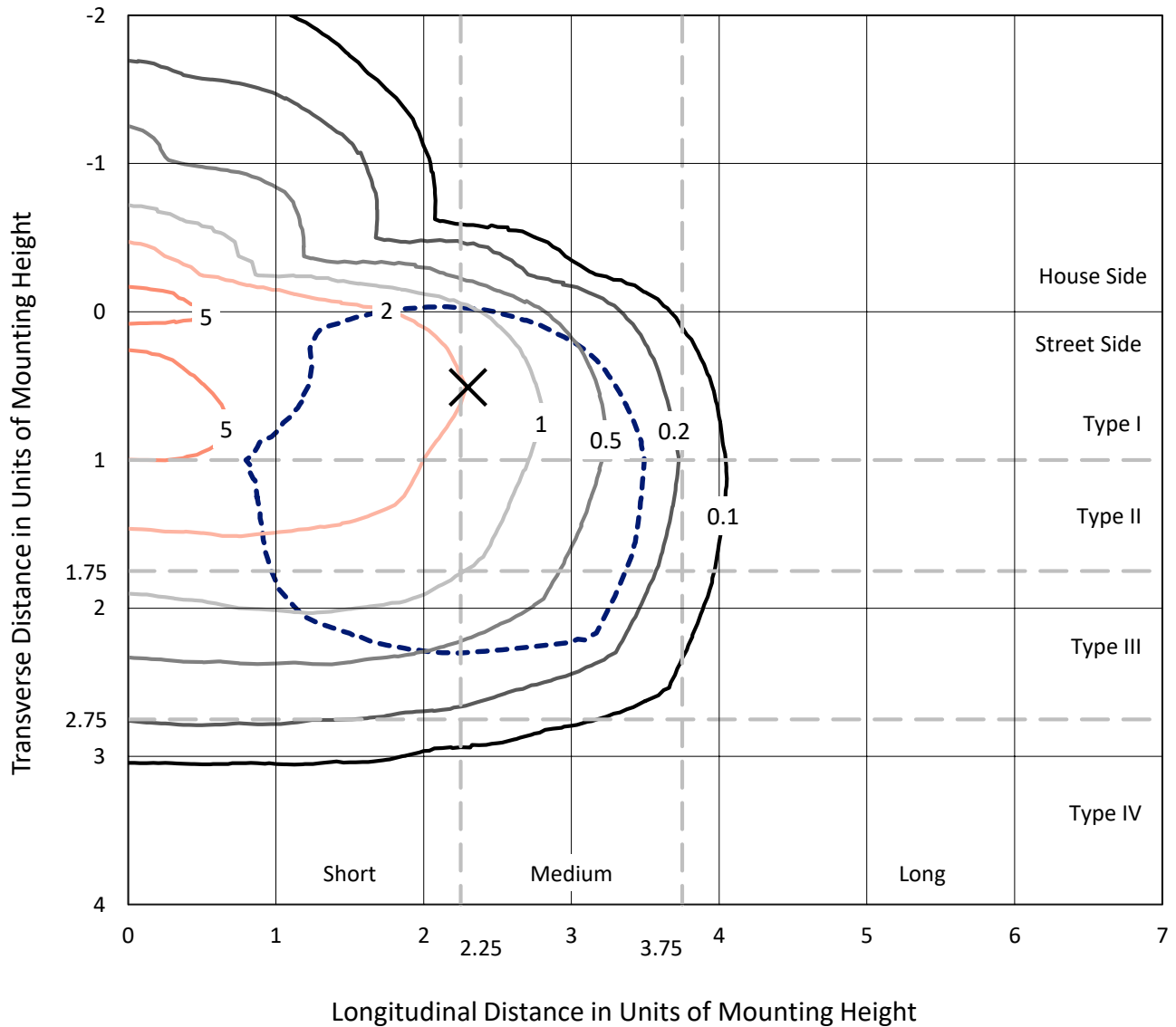
Input Watts (W): 225  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

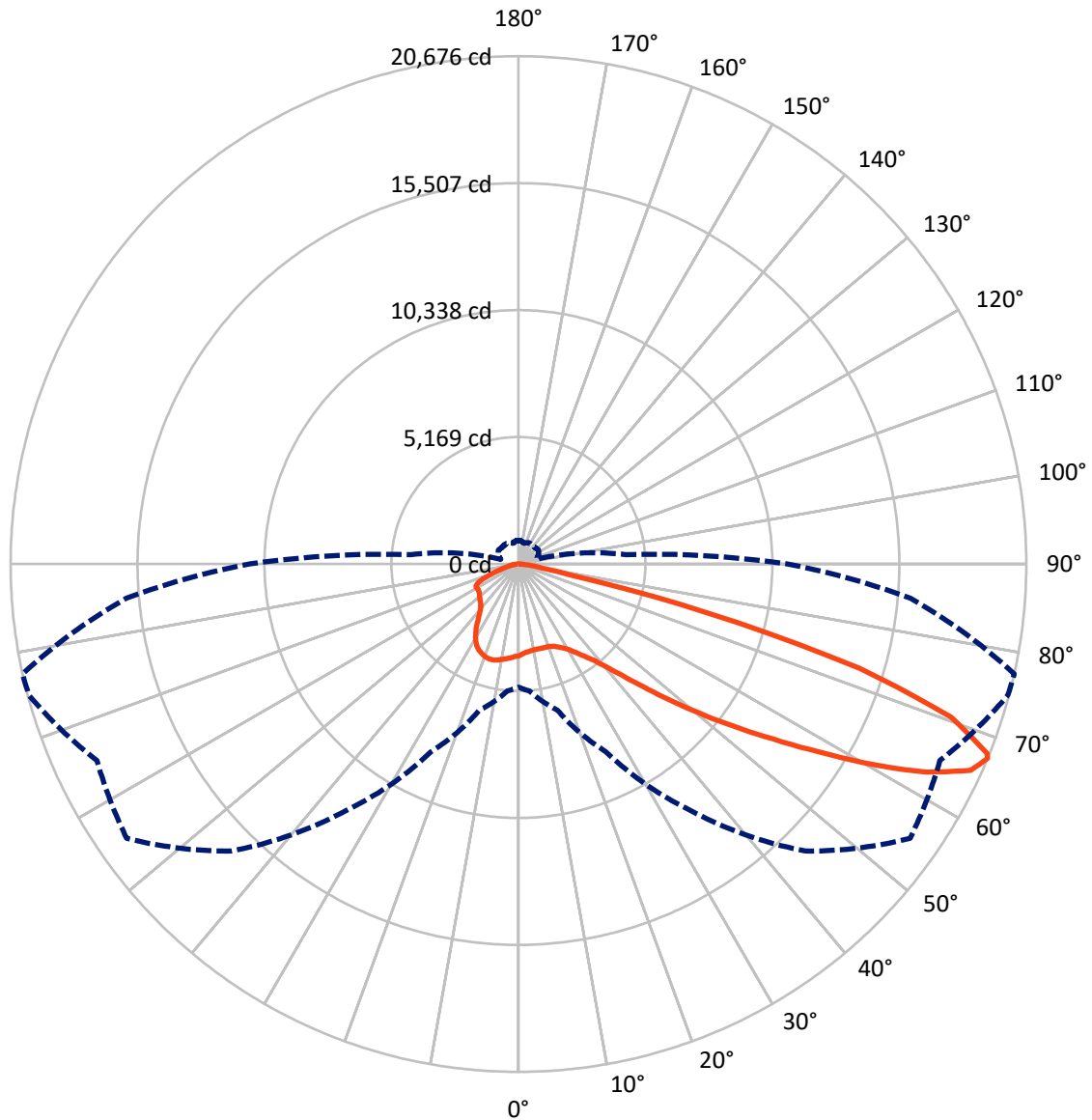
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.2 fc  
 Type III - Medium - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral    - - - Horizontal Cone Through 67-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4362.3	0.0	4362.3
	% Fixture	17.2	0.0	17.2
<b>Street Side</b>	Lumens	21022.2	0.0	21022.2
	% Fixture	82.8	0.0	82.8
<b>Total</b>	Lumens	25384.6	0.0	25384.6
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	332.7	1.3
10°-20°	921.5	3.6
20°-30°	1565.7	6.2
30°-40°	2504.7	9.9
40°-50°	3856.0	15.2
50°-60°	5349.9	21.1
60°-70°	7136.3	28.1
70°-80°	3396.2	13.4
80°-90°	321.6	1.3
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°	25384.6	100.0
0°-180°	25384.6	100.0



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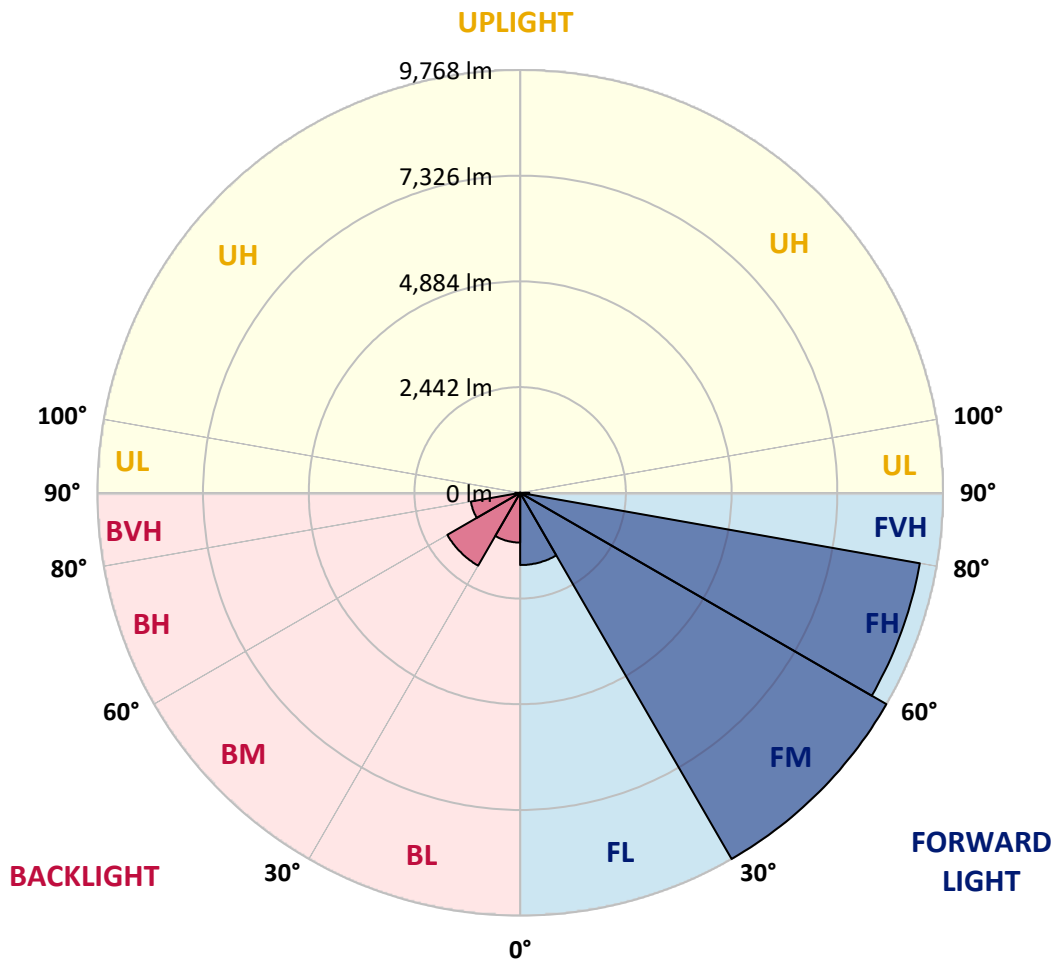
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1669.3	6.6			
FM	(30°-60°)	9768.2	38.5			
FH	(60°-80°)	9375.9	36.9			G4/12000
FVH	(80°-90°)	208.9	0.8			G2/225
BL	(0°-30°)	1150.6	4.5	B3/2500		
BM	(30°-60°)	1942.4	7.7	B2/2500		
BH	(60°-80°)	1156.7	4.6	B3/2500		G3/2500
BVH	(80°-90°)	112.7	0.4			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 III Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9
2.5°	3350.0	3365.6	3367.2	3412.7	3433.1	3484.9	3541.4	3591.6	3635.5	3651.2	3679.5
