

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: P195063

Luminaire Tested: **NAV-AF-03-D-UNV-AFL-7060**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195063
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-03-D-UNV-AFL-7060
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18560 lumens
Efficiency: N/A
Efficacy: 111.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B2 - U0 - G2

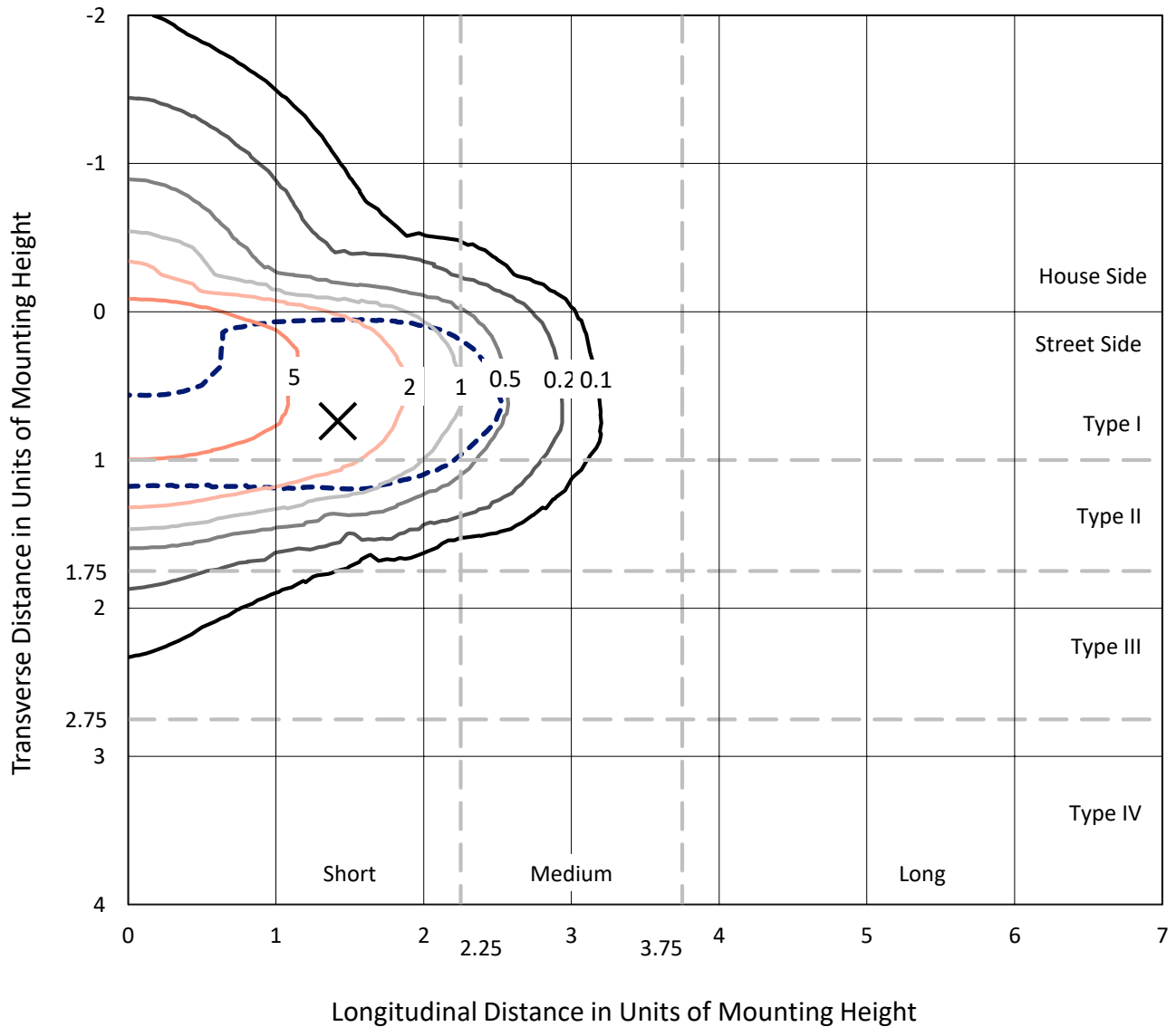
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

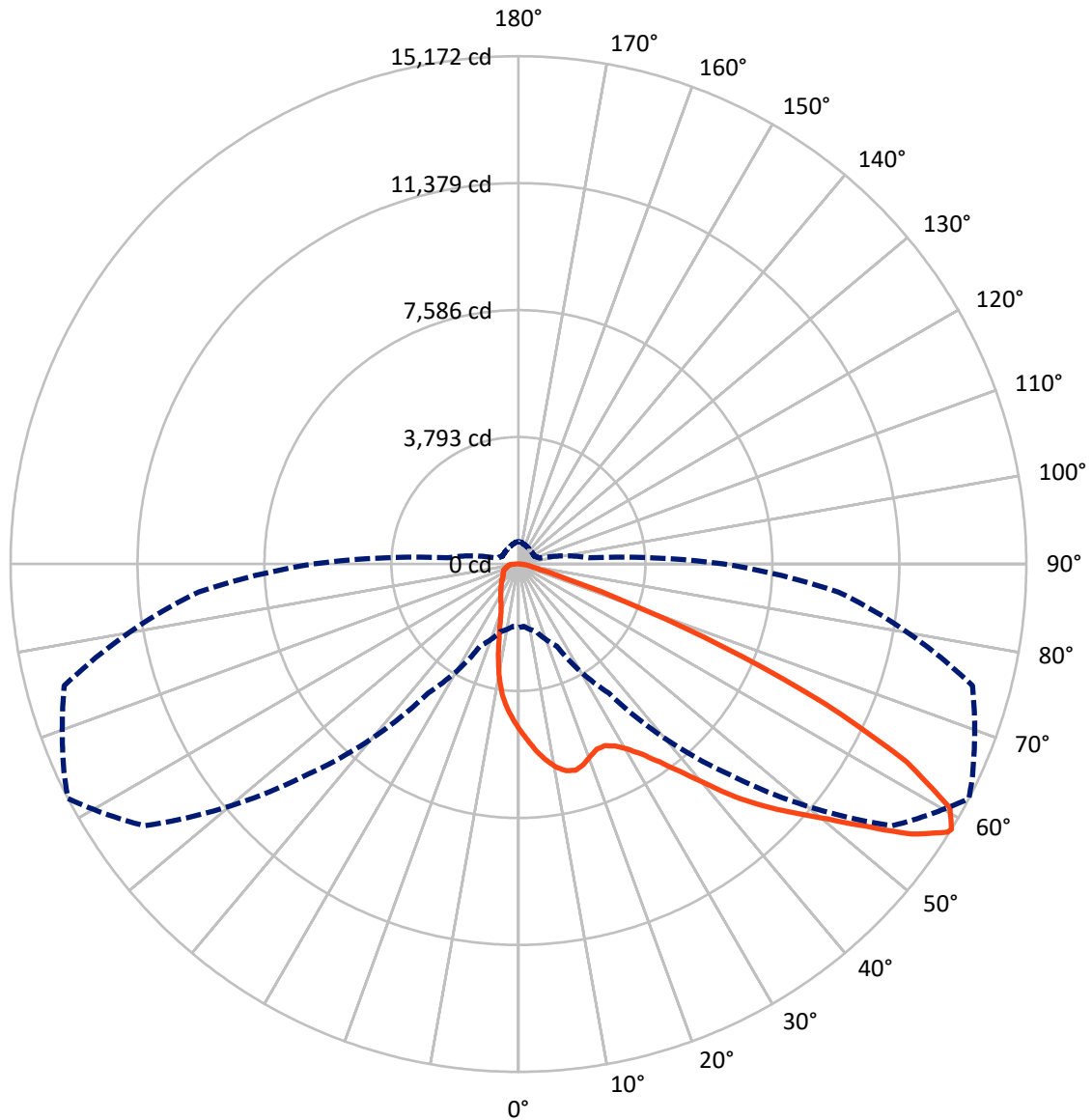
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.3 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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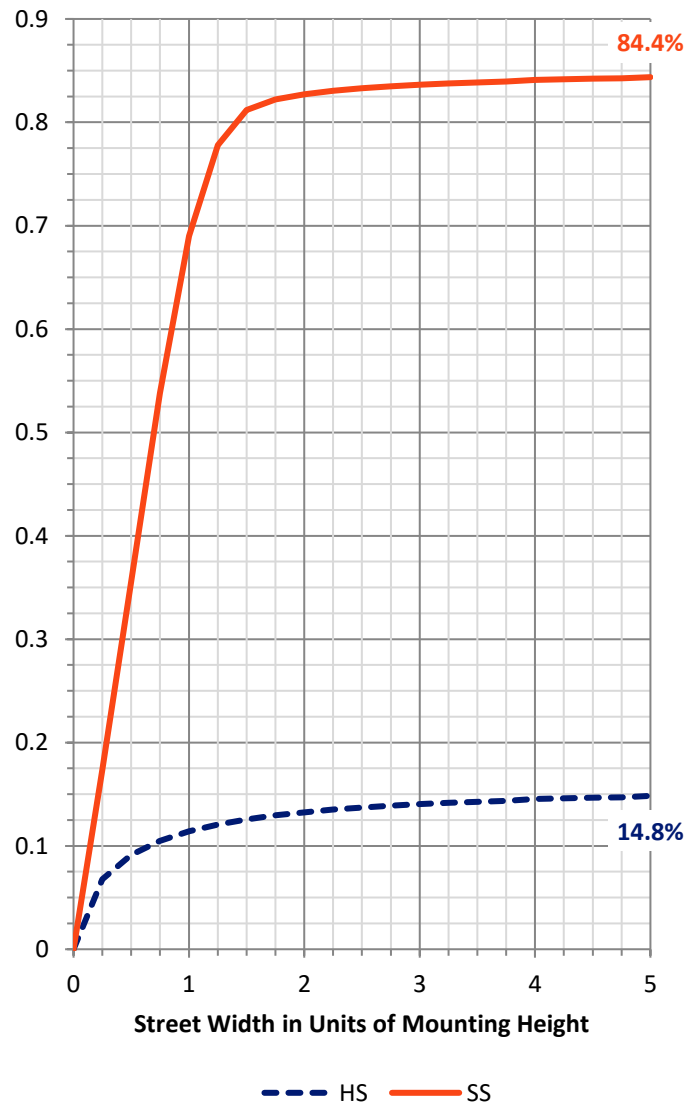
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2849.7	0.0	2849.7
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	15710.3	0.0	15710.3
	% Fixture	84.6	0.0	84.6
Total	Lumens	18560.0	0.0	18560.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	442.9	2.4
10°-20°	1117.8	6.0
20°-30°	1811.6	9.8
30°-40°	2892.4	15.6
40°-50°	4207.0	22.7
50°-60°	4402.3	23.7
60°-70°	2683.8	14.5
70°-80°	750.5	4.0
80°-90°	251.6	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°	18560.0	100.0
