

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: P195239

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-7060-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195239
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-SL4-7060-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5700K, 1200mA 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: 31468 lumens
Efficiency: N/A
Efficacy: 98.3 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

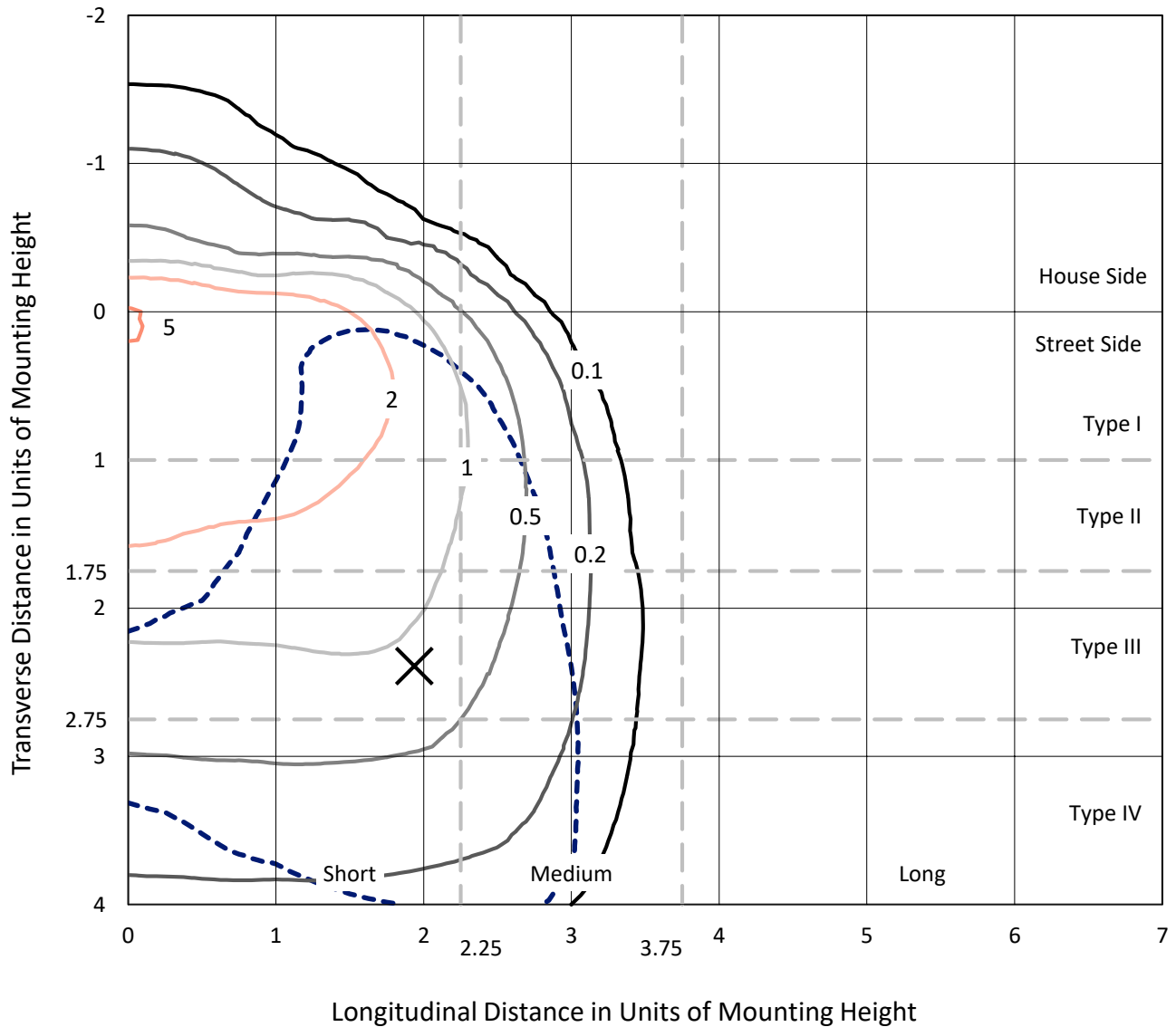
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

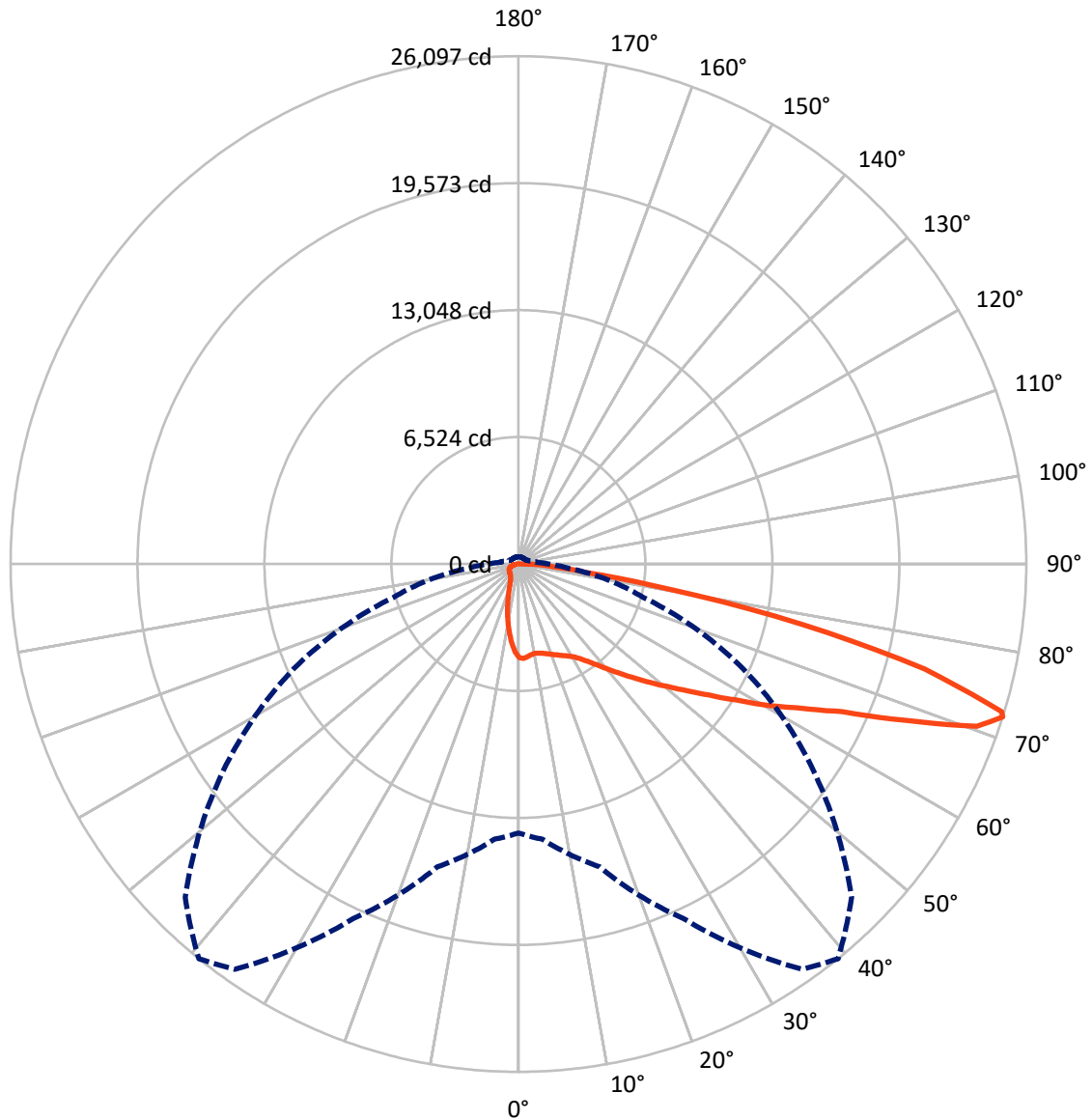
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 5.3 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	3608.2	0.0	3608.2
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	27859.8	0.0	27859.8
	% Fixture	88.5	0.0	88.5
Total	Lumens	31468.0	0.0	31468.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	413.0	1.3
10°-20°	1037.7	3.3
20°-30°	1617.2	5.1
30°-40°	2490.0	7.9
40°-50°	4059.2	12.9
50°-60°	6307.6	20.0
60°-70°	8442.5	26.8
70°-80°	6071.4	19.3
80°-90°	1029.2	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°	31468.0	100.0
0°-180°	31468.0	100.0

Coefficient of Utilization



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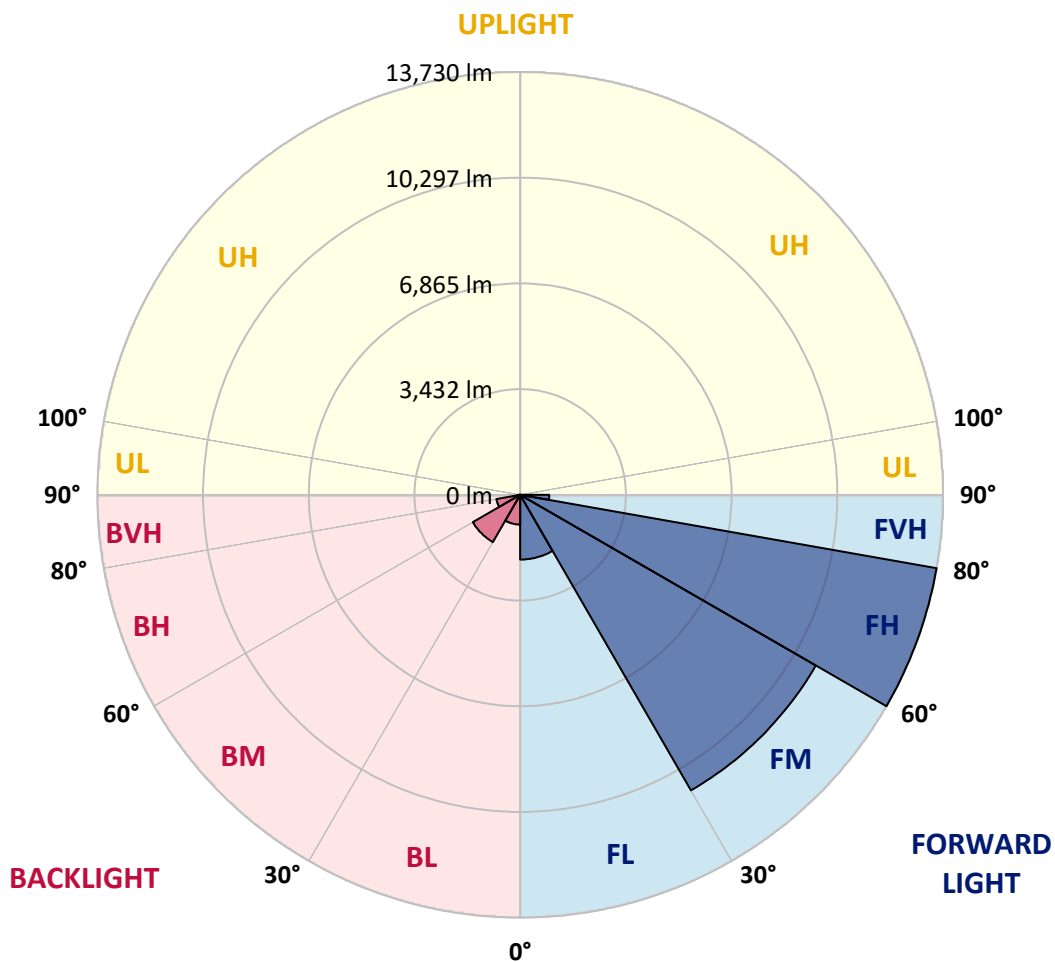
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2102.0	6.7			
FM	(30°-60°)	11083.6	35.2			
FH	(60°-80°)	13730.0	43.6			G5
FVH	(80°-90°)	944.1	3.0			G5
BL	(0°-30°)	965.9	3.1	B2/1000		
BM	(30°-60°)	1773.3	5.6	B2/2500		
