

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: P270449

Luminaire Tested: **NAV-AF-03-D-UNV-SLL-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270449
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24264)
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-SLL-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13899.8 lumens
Efficiency: N/A
Efficacy: 83.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

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

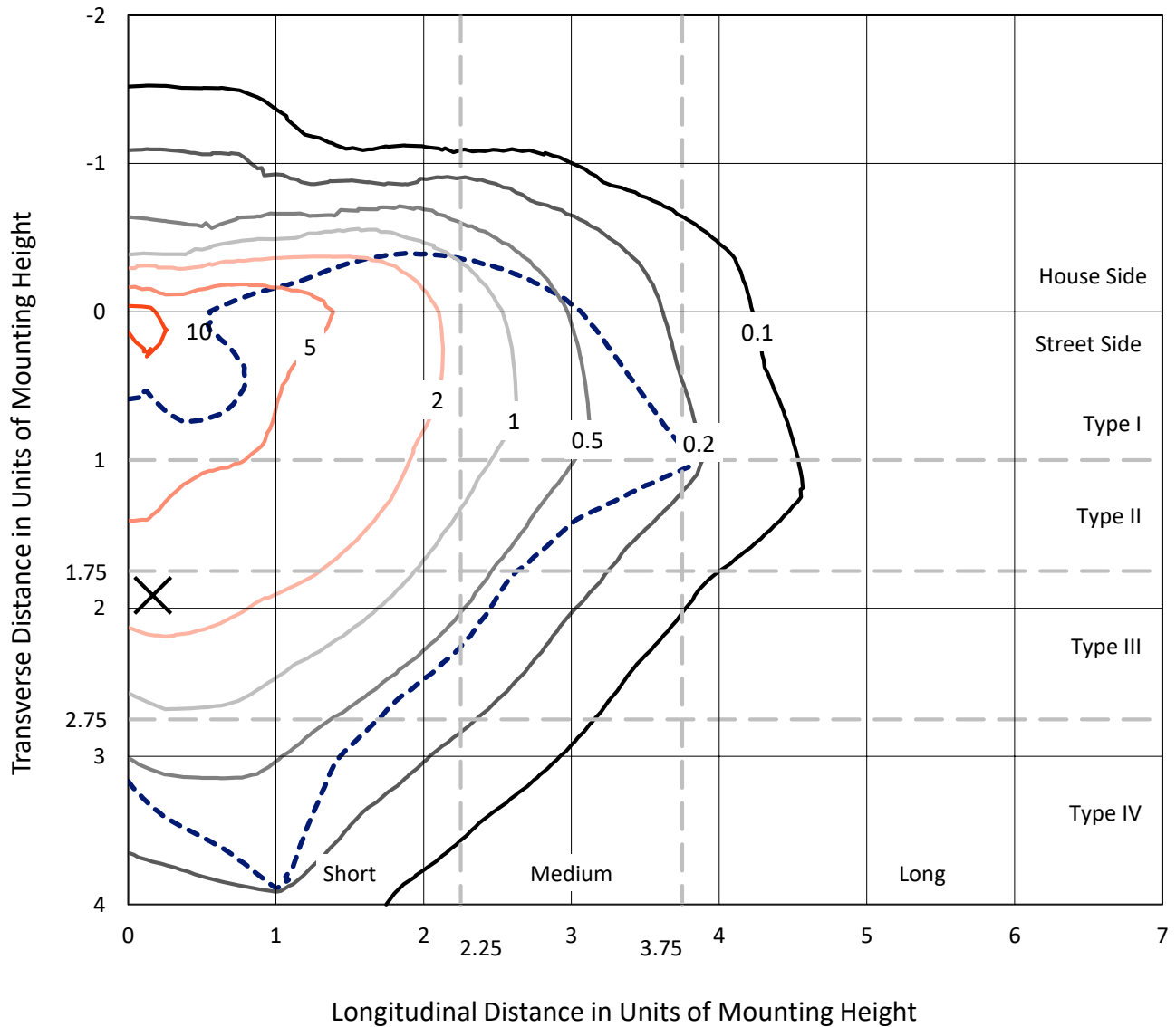


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Iso-Footcandle Lines of Horizontal Illumination

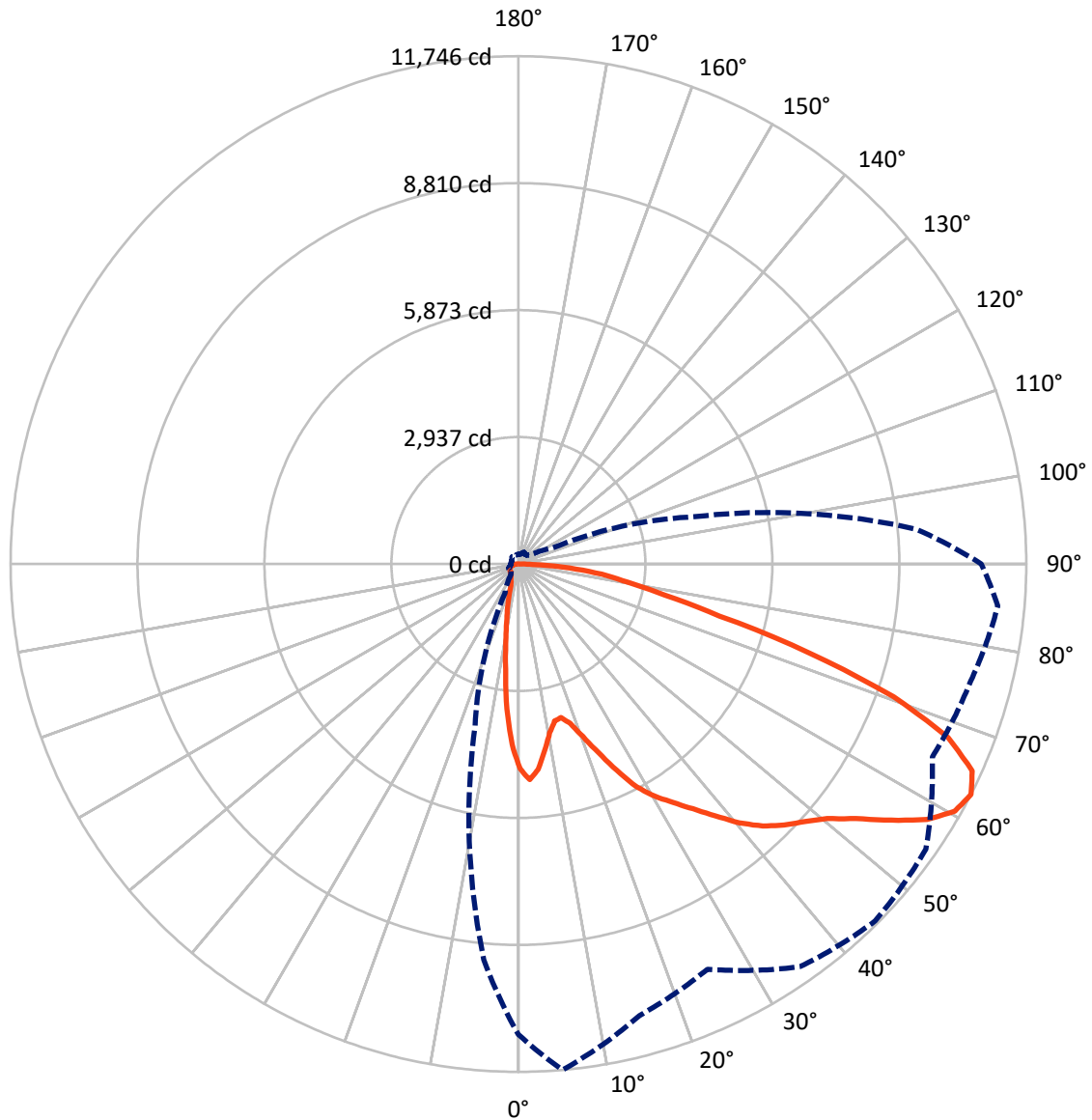
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 13.6 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2462.4	0.0	2462.4
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	11437.4	0.0	11437.4
	% Fixture	82.3	0.0	82.3
Total	Lumens	13899.8	0.0	13899.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	344.6	2.5
10°-20°	629.4	4.5
20°-30°	905.3	6.5
30°-40°	1386.6	10.0
40°-50°	2027.2	14.6
50°-60°	2949.6	21.2
60°-70°	3417.5	24.6
70°-80°	1781.5	12.8
80°-90°	457.9	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°	13899.8	100.0
0°-180°	13899.8	100.0



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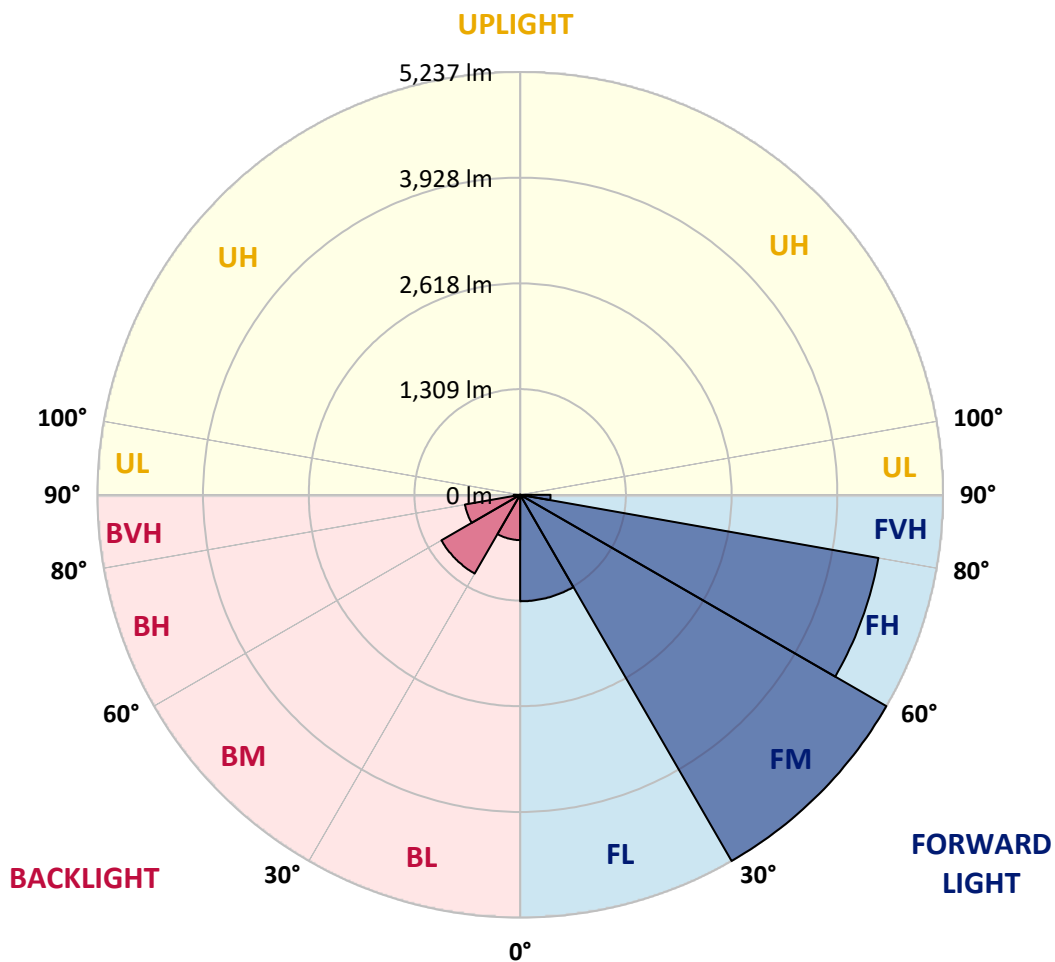