5°	3014.1	3014.1	3018.8	3048.7	3106.7	3189.9	3307.6	3436.2	3571.2	3604.2	3687.3
7.5°	2838.4	2841.6	2844.7	2874.5	2920.0	2993.8	3111.4	3287.2	3511.6	3566.5	3712.4
10°	2854.1	2849.4	2833.7	2827.4	2846.3	2893.3	2995.3	3175.8	3461.4	3546.1	3757.9
12.5°	3100.5	3091.1	3039.3	2964.0	2895.0	2877.7	2948.2	3119.3	3437.8	3546.1	3834.7
15°	3522.5	3528.8	3426.8	3270.0	3089.5	2967.1	2957.7	3098.9	3430.0	3555.5	3924.2
17.5°	4071.8	4074.8	3933.7	3706.2	3406.4	3153.9	3022.0	3098.9	3430.0	3564.9	4010.5
20°	4655.4	4633.5	4473.4	4187.9	3798.7	3412.7	3139.6	3117.7	3439.4	3579.0	4092.1
22.5°	5156.0	5135.5	4967.7	4667.9	4222.3	3718.6	3298.2	3180.5	3491.1	3637.1	4206.7
25°	5593.7	5606.3	5443.1	5105.8	4644.4	4063.9	3535.1	3324.8	3599.5	3742.3	4347.8
27.5°	6125.6	6102.1	5913.8	5592.2	5079.1	4421.6	3831.7	3506.9	3728.0	3869.3	4520.4
30°	6740.7	6729.7	6475.5	6144.5	5557.6	4821.7	4125.0	3703.0	3896.0	4043.5	4737.0
32.5°	7487.6	7486.0	7212.9	6806.6	6095.8	5273.6	4471.8	3971.3	4140.8	4289.8	5024.1
35°	8333.3	8331.7	8049.3	7512.7	6715.6	5774.1	4879.8	4297.6	4443.6	4600.5	5366.2
37.5°	8920.1	8910.7	8763.2	8242.3	7401.3	6356.3	5389.7	4737.0	4787.2	4962.9	5778.9
40°	9033.1	9089.5	9216.7	8909.1	8149.7	7002.7	5901.2	5209.3	5256.3	5482.3	6298.2
42.5°	8910.7	8984.5	9406.5	9492.8	8898.1	7785.7	6541.5	5863.6	5923.2	6204.1	6908.6
45°	8804.0	8868.4	9397.1	9816.0	9637.2	8639.2	7340.1	6662.3	6775.2	7123.5	7605.2
47.5°	8621.9	8681.6	9212.0	9874.1	10059.3	9461.5	8301.9	7622.5	7817.1	8239.2	8399.1
