

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: P196973

Luminaire Tested: **NAV-AF-05-D-UNV-AFL-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196973
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-05-D-UNV-AFL-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 80 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16564 lumens
Efficiency: N/A
Efficacy: 102.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B2 - U0 - G2

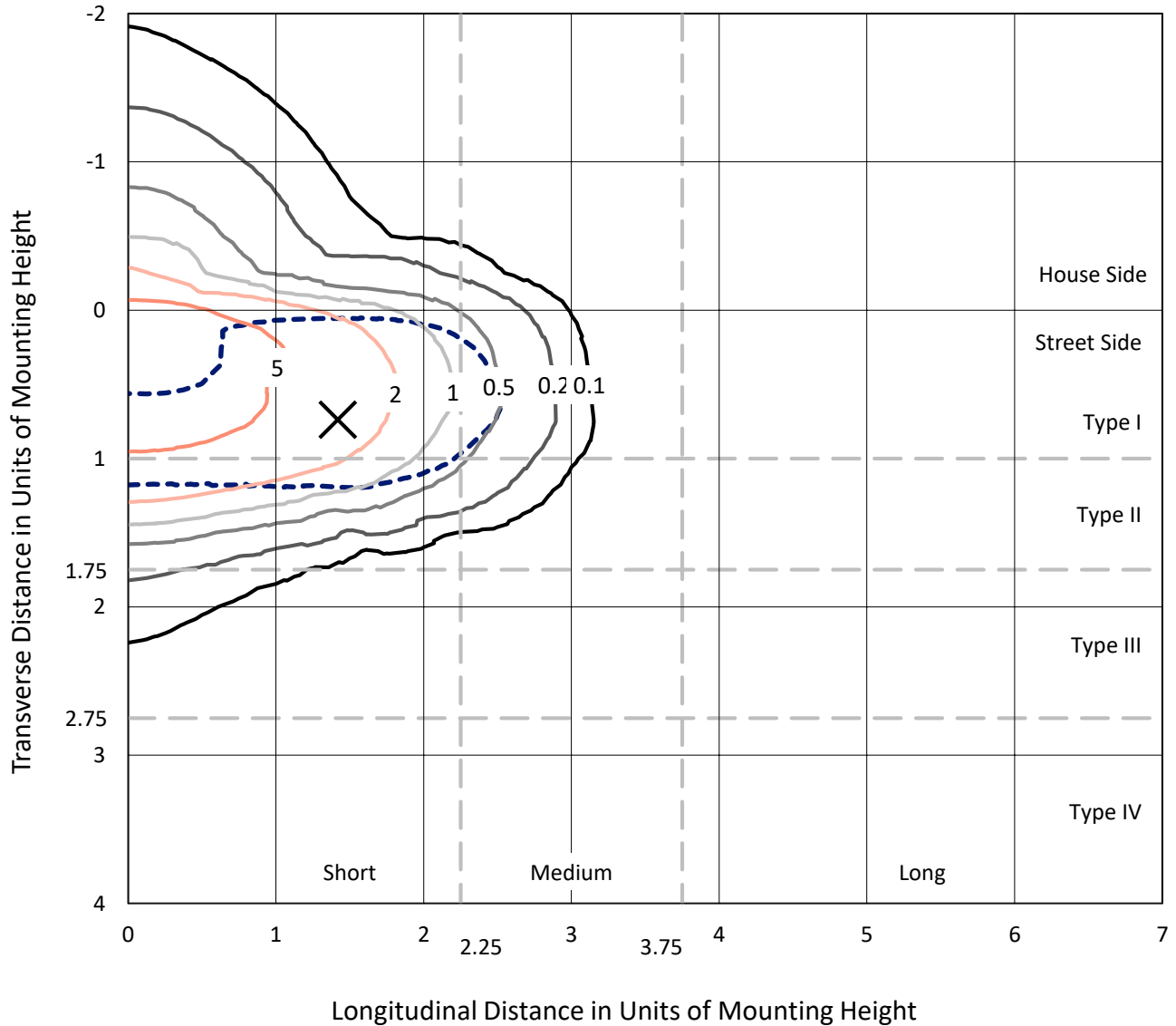
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

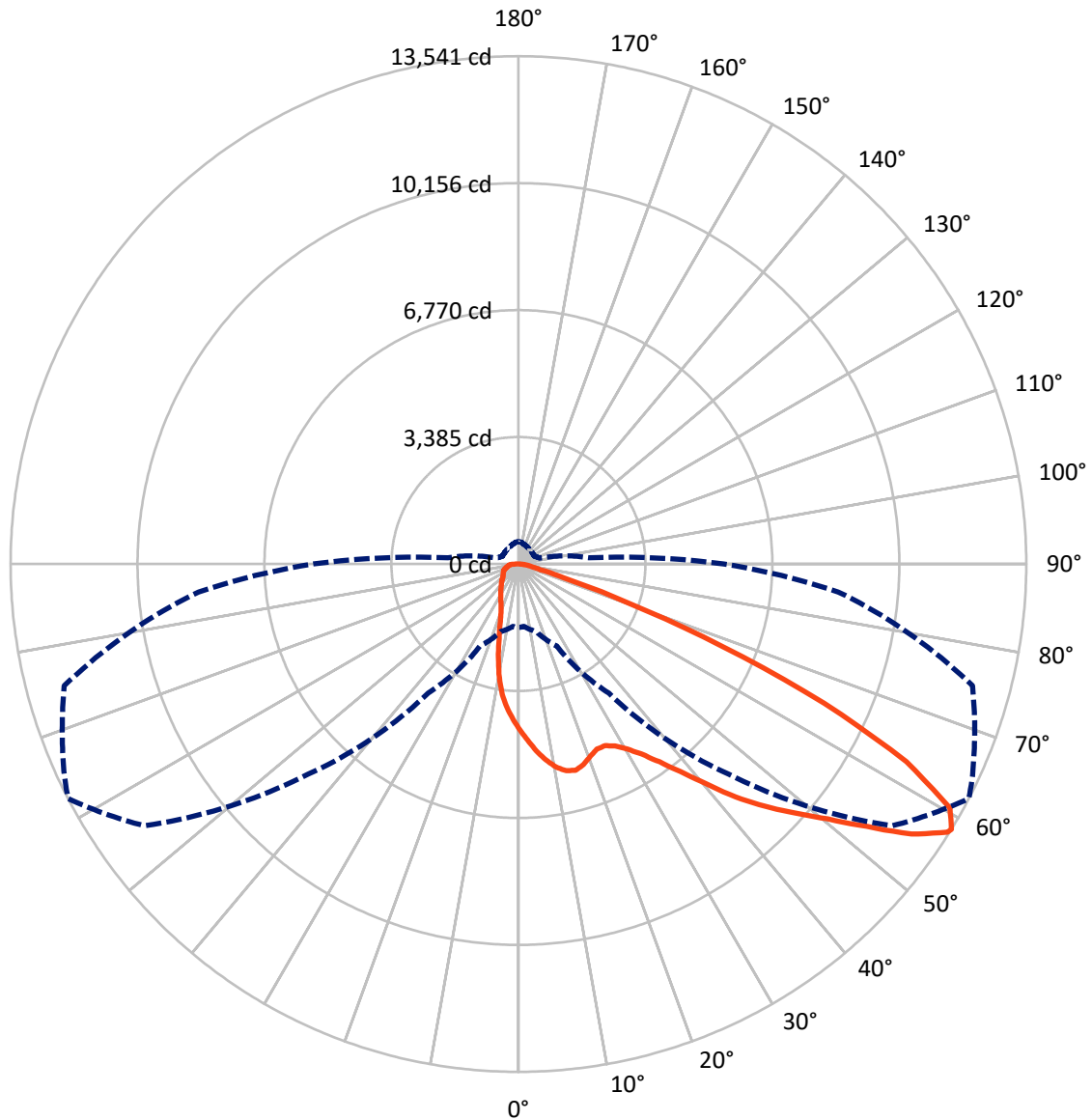
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.3 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	2543.2	0.0	2543.2
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	14020.8	0.0	14020.8
	% Fixture	84.6	0.0	84.6
Total	Lumens	16564.0	0.0	16564.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	395.3	2.4
10°-20°	997.6	6.0
20°-30°	1616.8	9.8
30°-40°	2581.3	15.6
40°-50°	3754.6	22.7
50°-60°	3928.9	23.7
60°-70°	2395.2	14.5
70°-80°	669.8	4.0
80°-90°	224.5	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°	16564.0	100.0
0°-180°	16564.0	100.0

Coefficient of Utilization



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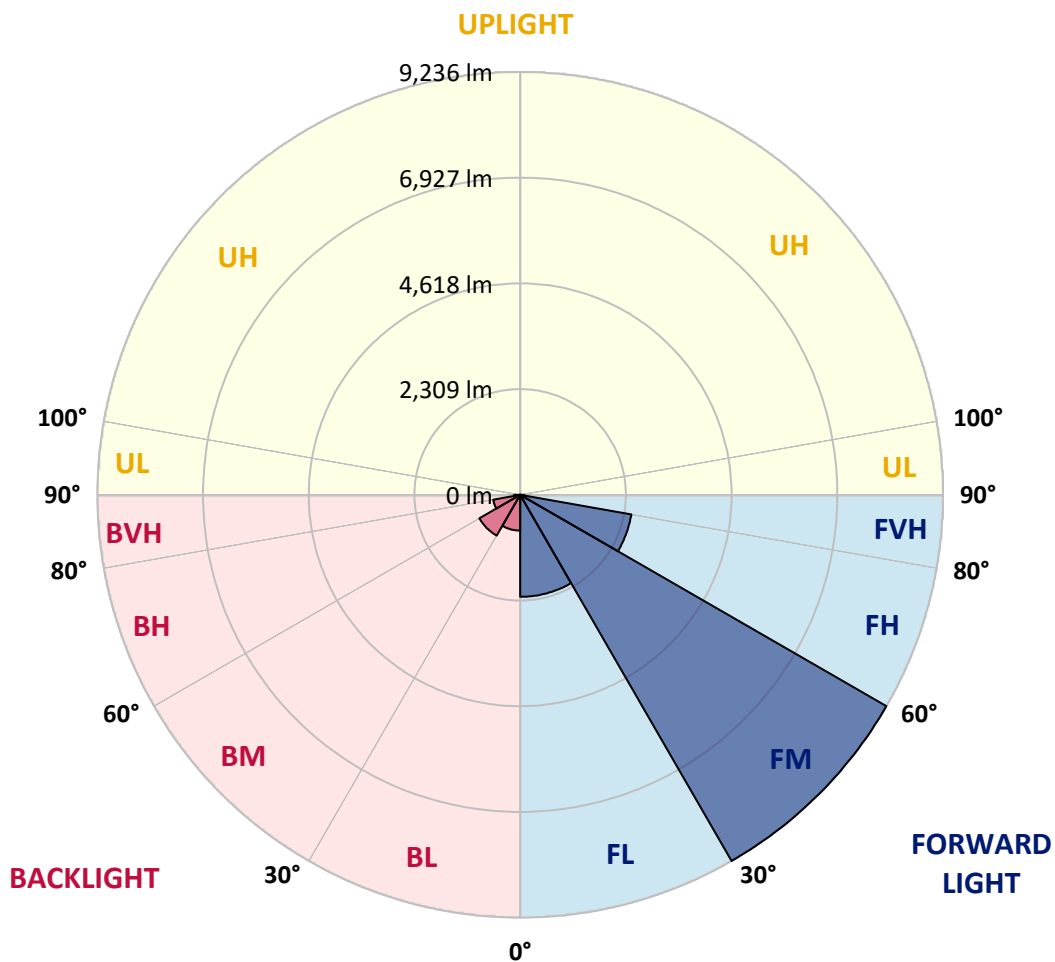
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2227.9	13.5			
FM	(30°-60°)	9236.3	55.8			
FH	(60°-80°)	2466.3	14.9			G2/5000
FVH	(80°-90°)	90.3	0.5			G1/100
BL	(0°-30°)	781.8	4.7	B2/1000		