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1319.1	9.5			
FM	(30°-60°)	5236.8	37.7			
FH	(60°-80°)	4504.7	32.4			G2/5000
FVH	(80°-90°)	376.7	2.7			G3/500
BL	(0°-30°)	560.2	4.0	B2/1000		
BM	(30°-60°)	1126.6	8.1	B2/2500		
BH	(60°-80°)	694.3	5.0	B2/1000		G2/1000
BVH	(80°-90°)	81.2	0.6			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6
2.5°	4891.9	4995.7	5114.6	5269.7	5375.6	5417.9	5453.3	5393.8	5336.3	5228.4	5190.1
5°	4569.4	4768.9	5096.4	5407.8	5682.0	5839.3	5887.6	5777.8	5582.2	5300.0	5150.9
7.5°	4090.7	4353.7	4814.2	5272.8	5665.9	5927.9	5947.0	5729.4	5344.3	4881.7	4639.9
10°	3672.5	3969.7	4502.8	5015.9	5432.1	5700.1	5647.7	5342.4	4877.7	4351.7	4078.6
12.5°	3429.5	3726.9	4270.1	4791.1	5183.1	5284.9	5178.1	4921.2	4480.7	3953.6	3678.5
15°	3378.2	3684.6	4187.4	4626.8	4869.7	4804.2	4698.3	4568.4	4254.9	3823.6	3557.6
17.5°	3533.4	3875.9	4297.3	4538.1	4528.0	4370.9	4282.2	4307.4	4254.0	3964.7	3686.6
20°	3852.8	4258.0	4576.4	4514.0	4256.0	4035.2	3983.9	4181.4	4428.3	4318.4	4013.1
22.5°	4273.1	4734.6	4957.3	4583.5	4113.9	3875.9	3865.9	4174.3	4745.7	4853.6	4481.7
25°	4747.7	5285.9	5341.3	4706.4	4098.7	3862.0	3852.8	4283.2	5127.7	5383.7	5006.8
27.5°	5328.2	5842.2	5661.8	4870.7	4165.3	3903.2	3909.2	4468.6	5525.8	5907.8	5598.3
30°	5765.6	6237.3	5859.4	5031.9	4272.1	3975.8	3990.9	4669.2	5740.4	6271.5	6071.0
32.5°	6174.8	6575.0	6048.8	5191.2	4428.3	4083.6	4136.1	4919.1	5998.4	6583.9	6517.5
