

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: P196193

Luminaire Tested: **NAV-AF-05-D-UNV-SL4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196193
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
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-SL4
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 29344.4 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G5

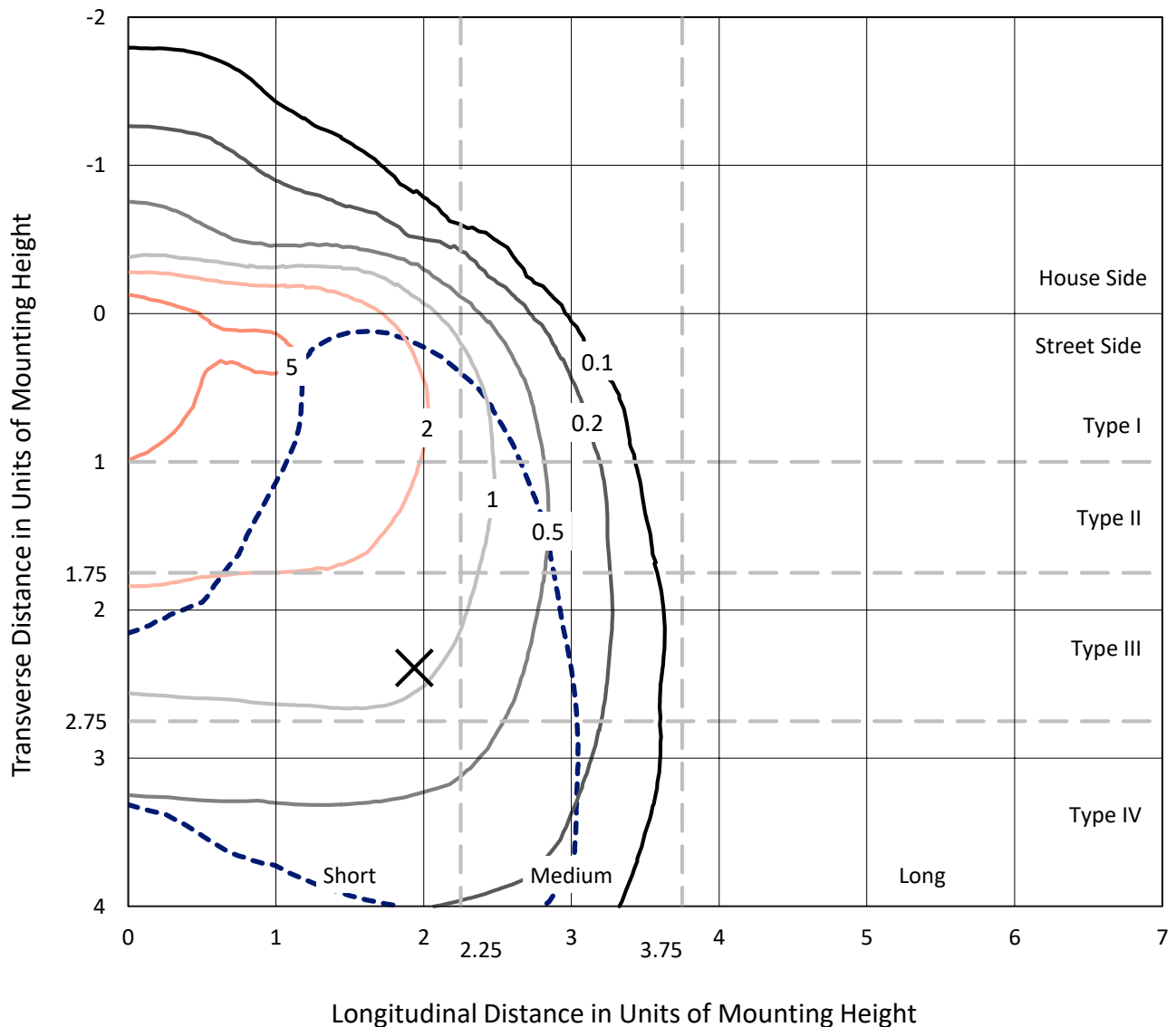
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

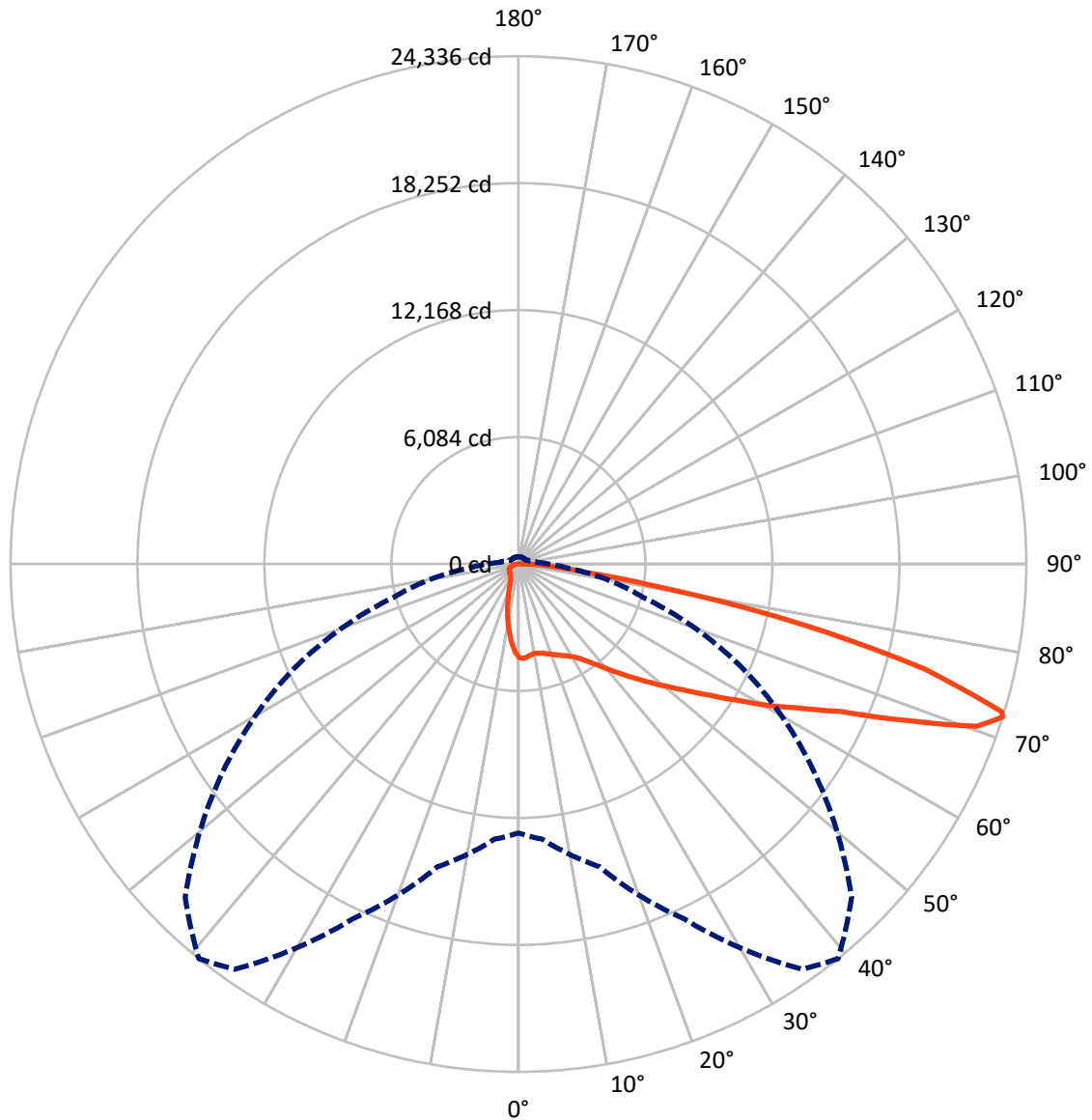
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.2 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3364.7	0.0	3364.7
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	25979.7	0.0	25979.7
	% Fixture	88.5	0.0	88.5
Total	Lumens	29344.4	0.0	29344.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	385.1	1.3
10°-20°	967.7	3.3
20°-30°	1508.1	5.1
30°-40°	2322.0	7.9
40°-50°	3785.3	12.9
50°-60°	5882.0	20.0
60°-70°	7872.8	26.8
70°-80°	5661.7	19.3
80°-90°	959.8	3.3
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°	29344.4	100.0
0°-180°	29344.4	100.0



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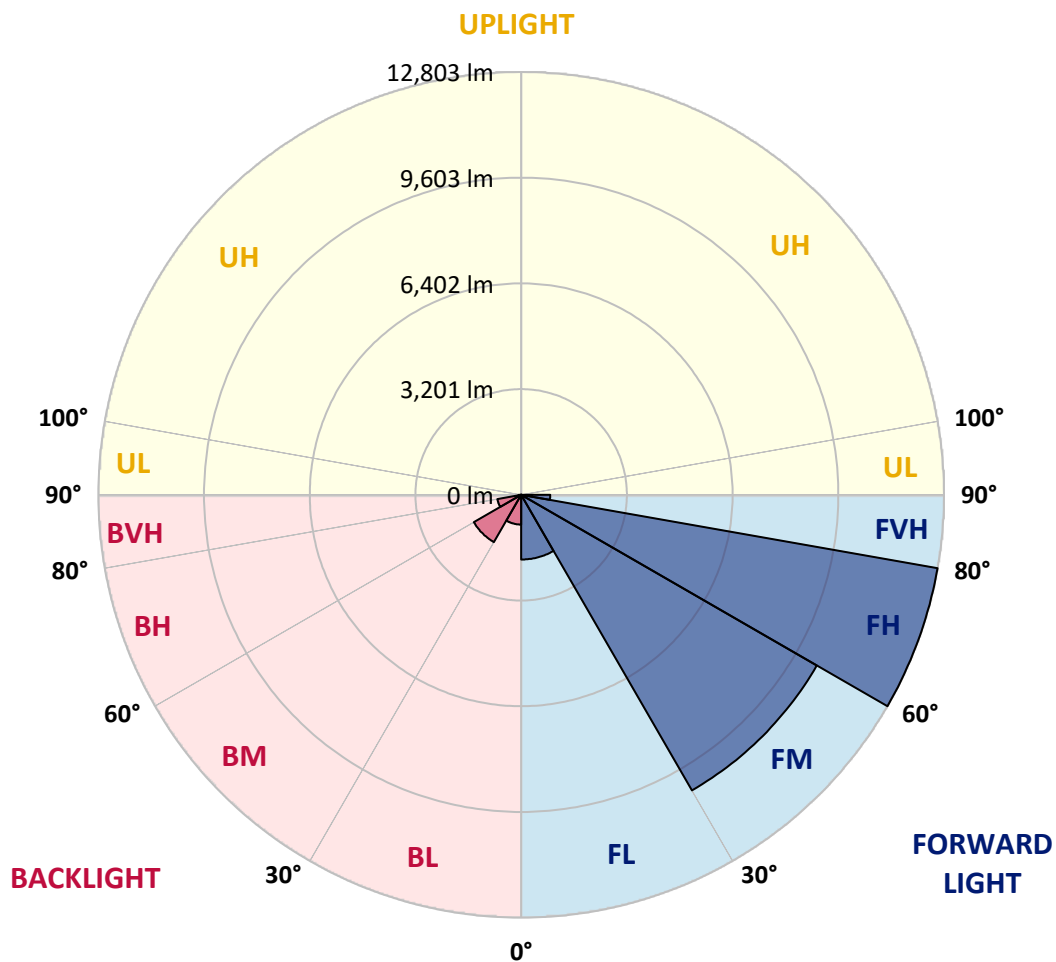
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1960.1	6.7			
FM	(30°-60°)	10335.7	35.2			
FH	(60°-80°)	12803.4	43.6			G5
FVH	(80°-90°)	880.4	3.0			G5
BL	(0°-30°)	900.7	3.1	B2/1000		
BM	(30°-60°)	1653.6	5.6	B2/2500		
BH	(60°-80°)	731.0	2.5	B2/1000		G2/1000