50°	8612.5	8639.2	8959.3	9679.6	10205.2	10085.9	9367.3	8745.9	9044.1	9530.5	9277.9
52.5°	8374.1	8560.8	8851.1	9368.9	10208.3	10450.0	10417.0	9977.7	10437.4	10975.5	10241.3
55°	6914.8	7129.9	8490.2	9216.7	10189.5	10762.2	11375.7	11287.9	12006.5	12572.9	11320.8
57.5°	6456.7	6547.7	7448.3	9262.2	10346.4	11278.4	12334.4	12695.2	13801.4	14419.7	12615.2
60°	6331.1	6426.9	7239.6	9284.1	10771.6	12218.3	13635.1	14284.7	15911.9	16567.7	14085.4
62.5°	6191.5	6315.5	7255.4	9304.6	11518.5	13608.5	15361.1	16009.2	18078.7	18663.9	15463.1
65°	5783.6	5948.4	6965.1	9175.9	12336.0	15353.3	17642.5	17807.3	19869.0	20240.9	16294.7
67°	5010.0	5190.5	6168.0	8432.2	12260.7	16528.5	19467.4	18932.3	20630.1	20675.5	16024.8
67.5°	4765.2	4952.0	5898.1	8123.0	12045.7	16682.3	19790.6	19087.6	20623.7	20573.5	15773.8
70°	3208.7	3419.0	4176.8	5964.0	9662.3	15525.8	19712.2	18609.1	19271.2	18695.3	13552.0
72.5°	1592.6	1598.9	2083.8	3266.8	5854.1	11135.6	16443.7	15919.7	15621.6	14534.2	9944.7
75°	767.3	781.4	983.8	1443.5	2468.2	5749.1	11214.1	10741.8	9146.1	7919.1	4977.1
77.5°	585.2	599.3	764.1	939.9	1029.3	1875.1	5554.5	4489.1	2650.2	2116.7	1402.8
80°	451.9	478.5	644.9	721.8	681.0	751.6	1746.4	1374.5	1030.8	946.1	695.1
82.5°	353.0	368.8	547.6	547.6	470.8	503.7	812.7	793.9	640.2	577.5	373.5
85°	249.5	280.9	440.9	408.0	309.1	312.2	486.4	466.1	329.5	265.1	145.9
87.5°	111.4	142.8	313.8	266.8	164.8	127.1	199.3	171.0	130.2	100.5	67.5
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°	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9	3735.9