35°	6627.3	6952.8	6259.5	5361.5	4652.1	4273.1	4348.6	5156.9	6254.4	6896.4	6959.9
37.5°	7140.3	7385.1	6488.3	5602.4	4974.5	4623.8	4666.2	5399.8	6432.9	7242.0	7434.6
40°	7674.4	7870.0	6738.1	5923.9	5443.2	5097.5	5117.6	5711.2	6572.9	7599.9	7895.2
42.5°	8133.0	8285.2	6989.2	6323.0	5981.4	5580.2	5597.3	6046.9	6706.9	7908.3	8264.0
45°	8499.9	8611.7	7226.0	6743.2	6555.8	6182.9	6178.8	6388.4	6886.3	8168.3	8547.3
47.5°	8841.5	8900.9	7490.0	7152.3	7151.3	6958.9	6814.8	6791.5	7125.1	8386.9	8794.0
50°	9232.5	9254.7	7838.7	7565.5	7879.0	7848.9	7582.8	7303.6	7434.6	8632.8	9053.1
52.5°	9776.8	9777.7	8271.1	7968.8	8682.3	8778.0	8468.6	7883.0	7892.1	9111.6	9500.6
55°	10416.7	10461.0	8834.4	8451.4	9522.8	9686.1	9394.7	8571.4	8549.2	9883.5	10226.1
57.5°	10911.5	11146.3	9490.6	9055.2	10307.8	10520.5	10285.7	9284.9	9356.4	10679.7	10824.8
60°	11050.6	11599.9	10144.6	9732.3	10972.0	11291.4	11052.6	10055.8	10146.5	11196.7	10997.2
62.5°	10884.4	11746.0	10810.7	10339.0	11366.1	11672.3	11501.1	10560.7	10790.6	11130.2	10705.9
65°	10391.5	11534.3	11389.3	10597.0	11139.3	11248.0	11202.8	10587.0	11140.3	10501.4	9900.7
67.5°	9240.5	10717.9	11131.2	10045.7	10080.2	9963.1	9903.8	9867.4	10747.2	9486.6	8630.8
70°	7515.2	9209.3	9900.7	8407.1	8153.1	8040.3	7844.8	8328.5	9659.8	8082.6	7103.0
72.5°	5788.9	7045.5	8120.9	6373.4	5845.4	5883.5	5661.8	6368.4	8002.0	6248.4	5423.0