0°-180°	18560.0	100.0



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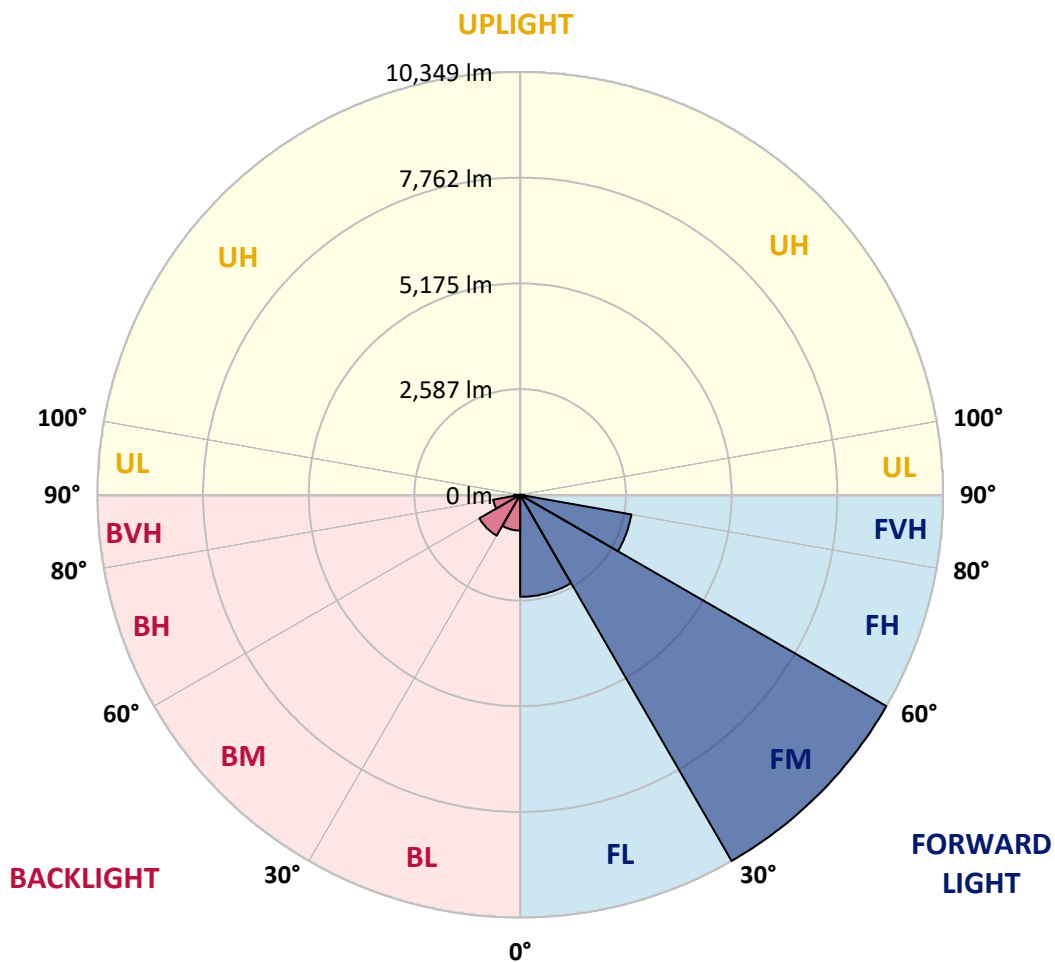
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2496.4	13.5			
FM (30°-60°)	10349.3	55.8			
FH (60°-80°)	2763.5	14.9			G2/5000
FVH (80°-90°)	101.2	0.5			G2/225
BL (0°-30°)	876.0	4.7	B2/1000		
BM (30°-60°)	1152.4	6.2	B2/2500		
BH (60°-80°)	670.9	3.6	B2/1000		G2/1000
BVH (80°-90°)	150.4	0.8			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4
2.5°	5624.7	5621.2	5573.7	5542.3	5505.2	5419.4	5333.5	5269.8	5237.3	5113.2	4992.5
5°	6089.9	6075.9	6049.3	6015.6	5966.9	5859.0	5723.3	5606.1	5559.7	5339.3	5117.8
7.5°	5843.9	5866.0	5948.3	6041.1	6138.6	6145.5	6049.3	5910.1	5859.0	5564.4	5239.6
10°	5163.0	5153.8	5257.0	5437.9	5759.3	6077.1	6236.0	6167.6	6114.2	5777.8	5361.4
12.5°	4956.6	4954.2	4971.6	5018.0	5219.9	5656.0	6188.4	6336.9	6318.4	6004.0	5491.3
15°	5019.2	5021.5	5020.4	5026.2	5081.8	5289.5	5922.8	6393.8	6451.8	6227.9	5623.5
17.5°	5219.9	5211.8	5186.2	5158.4	5166.5	5240.8	5636.3	6296.3	6470.3	6427.4	5734.9
20°	5529.6	5529.6	5461.1	5383.4	5332.4	5348.6	5516.8	6129.3	6384.5	6596.8	5818.4
22.5°	5918.2	5924.0	5823.1	5681.5	5565.5	5521.5	5585.3	6005.2	6280.1	6753.4	5892.7
25°	6400.7	6399.6	6252.2	6049.3	5866.0	5760.4	5759.3	6011.0	6247.6	6936.6	5970.4