2.5°	3710.9	3735.9	3775.2	3798.7	3830.0	3842.6	3855.2	3877.2	3894.4	3889.7	3881.9
5°	3745.3	3787.7	3836.4	3852.0	3852.0	3836.4	3827.0	3828.5	3823.8	3820.6	3811.2
7.5°	3795.6	3853.7	3888.1	3872.5	3823.8	3762.6	3704.5	3670.0	3637.1	3616.6	3623.0
10°	3866.1	3930.5	3932.0	3863.1	3747.0	3613.6	3499.0	3425.2	3354.7	3323.3	3332.7
12.5°	3968.1	4032.5	3977.5	3828.5	3624.5	3415.8	3205.6	3053.4	2916.8	2883.9	2874.5
15°	4078.0	4128.2	4005.8	3754.7	3448.8	3105.2	2752.1	2524.6	2372.4	2345.7	2336.3
17.5°	4173.7	4202.0	3991.7	3623.0	3171.0	2629.7	2218.7	2064.9	2033.5	2049.2	2049.2
20°	4258.4	4249.0	3930.5	3419.0	2733.3	2102.6	1864.0	1862.5	1904.8	1944.1	1947.2
22.5°	4365.1	4291.4	3833.2	3116.1	2210.8	1754.3	1713.4	1754.3	1801.3	1845.2	1849.9
25°	4492.2	4338.4	3703.0	2684.6	1777.8	1592.6	1609.8	1644.4	1674.2	1708.7	1710.3
27.5°	4619.3	4374.5	3519.4	2177.9	1542.4	1489.0	1507.8	1521.9	1529.8	1551.8	1551.8
30°	4766.8	4402.8	3254.2	1744.8	1434.1	1398.1	1387.0	1380.8	1387.0	1416.9	1418.4
32.5°	4952.0	4453.0	2891.8	1496.9	1384.0	1333.7	1277.3	1245.9	1267.8	1321.1	1330.6
35°	5162.2	4512.6	2457.1	1398.1	1366.7	1302.3	1198.8	1150.1	1158.0	1206.6	1214.4
37.5°	5425.8	4589.5	2028.8	1374.5	1384.0	1299.1	1162.7	1093.6	1059.2	1060.7	1059.2
40°	5763.2	4666.4	1689.9	1380.8	1421.6	1307.0	1145.4	1037.2	964.9	968.1	974.4
42.5°	6116.2	4716.6	1474.9	1399.6	1467.1	1318.0	1139.2	982.2	919.4	972.8	1021.4
