

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: P195233

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195233
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5700K, 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: 28686 lumens
Efficiency: N/A
Efficacy: 102.8 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

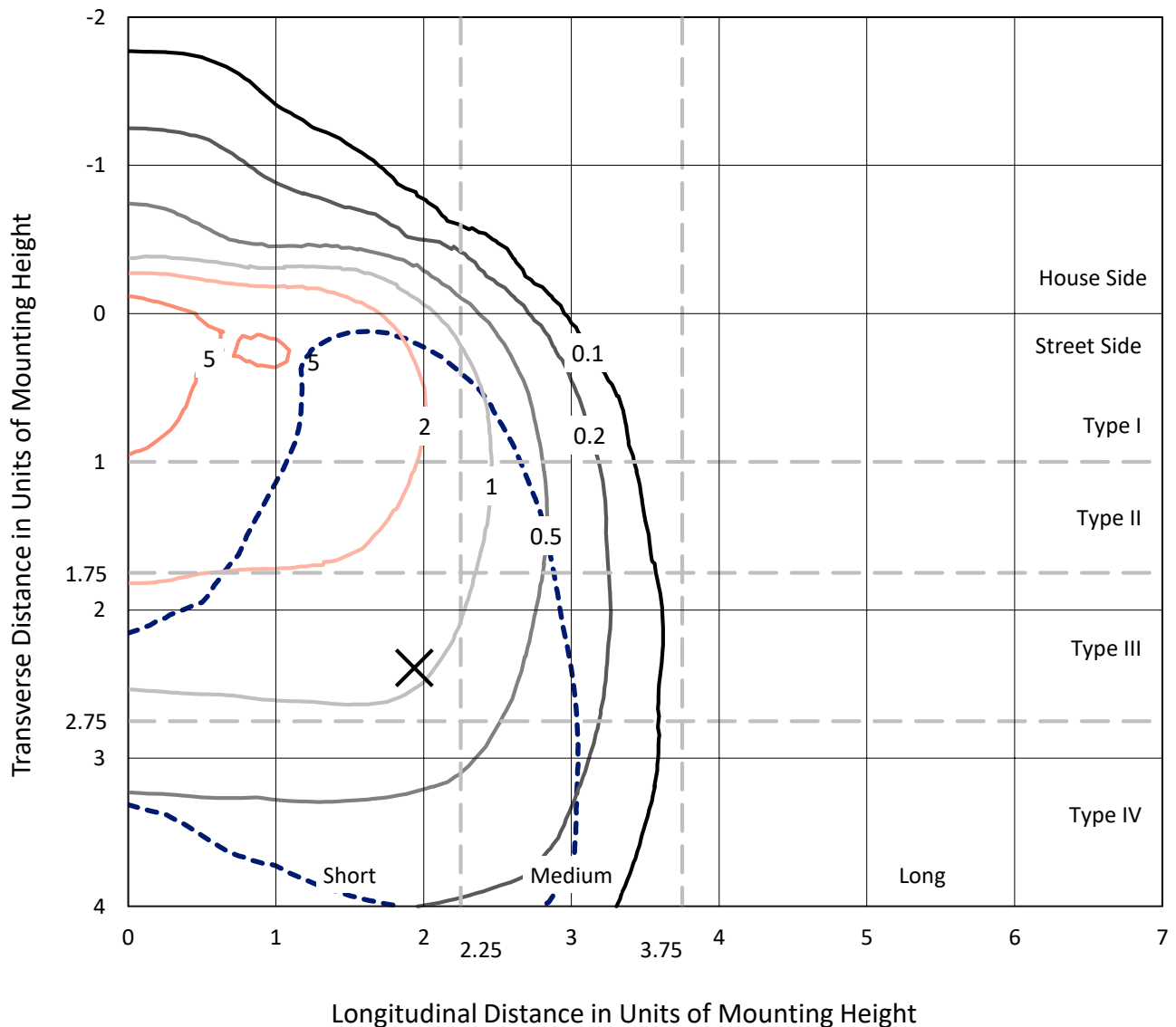
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

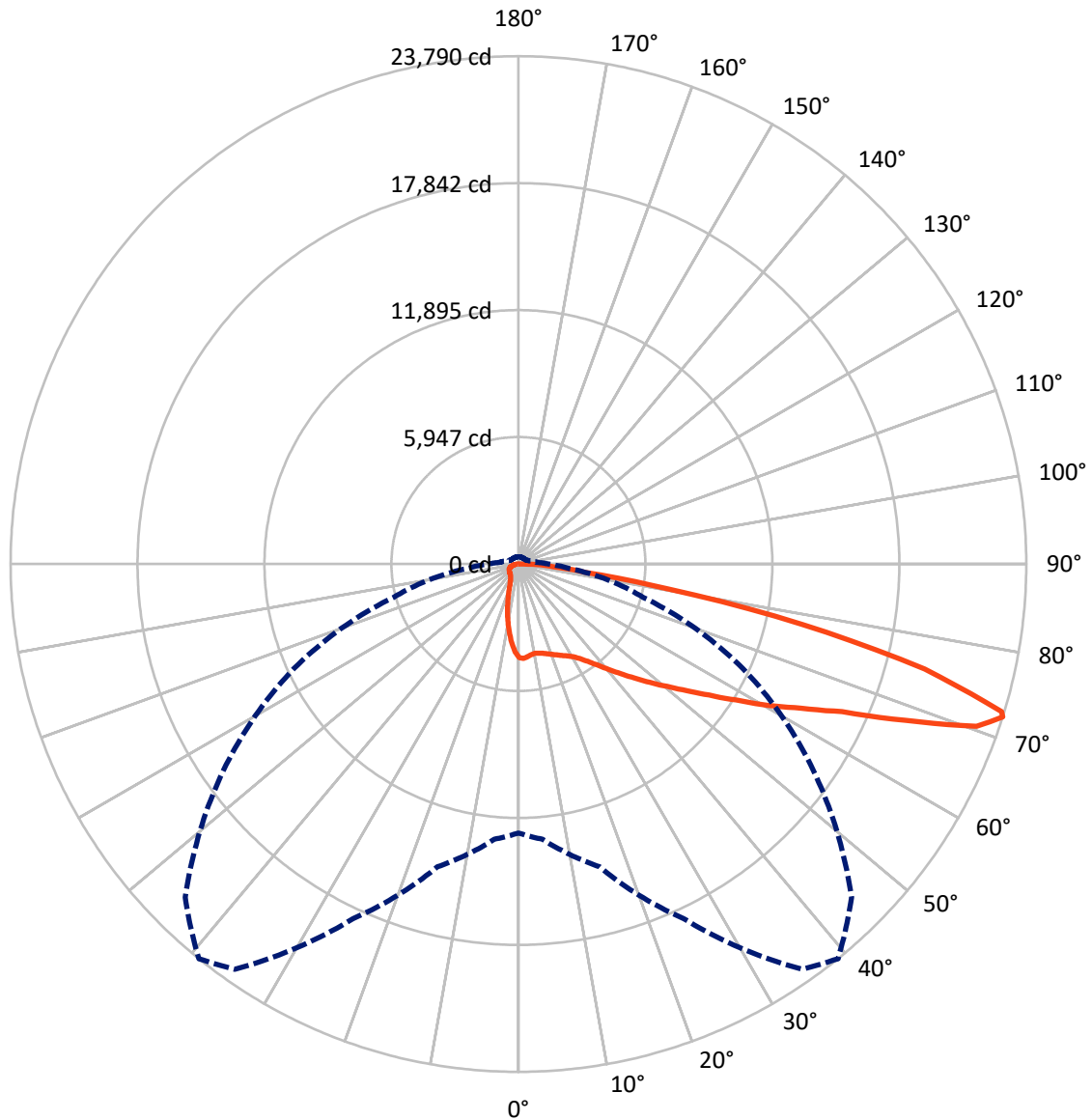
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7 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	3289.2	0.0	3289.2
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	25396.8	0.0	25396.8
	% Fixture	88.5	0.0	88.5
Total	Lumens	28686.0	0.0	28686.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	376.5	1.3
10°-20°	946.0	3.3
20°-30°	1474.2	5.1
30°-40°	2269.9	7.9
40°-50°	3700.4	12.9
50°-60°	5750.0	20.0
60°-70°	7696.1	26.8
70°-80°	5534.7	19.3
80°-90°	938.2	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°	28686.0	100.0
0°-180°	28686.0	100.0

Coefficient of Utilization



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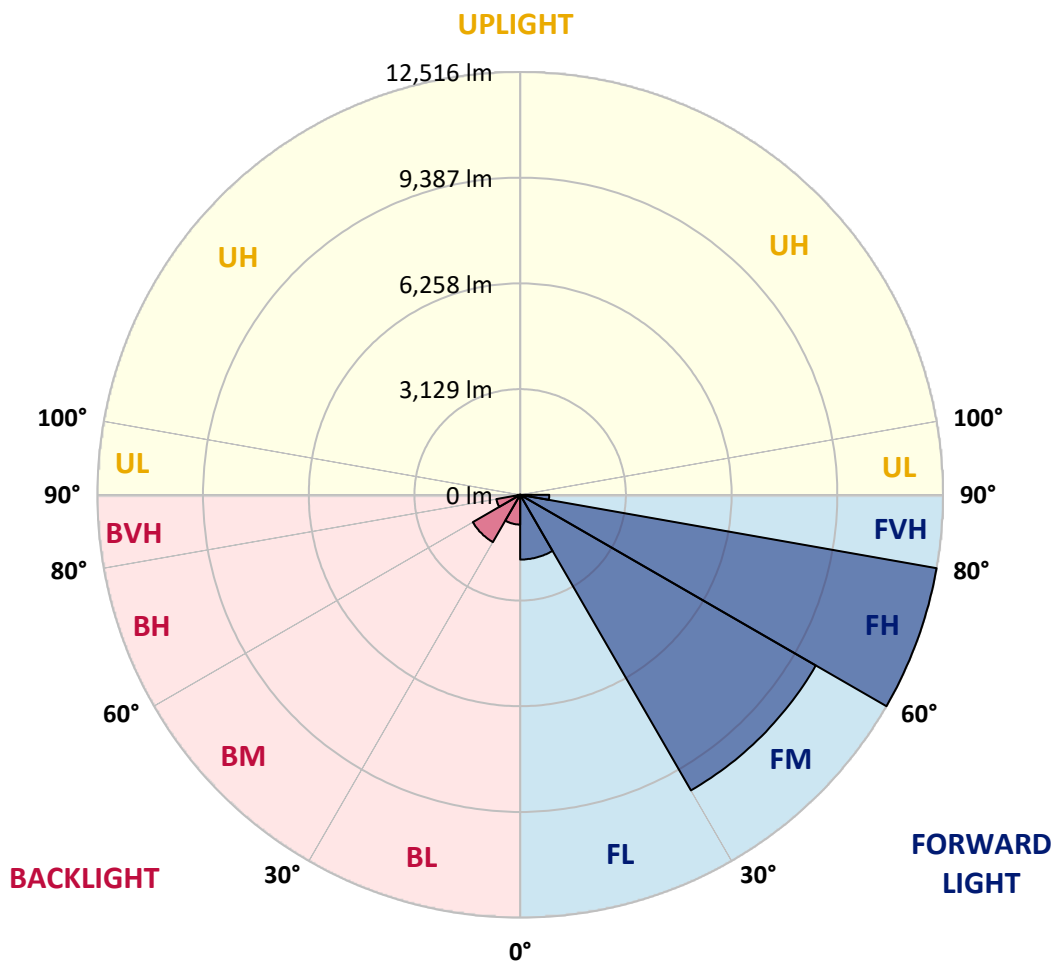
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1916.2	6.7			
FM	(30°-60°)	10103.8	35.2			
FH	(60°-80°)	12516.2	43.6			G5
FVH	(80°-90°)	860.7	3.0			G5
BL	(0°-30°)	880.5	3.1	B2/1000		
BM	(30°-60°)	1616.5	5.6	B2/2500		
BH	(60°-80°)	714.6	2.5	B2/1000		G2/1000
BVH	(80°-90°)	77.6	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°	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9