27.5°	6998.1	6943.6	6771.9	6483.1	6224.4	6063.2	5990.1	6157.1	6316.0	7161.7	6074.8
30°	7672.1	7616.4	7391.3	7020.1	6669.8	6434.4	6313.7	6410.0	6524.8	7448.2	6232.5
32.5°	8339.0	8351.8	8087.3	7668.6	7218.5	6886.8	6708.1	6767.3	6847.3	7798.5	6446.0
35°	9315.7	9314.6	8968.9	8445.8	7911.0	7451.7	7225.5	7256.8	7329.9	8292.6	6745.2
37.5°	10044.2	10032.6	9809.9	9347.1	8745.0	8194.0	7866.9	7871.6	7934.2	8913.2	7139.6
40°	10118.4	10116.1	10115.0	10048.8	9637.0	9117.4	8707.9	8623.2	8648.7	9572.1	7558.4
42.5°	9551.2	9635.9	9879.5	10253.0	10367.8	10095.2	9707.8	9518.7	9463.0	10328.4	8001.5
45°	8742.7	8785.6	9212.5	10052.3	10735.5	11013.9	10722.8	10323.7	10228.6	11063.8	8362.2
47.5°	8366.9	8348.3	8595.4	9510.6	10699.6	11744.7	11765.6	11111.4	10950.1	11698.3	8669.6
50°	7560.7	7536.3	7848.4	8713.7	10307.5	12107.8	12836.2	11969.7	11671.6	12301.5	8948.0
52.5°	5954.1	5930.9	6349.7	7464.4	9430.6	11972.1	13738.7	13023.0	12514.9	12882.6	9207.9
55°	3874.3	3876.6	4275.7	5425.2	7631.5	11181.0	14162.1	14239.8	13670.3	13463.8	9417.8
57.5°	2133.2	2113.5	2397.7	3104.1	5250.0	9384.2	13809.5	15116.7	14819.8	13962.6	9569.8
58°	1896.6	1873.4	2092.6	2701.6	4707.2	8877.3	13632.0	15172.4	14967.1	14044.9	9591.8