BM	(30°-60°)	1028.5	6.2	B2/2500		
BH	(60°-80°)	598.7	3.6	B2/1000		G2/1000
BVH	(80°-90°)	134.2	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°	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5
2.5°	5019.8	5016.7	4974.3	4946.3	4913.2	4836.6	4760.0	4703.0	4674.0	4563.3	4455.6
5°	5434.9	5422.5	5398.7	5368.7	5325.2	5228.9	5107.8	5003.2	4961.8	4765.1	4567.4
7.5°	5215.5	5235.1	5308.6	5391.4	5478.4	5484.6	5398.7	5274.5	5228.9	4966.0	4676.1
10°	4607.8	4599.5	4691.6	4853.1	5139.9	5423.5	5565.4	5504.3	5456.7	5156.5	4784.8
12.5°	4423.5	4421.4	4437.0	4478.4	4658.5	5047.8	5522.9	5655.4	5638.9	5358.3	4900.8
15°	4479.4	4481.5	4480.5	4485.6	4535.3	4720.6	5285.9	5706.2	5757.9	5558.1	5018.8
17.5°	4658.5	4651.3	4628.5	4603.6	4610.9	4677.1	5030.2	5619.2	5774.5	5736.2	5118.2
20°	4934.9	4934.9	4873.8	4804.5	4758.9	4773.4	4923.5	5470.1	5697.9	5887.3	5192.7
22.5°	5281.7	5286.9	5196.8	5070.5	4967.0	4927.7	4984.6	5359.4	5604.7	6027.1	5258.9
25°	5712.4	5711.3	5579.9	5398.7	5235.1	5140.9	5139.9	5364.5	5575.7	6190.6	5328.3
27.5°	6245.5	6196.9	6043.6	5785.9	5555.0	5411.1	5345.9	5495.0	5636.8	6391.5	5421.5
30°	6847.0	6797.3	6596.5	6265.2	5952.5	5742.4	5634.7	5720.7	5823.1	6647.2	5562.3
32.5°	7442.2	7453.6	7217.6	6843.9	6442.2	6146.1	5986.7	6039.5	6110.9	6959.8	5752.7
35°	8313.9	8312.9	8004.4	7537.5	7060.2	6650.3	6448.4	6476.4	6541.6	7400.8	6019.8
37.5°	8964.0	8953.7	8754.9	8341.8	7804.6	7312.8	7020.9	7025.0	7080.9	7954.7	6371.8
40°	9030.3	9028.2	9027.2	8968.2	8600.6	8136.9	7771.4	7695.9	7718.6	8542.7	6745.5