75°	4110.9	4804.2	6482.2	4579.5	3880.0	3878.1	3860.8	4583.5	6313.8	4484.7	3967.8
77.5°	2963.0	3458.7	5078.3	3064.7	2753.3	2788.6	2732.1	3115.1	4922.2	3226.1	2939.8
80°	2363.4	2560.8	3282.4	2043.9	2049.9	2132.5	2120.4	2130.5	3238.1	2336.1	2198.1
82.5°	1698.2	1944.0	2509.4	1566.1	1355.5	1443.1	1460.4	1580.3	2284.7	1651.9	1449.2
85°	870.7	1185.1	2308.9	1356.5	847.6	702.5	808.2	1246.7	1984.4	989.7	706.4
87.5°	169.3	328.5	1692.0	753.9	380.9	192.4	317.5	528.2	1154.0	179.4	87.7
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6
2.5°	5124.7	4995.7	4874.7	4749.8	4653.0	4535.2	4419.2	4318.4	4220.6	4156.2	4176.3
5°	4999.7	4685.3	4403.1	4141.0	3987.8	3803.5	3639.2	3501.1	3394.2	3325.7	3367.0
7.5°	4430.4	4005.1	3633.1	3287.4	3069.8	2830.9	2639.4	2504.4	2421.7	2375.4	2442.9
10°	3847.8	3370.1	2952.9	2593.0	2378.4	2175.9	2002.5	1859.4	1748.6	1696.1	1723.4
12.5°	3430.5	2899.5	2462.1	2220.3	2035.7	1854.3	1675.0	1507.6	1366.6	1302.2	1289.0
15°	3274.3	2646.4	2199.9	1930.0	1746.6	1548.9	1355.5	1176.2	1042.0	986.7	974.5
17.5°	3343.0	2592.1	2044.8	1725.4	1459.2	1219.4	1001.8	832.5	733.6	702.5	705.4
20°	3583.8	2612.2	1919.9	1514.7	1186.2	902.0	684.2	567.4	525.1	518.1	526.0
22.5°	3914.4	2694.8	1829.2	1333.4	945.3	656.1	508.9	453.6	442.4	441.3	449.5
25°	4350.8	2856.2	1768.8	1172.1	746.9	519.9	443.5	412.2	403.1	405.1	413.2