BVH	(80°-90°)	79.3	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4
2.5°	4577.9	4580.0	4574.0	4556.2	4540.5	4532.6	4518.9	4495.2	4463.6	4442.1	4424.3
5°	4534.6	4540.5	4536.6	4507.0	4479.4	4463.6	4442.1	4408.5	4367.2	4349.4	4308.1
7.5°	4501.1	4505.1	4493.2	4459.8	4406.6	4386.8	4347.4	4304.2	4266.7	4241.1	4191.8
10°	4477.5	4481.4	4471.5	4438.1	4378.9	4355.3	4308.1	4260.8	4211.6	4180.0	4124.8
12.5°	4444.0	4451.9	4451.9	4436.1	4396.7	4381.0	4333.6	4282.5	4237.2	4203.6	4134.8
15°	4438.1	4447.9	4465.7	4463.6	4451.9	4440.0	4402.6	4351.4	4312.0	4272.6	4187.9
17.5°	4487.3	4509.0	4544.5	4556.2	4548.3	4522.8	4479.4	4432.1	4388.9	4351.4	4247.0
20°	4611.5	4623.2	4676.4	4700.0	4660.7	4623.2	4566.1	4505.1	4465.7	4436.1	4302.1
22.5°	4798.6	4814.3	4857.7	4859.6	4776.9	4731.6	4658.7	4583.8	4546.4	4534.6	4377.0
25°	5098.0	5094.0	5105.9	5056.7	4906.9	4853.7	4765.1	4678.4	4652.8	4676.4	4487.3
27.5°	5456.5	5446.6	5409.3	5281.2	5054.6	4985.7	4879.3	4802.4	4802.4	4857.7	4637.0
30°	5870.2	5860.3	5738.1	5523.4	5229.9	5151.2	5038.9	4958.1	4999.5	5105.9	4839.9
32.5°	6307.5	6272.0	6100.7	5813.0	5480.2	5393.4	5285.1	5202.4	5281.2	5462.4	5131.4
35°	6719.2	6699.5	6488.7	6147.9	5803.2	5730.3	5655.5	5553.0	5679.1	5960.7	5543.2
37.5°	7144.7	7128.8	6870.9	6508.4	6197.1	6147.9	6084.9	6013.9	6216.9	6587.2	6100.7
40°	7619.3	7587.8	7262.8	6900.4	6656.1	6632.5	6599.0	6579.3	6906.2	7457.8	6805.8
42.5°	8157.1	8096.0	7676.5	7331.8	7156.5	7176.2	7158.4	7237.3	7737.6	8462.5	7645.0
45°	8771.7	8649.7	8088.2	7790.8	7710.0	7788.7	7826.2	8027.1	8720.6	9622.7	8582.7