2.5°	4475.2	4477.2	4471.4	4454.0	4438.6	4430.9	4417.5	4394.3	4363.5	4342.4	4325.0
5°	4432.9	4438.6	4434.8	4405.9	4378.9	4363.5	4342.4	4309.6	4269.2	4251.8	4211.4
7.5°	4400.1	4404.0	4392.4	4359.7	4307.7	4288.4	4249.9	4207.6	4171.0	4145.9	4097.8
10°	4377.0	4380.9	4371.2	4338.5	4280.7	4257.6	4211.4	4165.2	4117.1	4086.2	4032.3
12.5°	4344.3	4352.0	4352.0	4336.6	4298.1	4282.7	4236.4	4186.4	4142.1	4109.3	4042.0
15°	4338.5	4348.1	4365.5	4363.5	4352.0	4340.4	4303.8	4253.8	4215.3	4176.7	4093.9
17.5°	4386.6	4407.8	4442.5	4454.0	4446.3	4421.3	4378.9	4332.7	4290.4	4253.8	4151.7
20°	4508.0	4519.5	4571.5	4594.6	4556.1	4519.5	4463.7	4404.0	4365.5	4336.6	4205.6
22.5°	4690.9	4706.3	4748.7	4750.6	4669.7	4625.4	4554.2	4481.0	4444.4	4432.9	4278.8
25°	4983.6	4979.7	4991.3	4943.2	4796.8	4744.8	4658.2	4573.4	4548.4	4571.5	4386.6
27.5°	5334.1	5324.4	5287.9	5162.7	4941.2	4873.8	4769.8	4694.7	4694.7	4748.7	4533.0
30°	5738.5	5728.8	5609.4	5399.5	5112.6	5035.6	4925.8	4846.9	4887.3	4991.3	4731.3
32.5°	6166.0	6131.3	5963.8	5682.6	5357.2	5272.4	5166.5	5085.7	5162.7	5339.8	5016.3
35°	6568.4	6549.2	6343.1	6010.0	5673.0	5601.7	5528.6	5428.4	5551.7	5827.0	5418.8
37.5°	6984.4	6968.9	6716.7	6362.4	6058.1	6010.0	5948.4	5879.0	6077.4	6439.4	5963.8
40°	7448.4	7417.6	7099.9	6745.6	6506.8	6483.7	6450.9	6431.7	6751.3	7290.5	6653.1
42.5°	7974.1	7914.4	7504.3	7167.3	6995.9	7015.2	6997.8	7074.9	7564.0	8272.6	7473.5
45°	8574.9	8455.6	7906.7	7616.0	7537.0	7614.0	7650.6	7847.0	8524.9	9406.8	8390.1