42.5°	8524.0	8599.6	8817.0	9150.3	9252.8	9009.6	8663.8	8495.1	8445.4	9217.6	7141.0
45°	7802.5	7840.8	8221.8	8971.3	9581.0	9829.5	9569.6	9213.5	9128.6	9874.0	7462.9
47.5°	7467.1	7450.5	7671.0	8487.8	9548.9	10481.6	10500.3	9916.4	9772.5	10440.2	7737.3
50°	6747.6	6725.9	7004.3	7776.6	9199.0	10805.7	11455.8	10682.5	10416.4	10978.6	7985.7
52.5°	5313.8	5293.1	5666.8	6661.7	8416.4	10684.6	12261.2	11622.5	11169.0	11497.2	8217.6
55°	3457.7	3459.7	3815.8	4841.7	6810.7	9978.5	12639.1	12708.4	12200.1	12015.9	8405.0
57.5°	1903.8	1886.2	2139.8	2770.3	4685.4	8375.0	12324.3	13491.0	13226.0	12461.0	8540.6
58°	1692.6	1671.9	1867.5	2411.0	4200.9	7922.6	12166.0	13540.7	13357.5	12534.5	8560.3
60°	1206.0	1170.8	1140.8	1359.2	2420.4	5712.4	11110.0	13218.8	13395.8	12681.5	8541.6
62.5°	1016.6	976.2	868.6	860.3	1139.8	2794.1	8786.0	11609.0	12104.9	12343.0	8241.4
65°	944.1	903.8	761.9	711.2	773.3	1206.0	5432.9	8964.0	9626.6	11165.9	7485.7
67.5°	892.4	844.7	692.6	626.3	638.7	721.6	2305.4	5862.5	6630.6	8707.3	6005.3
70°	845.8	793.0	637.7	561.1	550.7	548.7	900.6	3061.2	3801.3	5697.9	4022.9
72.5°	793.0	741.2	589.0	507.3	484.5	445.1	541.4	1265.0	1734.0	2793.0	1843.7
75°	716.4	673.9	535.2	462.7	423.4	361.3	399.6	606.6	747.4	1069.4	856.1
77.5°	630.5	596.3	480.3	425.5	372.7	295.0	305.4	411.0	461.7	602.5	495.9
80°	446.2	458.6	419.3	374.8	328.2	238.1	235.0	301.3	331.3	404.8	333.3
82.5°	307.5	316.8	341.6	296.1	265.0	185.3	172.9	209.1	224.6	244.3	161.5
85°	219.5	213.3	237.1	212.2	194.6	118.0	110.8	132.5	141.8	149.1	77.6