47.5°	9346.9	9189.4	8539.3	8289.2	8334.5	8470.3	8576.7	8931.3	9798.0	10769.2	9540.0
50°	9876.8	9699.5	9021.9	8805.3	9025.9	9218.9	9439.5	9939.9	10944.4	11949.1	10418.5
52.5°	10268.8	10140.8	9504.5	9368.6	9819.7	10075.8	10428.4	11060.8	12102.7	13073.9	11202.5
55°	10572.2	10503.2	9975.3	10014.7	10718.0	11084.4	11511.8	12238.7	13328.0	14082.5	11832.9
57.5°	10922.9	10871.6	10513.1	10794.8	11832.9	12293.8	12798.1	13605.8	14494.2	14970.9	12327.4
60°	11293.2	11293.2	11111.9	11734.4	13227.6	13755.5	14257.8	14886.2	15656.4	15770.6	12528.3
62.5°	11572.8	11645.8	11710.7	12735.1	14551.3	15207.3	15758.8	16361.6	16860.0	16164.6	12055.5
65°	11978.7	12134.2	12500.7	13891.4	16190.2	17049.1	17793.7	18299.9	17835.0	15851.4	10513.1
67.5°	12676.0	12906.5	13686.6	15613.0	18699.8	19986.1	20709.0	19834.4	17644.0	13879.6	8052.8
70°	13304.4	13629.4	14963.0	17797.6	21961.8	23297.4	22964.5	19477.9	15366.8	10174.3	4954.2
72°	12886.7	13241.4	15022.1	18749.1	23705.1	24335.6	22580.4	17261.8	11874.3	6209.0	2442.6
72.5°	12613.0	12981.3	14831.0	18725.4	23752.5	24203.5	22046.5	16381.3	10779.0	5432.9	1975.7
75°	10536.7	10851.9	12752.8	16596.0	20931.6	20104.3	17204.7	10601.8	4954.2	1755.2	1016.4
77.5°	6880.7	7121.0	8793.4	11498.1	14661.6	13865.8	10471.7	4964.1	1857.6	1065.7	764.3
80°	3457.1	3628.5	4706.0	6045.4	7912.9	7280.5	4834.1	2401.3	1243.0	770.2	600.8
82.5°	2405.2	2562.8	3240.4	3086.8	3307.4	3201.0	2273.2	2003.3	929.8	486.5	315.2
85°	2017.2	2180.6	2680.9	2200.4	1800.4	1640.9	1629.0	1893.1	614.6	240.3	266.0