27.5°	4864.7	3060.7	1729.3	1033.1	613.7	463.5	414.2	387.0	377.9	380.0	386.0
30°	5334.3	3240.0	1670.9	928.2	551.3	443.5	398.0	370.9	358.8	358.8	362.8
32.5°	5754.5	3395.4	1602.3	849.5	493.8	398.0	360.8	339.6	330.5	333.6	335.5
35°	6127.5	3476.9	1548.9	803.3	447.4	366.9	329.6	307.4	295.4	297.2	300.4
37.5°	6494.2	3508.2	1513.7	778.0	414.2	347.7	313.4	295.4	282.2	280.2	279.2
40°	6843.0	3501.1	1480.4	770.9	392.0	333.6	303.4	287.2	274.2	271.1	270.1
42.5°	7144.3	3478.0	1449.2	751.8	376.8	323.5	295.4	281.2	268.1	264.0	262.0
45°	7419.5	3463.9	1415.0	716.6	385.0	319.4	291.3	276.0	264.0	259.0	256.9
47.5°	7724.9	3514.2	1376.7	678.2	382.9	320.4	291.3	274.2	262.0	256.9	254.9
50°	8088.7	3684.6	1329.3	625.8	364.8	342.7	290.2	271.1	260.0	256.9	253.0
52.5°	8602.6	3960.6	1263.7	558.3	350.7	365.8	289.3	266.1	256.9	252.0	246.9
55°	9307.1	4236.9	1179.1	486.8	328.5	349.7	291.3	260.0	250.0	244.9	238.9
57.5°	9884.6	4446.4	1072.2	427.4	308.4	330.5	288.3	253.0	241.9	236.9	231.9
60°	9847.3	4466.6	970.4	389.1	296.4	297.2	295.4	247.9	234.7	230.8	226.7
62.5°	9237.5	4217.6	875.8	369.8	287.2	271.1	301.3	241.9	227.8	223.8	220.8
65°	8222.6	3638.1	825.5	369.8	279.2	256.9	263.1	233.7	220.8	216.8	214.7
67.5°	6935.8	2923.7	778.0	377.9	268.1	246.9	238.9	225.7	213.6	209.7	207.6
70°	5559.0	2300.7	744.8	374.0	258.1	235.9	225.7	214.7	202.6	201.6	199.6