47.5°	9137.2	8983.2	8347.7	8103.2	8147.5	8280.3	8384.3	8730.9	9578.2	10527.6	9326.0
50°	9655.2	9481.9	8819.5	8607.7	8823.4	9012.1	9227.7	9716.9	10698.9	11681.0	10184.8
52.5°	10038.4	9913.3	9291.3	9158.4	9599.4	9849.7	10194.4	10812.6	11831.2	12780.6	10951.2
55°	10335.0	10267.6	9751.5	9790.0	10477.5	10835.7	11253.5	11964.1	13029.0	13766.5	11567.4
57.5°	10677.8	10627.7	10277.2	10552.6	11567.4	12018.0	12511.0	13300.5	14169.0	14635.0	12050.8
60°	11039.8	11039.8	10862.6	11471.1	12930.8	13446.9	13937.9	14552.2	15305.1	15416.8	12247.2
62.5°	11313.2	11384.5	11448.0	12449.4	14224.8	14866.1	15405.2	15994.5	16481.7	15801.9	11785.0
65°	11709.9	11862.0	12220.2	13579.7	15827.0	16666.6	17394.5	17889.3	17434.9	15495.8	10277.2
67.5°	12391.6	12616.9	13379.5	15262.7	18280.3	19537.7	20244.4	19389.4	17248.1	13568.2	7872.1
70°	13005.9	13323.6	14627.3	17398.3	21469.1	22774.7	22449.3	19040.9	15022.0	9946.0	4843.0
72°	12597.6	12944.3	14685.1	18328.4	23173.3	23789.6	22073.8	16874.5	11607.9	6069.7	2387.8
72.5°	12330.0	12690.1	14498.3	18305.3	23219.6	23660.5	21551.9	16013.8	10537.2	5311.0	1931.4
75°	10300.3	10608.4	12466.7	16223.7	20462.0	19653.2	16818.7	10363.9	4843.0	1715.8	993.6
77.5°	6726.3	6961.2	8596.1	11240.1	14332.7	13554.7	10236.8	4852.7	1815.9	1041.8	747.2
80°	3379.5	3547.1	4600.4	5909.8	7735.4	7117.2	4725.6	2347.4	1215.1	752.9	587.3
82.5°	2351.2	2505.3	3167.7	3017.5	3233.2	3129.2	2222.2	1958.4	908.9	475.6	308.1