87.5°	133.5	132.5	136.6	109.7	101.5	60.0	54.9	63.1	67.3	65.2	37.3
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°	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5	4422.5
2.5°	4415.2	4364.5	4253.7	4164.7	4068.4	3994.9	3921.4	3880.0	3834.5	3808.6	3805.5
5°	4463.9	4360.4	4124.3	3904.9	3679.2	3476.3	3277.5	3130.5	3010.4	2942.1	2938.0
7.5°	4517.7	4355.2	3990.8	3610.9	3209.2	2809.6	2456.6	2207.1	2046.6	1972.1	1966.9
10°	4559.1	4333.4	3828.3	3237.1	2600.5	2072.5	1751.6	1604.6	1555.9	1543.5	1541.4
12.5°	4608.8	4317.9	3623.3	2757.8	1987.6	1577.7	1480.4	1471.1	1481.4	1487.6	1488.7
15°	4655.4	4287.9	3346.9	2226.8	1555.9	1410.0	1412.0	1431.7	1452.4	1461.7	1462.8
17.5°	4677.1	4214.4	2983.5	1754.7	1361.3	1334.4	1358.2	1384.1	1402.7	1410.0	1410.0
20°	4677.1	4096.4	2562.2	1421.4	1259.9	1265.0	1294.0	1313.7	1317.8	1311.6	1308.5
22.5°	4657.5	3950.4	2152.2	1240.2	1177.1	1196.7	1219.5	1206.0	1157.4	1120.1	1112.9
25°	4639.9	3777.5	1757.8	1129.4	1104.6	1130.5	1121.1	1029.0	954.5	916.2	910.0
27.5°	4610.9	3568.4	1428.6	1038.3	1034.2	1054.9	962.8	873.7	836.5	815.8	811.6
30°	4603.6	3341.7	1195.7	957.6	964.8	935.8	830.3	801.3	793.0	781.6	776.4
32.5°	4627.5	3115.0	1049.7	891.3	898.6	803.3	763.0	767.1	766.1	751.6	746.4
35°	4692.7	2894.5	956.5	831.3	810.6	719.5	724.7	737.1	737.1	719.5	713.3
37.5°	4806.5	2689.5	897.5	780.6	709.1	676.0	689.5	706.0	706.0	693.6	688.4
40°	4927.7	2489.7	853.0	740.2	644.9	646.0	659.4	671.9	677.0	679.1	675.0