BH	(60°-80°)	783.9	2.5	B2/1000		G2/1000
BVH	(80°-90°)	85.1	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°	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7
2.5°	4909.2	4911.3	4905.0	4886.0	4869.1	4860.7	4845.9	4820.5	4786.7	4763.5	4744.5
5°	4862.8	4869.1	4864.9	4833.2	4803.6	4786.7	4763.5	4727.6	4683.2	4664.2	4619.8
7.5°	4826.9	4831.1	4818.4	4782.5	4725.5	4704.3	4662.1	4615.6	4575.5	4548.0	4495.2
10°	4801.5	4805.7	4795.2	4759.3	4695.9	4670.5	4619.8	4569.1	4516.3	4482.5	4423.4
12.5°	4765.6	4774.0	4774.0	4757.1	4714.9	4698.0	4647.3	4592.4	4543.8	4507.9	4433.9
15°	4759.3	4769.8	4788.8	4786.7	4774.0	4761.4	4721.2	4666.3	4624.1	4581.8	4491.0
17.5°	4812.1	4835.3	4873.3	4886.0	4877.6	4850.1	4803.6	4752.9	4706.4	4666.3	4554.4
20°	4945.1	4957.8	5014.9	5040.2	4998.0	4957.8	4896.6	4831.1	4788.8	4757.1	4613.5
22.5°	5145.8	5162.7	5209.2	5211.3	5122.6	5074.0	4995.8	4915.6	4875.4	4862.8	4693.8
25°	5466.9	5462.7	5475.4	5422.6	5262.0	5205.0	5109.9	5017.0	4989.5	5014.9	4812.1
27.5°	5851.4	5840.8	5800.7	5663.4	5420.4	5346.5	5232.4	5150.1	5150.1	5209.2	4972.6
30°	6295.0	6284.4	6153.4	5923.2	5608.4	5523.9	5403.5	5316.9	5361.3	5475.4	5190.2
32.5°	6763.9	6725.9	6542.1	6233.7	5876.7	5783.8	5667.6	5578.9	5663.4	5857.7	5502.8
35°	7205.4	7184.3	6958.3	6592.8	6223.2	6145.0	6064.7	5954.9	6090.1	6392.1	5944.3
37.5°	7661.7	7644.8	7368.1	6979.4	6645.6	6592.8	6525.2	6449.2	6666.8	7063.9	6542.1
40°	8170.8	8137.0	7788.4	7399.8	7137.8	7112.5	7076.6	7055.4	7406.1	7997.6	7298.4
42.5°	8747.5	8682.0	8232.1	7862.4	7674.4	7695.5	7676.5	7761.0	8297.5	9074.9	8198.3