60°	1351.4	1311.9	1278.3	1523.0	2712.0	6400.7	12448.8	14811.7	15010.0	14209.7	9570.9
62.5°	1139.1	1093.9	973.2	963.9	1277.1	3130.8	9844.7	13007.9	13563.5	13830.3	9234.5
65°	1057.9	1012.7	853.7	796.9	866.5	1351.4	6087.5	10044.2	10786.6	12511.5	8387.8
67.5°	999.9	946.5	776.0	701.8	715.7	808.5	2583.3	6568.9	7429.6	9756.5	6729.0
70°	947.7	888.5	714.5	628.7	617.1	614.8	1009.2	3430.0	4259.4	6384.5	4507.6
72.5°	888.5	830.5	660.0	568.4	542.9	498.8	606.7	1417.5	1943.0	3129.6	2065.9
75°	802.7	755.1	599.7	518.5	474.4	404.8	447.7	679.7	837.5	1198.3	959.3
77.5°	706.4	668.1	538.2	476.7	417.6	330.6	342.2	460.5	517.3	675.1	555.6
80°	499.9	513.9	469.8	419.9	367.7	266.8	263.3	337.6	371.2	453.5	373.5
82.5°	344.5	355.0	382.8	331.8	297.0	207.6	193.7	234.3	251.7	273.8	181.0
85°	245.9	239.0	265.6	237.8	218.1	132.2	124.1	148.5	158.9	167.0	87.0
87.5°	149.6	148.5	153.1	123.0	113.7	67.3	61.5	70.8	75.4	73.1	41.8
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4	4955.4
2.5°	4947.3	4890.4	4766.3	4666.6	4558.7	4476.3	4394.0	4347.6	4296.5	4267.5	4264.1
5°	5001.8	4885.8	4621.3	4375.4	4122.5	3895.2	3672.5	3507.8	3373.2	3296.6	3292.0
7.5°	5062.1	4880.0	4471.7	4046.0	3595.9	3148.2	2752.6	2473.1	2293.3	2209.7	2203.9
10°	5108.5	4855.6	4289.6	3627.2	2913.8	2322.3	1962.7	1798.0	1743.4	1729.5	1727.2