85°	1971.9	2131.7	2620.8	2151.0	1760.0	1604.1	1592.5	1850.6	600.8	234.9	260.0
87.5°	1719.6	1962.2	2162.5	1571.3	1207.4	1064.9	1172.7	1696.5	190.6	129.0	79.0
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°	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9	4380.9
2.5°	4296.1	4290.4	4261.5	4217.2	4184.5	4163.3	4122.8	4120.9	4124.8	4090.1	4103.6
5°	4174.8	4151.7	4076.6	3974.6	3891.8	3812.8	3726.1	3697.3	3672.2	3620.2	3626.0
7.5°	4047.7	4007.3	3876.3	3708.8	3549.0	3402.6	3258.2	3187.0	3133.0	3065.6	3065.6
10°	3972.6	3909.1	3708.8	3464.3	3210.1	2996.3	2780.6	2651.6	2557.3	2470.6	2464.8
12.5°	3968.8	3872.5	3593.3	3256.3	2907.7	2607.3	2312.7	2114.4	1973.8	1871.7	1862.1
15°	3999.6	3864.8	3497.0	3061.8	2622.7	2231.8	1867.9	1615.6	1436.5	1322.9	1311.4
17.5°	4026.5	3855.2	3393.0	2857.7	2345.4	1869.8	1465.4	1203.5	1034.1	941.6	932.0
20°	4051.6	3834.0	3260.1	2642.0	2039.3	1530.9	1145.8	933.9	822.3	770.3	764.5
22.5°	4088.2	3814.7	3121.5	2399.4	1738.9	1245.9	945.5	793.4	733.7	708.6	704.8
25°	4147.9	3816.7	2986.7	2151.0	1463.5	1037.9	818.4	724.0	691.3	674.0	674.0
27.5°	4234.5	3839.8	2853.8	1898.7	1230.5	895.4	743.3	687.5	666.3	652.8	648.9
30°	4361.6	3882.1	2713.2	1659.9	1045.6	797.2	699.0	664.4	647.0	635.5	633.5
32.5°	4546.5	3957.2	2565.0	1442.3	905.1	727.9	666.3	645.1	631.6	622.0	620.1
35°	4821.8	4090.1	2420.5	1257.5	804.9	677.8	639.3	622.0	614.3	610.4	608.5
37.5°	5226.2	4303.8	2283.8	1113.0	739.5	645.1	612.4	602.7	598.9	598.9	598.9
40°	5734.6	4585.0	2160.6	1011.0	702.9	620.1	593.1	585.4	585.4	587.3	587.3