45°	9406.6	9275.6	8673.5	8354.6	8268.0	8352.5	8392.6	8608.1	9351.6	10319.1	9203.8
47.5°	10023.4	9854.4	9157.3	8889.0	8937.6	9083.4	9197.4	9577.7	10507.1	11548.5	10230.4
50°	10591.6	10401.5	9674.8	9442.5	9679.1	9886.1	10122.7	10659.2	11736.5	12813.9	11172.5
52.5°	11012.0	10874.7	10192.4	10046.6	10530.4	10805.0	11183.1	11861.2	12978.6	14020.1	12013.3
55°	11337.3	11263.4	10697.2	10739.5	11493.6	11886.5	12344.9	13124.4	14292.6	15101.6	12689.2
57.5°	11713.3	11658.4	11273.9	11576.0	12689.2	13183.5	13724.3	14590.4	15543.1	16054.3	13219.5
60°	12110.4	12110.4	11916.1	12583.6	14184.8	14750.9	15289.6	15963.5	16789.4	16911.9	13434.9
62.5°	12410.4	12488.6	12558.3	13656.7	15604.4	16307.8	16899.3	17545.7	18080.1	17334.4	12927.9
65°	12845.6	13012.4	13405.3	14896.7	17361.9	18282.9	19081.4	19624.3	19125.7	16998.5	11273.9
67.5°	13593.3	13840.5	14677.0	16742.9	20053.1	21432.5	22207.7	21269.8	18920.8	14884.0	8635.5
70°	14267.2	14615.8	16045.9	19085.6	23551.2	24983.5	24626.5	20887.5	16478.9	10910.6	5312.7
72°	13819.4	14199.6	16109.2	20105.9	25420.7	26096.7	24214.5	18511.0	12733.6	6658.3	2619.4
72.5°	13525.7	13920.8	15904.3	20080.6	25471.4	25955.2	23642.1	17566.8	11559.1	5826.0	2118.7
75°	11299.3	11637.3	13675.7	17797.0	22446.4	21559.2	18449.8	11369.0	5312.7	1882.2	1090.0
77.5°	7378.6	7636.4	9429.8	12330.1	15722.7	14869.2	11229.6	5323.3	1992.0	1142.8	819.6
80°	3707.3	3891.1	5046.5	6483.0	8485.5	7807.5	5183.8	2575.0	1332.9	826.0	644.3
82.5°	2579.3	2748.2	3474.9	3310.1	3546.7	3432.7	2437.7	2148.3	997.1	521.8	338.0