45°	6528.9	4702.5	1363.5	1416.9	1501.6	1322.7	1115.6	976.0	924.1	1084.2	1175.3
47.5°	7002.7	4641.3	1300.8	1424.7	1511.0	1321.1	1098.3	996.4	963.4	1241.1	1344.7
50°	7517.4	4545.6	1250.6	1412.2	1506.3	1314.9	1117.2	1021.4	979.1	1275.6	1355.7
52.5°	8080.7	4457.7	1198.8	1384.0	1482.8	1296.1	1140.7	1010.5	935.2	1175.3	1236.4
55°	8747.6	4437.4	1140.7	1335.3	1443.5	1275.6	1128.1	976.0	886.5	1041.9	1079.5
57.5°	9510.1	4564.4	1065.4	1275.6	1390.2	1234.8	1098.3	957.2	869.3	947.8	968.1
60°	10478.2	4845.3	985.4	1212.9	1324.3	1173.6	1071.6	961.9	874.0	933.5	938.3
62.5°	11234.5	5097.9	913.2	1136.0	1236.4	1099.9	1043.4	966.6	888.1	952.5	944.6
65°	11509.0	4973.9	823.8	1021.4	1112.5	1018.3	1004.2	969.7	888.1	963.4	946.1
67°	10945.8	4382.4	739.0	906.9	994.8	946.1	966.6	957.2	872.4	961.9	932.0
67.5°	10677.5	4173.7	717.1	888.1	963.4	924.1	957.2	950.8	867.7	958.7	924.1
70°	8805.6	2993.8	605.7	745.3	806.5	814.4	899.1	910.0	830.0	900.6	837.9
72.5°	6265.3	1873.4	522.5	577.5	651.2	696.6	820.6	855.2	779.8	783.0	731.2
75°	3100.5	1005.8	466.1	445.6	506.8	580.5	715.5	779.8	706.0	652.7	635.5
77.5°	1046.6	569.6	393.8	359.4	393.8	466.1	593.1	681.0	622.9	552.3	541.3
80°	541.3	414.2	307.5	288.7	310.7	360.9	464.4	566.4	531.9	535.0	440.9
82.5°	337.4	252.7	221.3	219.6	235.4	276.2	342.1	459.7	456.6	390.7	284.0
85°	156.9	145.9	141.2	145.9	150.7	156.9	222.8	328.0	346.8	210.2	186.7
87.5°	65.9	64.3	56.5	61.2	67.5	65.9	89.4	139.6	194.6	131.8	120.8
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)