12.5°	5164.2	4838.2	4059.9	3090.2	2227.1	1767.8	1658.8	1648.3	1659.9	1666.9	1668.0
15°	5216.4	4804.6	3750.2	2495.1	1743.4	1579.9	1582.2	1604.2	1627.4	1637.9	1639.0
17.5°	5240.8	4722.2	3343.0	1966.2	1525.4	1495.2	1521.9	1550.9	1571.8	1579.9	1579.9
20°	5240.8	4590.0	2870.9	1592.6	1411.7	1417.5	1450.0	1472.0	1476.6	1469.7	1466.2
22.5°	5218.7	4426.5	2411.6	1389.6	1318.9	1340.9	1366.4	1351.4	1296.8	1255.1	1247.0
25°	5199.0	4232.7	1969.6	1265.5	1237.7	1266.7	1256.2	1153.0	1069.5	1026.6	1019.6
27.5°	5166.5	3998.4	1600.8	1163.5	1158.8	1182.0	1078.8	979.0	937.3	914.1	909.4
30°	5158.4	3744.4	1339.8	1073.0	1081.1	1048.6	930.3	897.8	888.5	875.8	870.0
32.5°	5185.1	3490.4	1176.2	998.7	1006.9	900.1	854.9	859.5	858.4	842.1	836.3
35°	5258.2	3243.3	1071.8	931.5	908.3	806.2	812.0	825.9	825.9	806.2	799.2
37.5°	5385.7	3013.6	1005.7	874.6	794.6	757.5	772.5	791.1	791.1	777.2	771.4
40°	5521.5	2789.7	955.8	829.4	722.7	723.8	738.9	752.8	758.6	760.9	756.3
42.5°	5644.4	2557.7	902.5	780.7	690.2	698.3	705.3	715.7	740.1	756.3	754.0
45°	5716.3	2324.6	844.5	720.3	668.1	671.6	669.3	687.9	716.9	741.2	741.2
47.5°	5782.5	2133.2	796.9	660.0	646.1	646.1	639.1	657.7	684.4	713.4	715.7
50°	5845.1	2009.1	763.3	613.6	618.3	614.8	612.5	629.9	665.8	700.6	706.4