85°	2163.1	2338.4	2875.0	2359.6	1930.7	1759.6	1747.0	2030.0	659.1	257.7	285.2
87.5°	1886.4	2152.5	2372.2	1723.7	1324.5	1168.2	1286.5	1861.0	209.1	141.5	86.6
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°	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7	4805.7
2.5°	4712.8	4706.4	4674.8	4626.2	4590.3	4567.0	4522.7	4520.6	4524.8	4486.8	4501.5
5°	4579.7	4554.4	4472.0	4360.0	4269.2	4182.6	4087.5	4055.8	4028.4	3971.3	3977.7
7.5°	4440.3	4395.9	4252.3	4068.5	3893.2	3732.6	3574.2	3496.0	3436.9	3363.0	3363.0
10°	4357.9	4288.2	4068.5	3800.2	3521.4	3286.9	3050.3	2908.8	2805.3	2710.2	2703.9
12.5°	4353.7	4248.1	3941.8	3572.1	3189.7	2860.2	2537.0	2319.4	2165.2	2053.3	2042.7
15°	4387.5	4239.6	3836.1	3358.7	2877.1	2448.3	2049.0	1772.3	1575.9	1451.2	1438.5
17.5°	4417.0	4229.0	3722.1	3134.8	2572.9	2051.1	1607.5	1320.3	1134.4	1033.0	1022.4
20°	4444.5	4205.8	3576.3	2898.2	2237.0	1679.4	1256.9	1024.5	902.0	845.0	838.6
22.5°	4484.6	4184.7	3424.2	2632.1	1907.5	1366.7	1037.2	870.3	804.8	777.4	773.1
25°	4550.1	4186.8	3276.3	2359.6	1605.4	1138.6	897.8	794.3	758.4	739.3	739.3
27.5°	4645.2	4212.1	3130.6	2082.8	1349.8	982.3	815.4	754.1	730.9	716.1	711.9
30°	4784.6	4258.6	2976.4	1820.9	1147.0	874.5	766.8	728.8	709.8	697.1	695.0
32.5°	4987.4	4341.0	2813.7	1582.2	992.8	798.5	730.9	707.7	692.9	682.3	680.2
35°	5289.5	4486.8	2655.3	1379.4	883.0	743.6	701.3	682.3	673.9	669.6	667.5
37.5°	5733.1	4721.2	2505.3	1221.0	811.2	707.7	671.7	661.2	657.0	657.0	657.0
40°	6290.8	5029.6	2370.1	1109.0	771.0	680.2	650.6	642.2	642.2	644.3	644.3