42.5°	6352.7	4937.4	2054.7	941.6	681.7	602.7	579.6	575.8	573.8	573.8	575.8
45°	7071.0	5353.3	1989.2	887.7	666.3	593.1	570.0	568.1	560.4	556.5	556.5
47.5°	7793.1	5798.2	1985.4	856.9	647.0	581.5	560.4	560.4	545.0	537.3	539.2
50°	8467.1	6196.8	2027.7	849.2	635.5	564.2	550.7	552.7	531.5	521.9	519.9
52.5°	9010.1	6501.0	2079.7	858.8	635.5	548.8	533.4	543.0	519.9	508.4	506.4
55°	9429.9	6712.8	2099.0	880.0	643.2	535.3	518.0	533.4	516.1	500.7	500.7
57.5°	9730.3	6780.2	2016.2	889.7	654.7	533.4	502.6	531.5	521.9	502.6	502.6
60°	9620.6	6389.3	1708.1	853.1	652.8	529.6	491.0	535.3	541.1	519.9	519.9
62.5°	8763.7	5345.6	1371.1	770.3	620.1	516.1	477.6	531.5	554.6	546.9	543.0
65°	7134.6	3920.6	1063.0	672.1	564.2	487.2	448.7	496.8	523.8	531.5	533.4
67.5°	5027.9	2482.2	826.1	571.9	494.9	444.8	415.9	439.0	448.7	452.5	460.2
70°	2749.8	1344.1	656.6	481.4	423.6	402.5	381.3	383.2	379.4	375.5	379.4
72°	1380.7	878.1	554.6	417.9	375.5	362.0	352.4	346.6	346.6	340.8	342.8
72.5°	1188.1	816.5	535.3	402.5	363.9	352.4	344.7	338.9	337.0	333.1	335.1
75°	791.4	647.0	446.8	337.0	310.0	302.3	306.2	300.4	302.3	298.5	300.4
77.5°	639.3	556.5	379.4	285.0	265.7	254.2	261.9	263.8	267.7	263.8	261.9
80°	535.3	473.7	317.7	234.9	221.5	211.8	215.7	229.2	231.1	219.5	217.6
82.5°	346.6	381.3	250.3	182.9	169.5	165.6	175.2	188.7	192.6	177.2	173.3
85°	290.8	306.2	181.0	125.2	111.7	107.8	127.1	140.6	150.2	134.8	130.9
87.5°	80.9	150.2	88.6	59.7	50.1	50.1	61.6	73.2	86.7	88.6	88.6
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)