52.5°	5908.9	1967.3	733.1	580.0	589.3	584.6	586.9	611.3	651.9	687.9	693.7
55°	5998.2	1994.0	701.8	556.8	561.4	560.3	569.5	597.4	633.3	669.3	671.6
57.5°	6108.4	2091.4	675.1	539.4	534.7	541.7	556.8	583.5	618.3	661.2	664.7
58°	6130.4	2114.6	670.5	534.7	528.9	539.4	554.5	580.0	615.9	661.2	664.7
60°	6164.1	2197.0	658.9	525.5	509.2	527.8	546.3	571.9	611.3	667.0	673.9
62.5°	6001.7	2213.2	655.4	515.0	488.3	511.5	533.6	562.6	606.7	686.7	701.8
65°	5439.1	2046.2	631.0	497.6	470.9	498.8	522.0	555.6	620.6	745.9	752.8
67.5°	4366.1	1699.4	571.9	470.9	451.2	483.7	512.7	555.6	626.4	755.1	759.8
70°	3002.0	1277.1	497.6	441.9	428.0	465.1	509.2	568.4	606.7	714.5	700.6
72.5°	1568.3	888.5	436.1	408.3	400.2	448.9	542.9	555.6	583.5	667.0	653.1
75°	789.9	604.3	384.0	370.0	368.9	443.1	607.8	534.7	559.1	627.5	657.7
77.5°	466.3	473.3	342.2	334.1	339.9	432.7	609.0	513.9	531.3	577.7	610.1
80°	319.0	390.9	309.7	307.4	312.0	397.9	561.4	488.3	498.8	546.3	581.1
82.5°	179.8	215.8	271.4	286.5	284.2	326.0	484.9	444.3	457.0	646.1	683.2
85°	87.0	129.9	227.4	268.0	242.4	216.9	394.4	394.4	397.9	462.8	468.6
87.5°	32.5	58.0	153.1	212.3	169.4	129.9	268.0	279.6	310.9	320.2	327.1
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)