42.5°	6968.8	5416.2	2253.9	1033.0	747.8	661.2	635.8	631.6	629.5	629.5	631.6
45°	7756.8	5872.5	2182.1	973.8	730.9	650.6	625.3	623.2	614.7	610.5	610.5
47.5°	8548.9	6360.5	2177.9	940.0	709.8	637.9	614.7	614.7	597.8	589.4	591.5
50°	9288.3	6797.7	2224.4	931.6	697.1	618.9	604.1	606.3	583.0	572.5	570.4
52.5°	9884.0	7131.5	2281.4	942.1	697.1	602.0	585.1	595.7	570.4	557.7	555.6
55°	10344.5	7363.9	2302.5	965.4	705.5	587.2	568.2	585.1	566.1	549.2	549.2
57.5°	10674.0	7437.8	2211.7	975.9	718.2	585.1	551.3	583.0	572.5	551.3	551.3
60°	10553.6	7009.0	1873.7	935.8	716.1	580.9	538.7	587.2	593.6	570.4	570.4
62.5°	9613.6	5864.0	1504.0	845.0	680.2	566.1	523.9	583.0	608.4	599.9	595.7
65°	7826.5	4300.9	1166.0	737.2	618.9	534.4	492.2	545.0	574.6	583.0	585.1
67.5°	5515.5	2722.9	906.2	627.4	542.9	488.0	456.3	481.6	492.2	496.4	504.9
70°	3016.5	1474.5	720.3	528.1	464.7	441.5	418.3	420.4	416.1	411.9	416.1
72°	1514.6	963.3	608.4	458.4	411.9	397.1	386.6	380.2	380.2	373.9	376.0
72.5°	1303.4	895.7	587.2	441.5	399.2	386.6	378.1	371.8	369.7	365.4	367.6
75°	868.2	709.8	490.1	369.7	340.1	331.6	335.9	329.5	331.6	327.4	329.5
77.5°	701.3	610.5	416.1	312.6	291.5	278.8	287.3	289.4	293.6	289.4	287.3
80°	587.2	519.7	348.5	257.7	242.9	232.4	236.6	251.4	253.5	240.8	238.7
82.5°	380.2	418.3	274.6	200.7	185.9	181.7	192.2	207.0	211.2	194.3	190.1
85°	319.0	335.9	198.6	137.3	122.5	118.3	139.4	154.2	164.8	147.9	143.6
87.5°	88.7	164.8	97.2	65.5	54.9	54.9	67.6	80.3	95.1	97.2	97.2
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)