87.5°	1759.1	2007.2	2212.1	1607.4	1235.1	1089.3	1199.6	1735.4	195.0	132.0	80.8
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°	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4	4481.4
2.5°	4394.7	4388.9	4359.3	4314.0	4280.5	4258.9	4217.4	4215.5	4219.5	4184.0	4197.8
5°	4270.6	4247.0	4170.2	4065.8	3981.1	3900.3	3811.6	3782.2	3756.5	3703.3	3709.2
7.5°	4140.6	4099.3	3965.3	3793.9	3630.5	3480.7	3333.0	3260.1	3204.9	3136.0	3136.0
10°	4063.8	3998.8	3793.9	3543.8	3283.8	3065.1	2844.4	2712.5	2616.0	2527.3	2521.4
12.5°	4059.9	3961.4	3675.8	3331.0	2974.4	2667.1	2365.8	2162.9	2019.1	1914.7	1904.8
15°	4091.4	3953.5	3577.3	3132.1	2682.9	2283.0	1910.8	1652.7	1469.5	1353.3	1341.5
17.5°	4118.9	3943.7	3470.9	2923.3	2399.2	1912.7	1499.0	1231.1	1057.8	963.2	953.4
20°	4144.6	3922.0	3334.9	2702.6	2086.1	1566.0	1172.1	955.3	841.2	788.0	782.0
22.5°	4182.0	3902.3	3193.1	2454.5	1778.8	1274.5	967.2	811.6	750.5	724.9	721.0
25°	4243.1	3904.3	3055.2	2200.4	1497.1	1061.7	837.2	740.6	707.2	689.5	689.5
27.5°	4331.7	3927.9	2919.3	1942.3	1258.7	916.0	760.4	703.3	681.6	667.8	663.8
30°	4461.7	3971.2	2775.5	1698.0	1069.6	815.5	715.0	679.6	661.8	650.1	648.0
32.5°	4650.8	4048.0	2623.9	1475.4	925.9	744.6	681.6	659.9	646.1	636.3	634.3
35°	4932.5	4184.0	2476.1	1286.4	823.4	693.4	654.0	636.3	628.4	624.4	622.5
37.5°	5346.1	4402.6	2336.2	1138.5	756.5	659.9	626.5	616.5	612.6	612.6	612.6
40°	5866.2	4690.2	2210.2	1034.2	719.0	634.3	606.7	598.8	598.8	600.8	600.8