42.5°	5037.4	2282.7	805.4	696.7	616.0	623.2	629.4	638.7	660.5	675.0	672.9
45°	5101.6	2074.6	753.6	642.9	596.3	599.4	597.3	613.9	639.8	661.5	661.5
47.5°	5160.6	1903.8	711.2	589.0	576.6	576.6	570.4	587.0	610.8	636.7	638.7
50°	5216.5	1793.0	681.2	547.6	551.8	548.7	546.6	562.1	594.2	625.3	630.5
52.5°	5273.4	1755.7	654.3	517.6	525.9	521.8	523.8	545.6	581.8	613.9	619.1
55°	5353.1	1779.6	626.3	496.9	501.0	500.0	508.3	533.1	565.2	597.3	599.4
57.5°	5451.5	1866.5	602.5	481.4	477.2	483.4	496.9	520.7	551.8	590.1	593.2
58°	5471.2	1887.2	598.4	477.2	472.1	481.4	494.8	517.6	549.7	590.1	593.2
60°	5501.2	1960.7	588.0	469.0	454.5	471.0	487.6	510.4	545.6	595.3	601.5
62.5°	5356.3	1975.2	584.9	459.6	435.8	456.5	476.2	502.1	541.4	612.9	626.3
65°	4854.2	1826.1	563.2	444.1	420.3	445.1	465.9	495.9	553.8	665.6	671.9
67.5°	3896.6	1516.6	510.4	420.3	402.7	431.7	457.6	495.9	559.0	673.9	678.1
70°	2679.2	1139.8	444.1	394.4	382.0	415.1	454.5	507.3	541.4	637.7	625.3
72.5°	1399.6	793.0	389.2	364.4	357.2	400.6	484.5	495.9	520.7	595.3	582.8
75°	705.0	539.4	342.7	330.2	329.2	395.5	542.5	477.2	499.0	560.1	587.0
77.5°	416.2	422.4	305.4	298.1	303.3	386.1	543.5	458.6	474.1	515.5	544.5
80°	284.7	348.9	276.4	274.3	278.5	355.1	501.0	435.8	445.1	487.6	518.6
82.5°	160.5	192.6	242.2	255.7	253.6	290.9	432.7	396.5	407.9	576.6	609.7
85°	77.6	115.9	202.9	239.1	216.4	193.6	352.0	352.0	355.1	413.1	418.2
87.5°	29.0	51.8	136.6	189.4	151.1	115.9	239.1	249.5	277.4	285.7	291.9
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)