42.5°	6498.5	5050.7	2101.9	963.2	697.3	616.5	592.9	589.0	587.0	587.0	589.0
45°	7233.3	5476.2	2034.9	908.1	681.6	606.7	583.1	581.1	573.3	569.3	569.3
47.5°	7972.0	5931.3	2031.0	876.6	661.8	594.8	573.3	573.3	557.5	549.6	551.6
50°	8661.4	6339.0	2074.2	868.7	650.1	577.1	563.3	565.4	543.7	533.9	531.8
52.5°	9216.9	6650.2	2127.4	878.5	650.1	561.4	545.6	555.5	531.8	520.1	518.0
55°	9646.3	6866.9	2147.2	900.2	658.0	547.6	529.9	545.6	527.9	512.2	512.2
57.5°	9953.6	6935.8	2062.5	910.1	669.7	545.6	514.1	543.7	533.9	514.1	514.1
60°	9841.4	6535.9	1747.3	872.7	667.8	541.8	502.3	547.6	553.5	531.8	531.8
62.5°	8964.8	5468.3	1402.6	788.0	634.3	527.9	488.6	543.7	567.3	559.5	555.5
65°	7298.3	4010.6	1087.4	687.5	577.1	498.4	459.0	508.2	535.8	543.7	545.6
67.5°	5143.3	2539.2	845.1	585.0	506.3	455.0	425.4	449.1	459.0	462.9	470.8
70°	2812.9	1374.9	671.7	492.4	433.3	411.7	390.1	392.0	388.1	384.1	388.1
72°	1412.4	898.3	567.3	427.5	384.1	370.3	360.5	354.6	354.6	348.6	350.7
72.5°	1215.4	835.2	547.6	411.7	372.3	360.5	352.6	346.7	344.7	340.7	342.8
75°	809.6	661.8	457.1	344.7	317.1	309.2	313.2	307.3	309.2	305.4	307.3
77.5°	654.0	569.3	388.1	291.5	271.8	260.0	267.9	269.9	273.8	269.9	267.9
80°	547.6	484.6	325.0	240.3	226.6	216.7	220.7	234.5	236.4	224.5	222.6
82.5°	354.6	390.1	256.0	187.1	173.4	169.4	179.2	193.0	197.0	181.3	177.3
85°	297.5	313.2	185.2	128.1	114.3	110.3	130.0	143.8	153.6	137.9	133.9
87.5°	82.8	153.6	90.6	61.1	51.2	51.2	63.0	74.9	88.7	90.6	90.6
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)