72.5°	4360.8	1848.4	729.7	374.0	242.9	222.7	212.7	204.5	192.4	191.5	188.5
75°	3494.0	1387.7	667.3	366.9	227.8	205.6	196.5	189.5	177.3	178.4	176.3
77.5°	2706.0	981.6	557.3	330.5	208.6	186.5	179.4	174.4	160.3	161.2	161.2
80°	2116.3	639.0	432.4	274.2	186.5	164.3	159.2	155.1	140.0	142.1	142.1
82.5°	1450.3	380.0	313.4	220.8	160.3	140.0	139.1	132.9	116.9	117.9	120.0
85°	792.1	250.0	208.6	163.2	126.0	113.8	111.8	108.9	93.8	93.8	94.7
87.5°	146.2	134.0	123.0	107.8	84.7	81.7	78.6	81.7	70.5	68.5	68.5
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6
2.5°	4129.0	4059.4	4011.0	3968.7	3866.9	3874.0	3888.1	3908.3	3844.7	3878.1	3919.3
5°	3325.7	3268.4	3224.9	3157.5	3015.3	2964.9	2932.6	2918.7	2823.8	2844.0	2888.4
7.5°	2452.1	2450.9	2435.8	2360.2	2189.0	2085.1	2016.7	1995.4	1936.9	1959.2	2026.7
10°	1726.4	1744.5	1737.4	1669.9	1516.8	1442.1	1427.0	1469.4	1470.3	1513.7	1629.6
12.5°	1247.7	1237.5	1228.5	1173.0	1058.3	1046.0	1080.4	1138.8	1153.0	1199.2	1320.1
15°	931.3	907.0	902.0	858.7	783.1	794.1	819.3	849.5	850.5	882.9	982.6
17.5°	698.4	698.4	706.4	678.2	623.9	618.8	605.6	597.6	585.5	598.6	653.1
20°	542.1	567.4	587.5	571.4	522.0	497.8	472.7	456.5	447.4	448.4	464.7
22.5°	464.7	484.7	511.0	503.0	461.5	430.4	414.2	403.1	396.1	396.1	405.1
25°	425.3	438.5	462.5	458.6	423.3	398.0	385.0	374.0	365.8	364.8	374.0
27.5°	394.0	402.1	418.3	416.3	380.0	363.9	355.8	348.7	343.6	342.7	351.7
30°	365.8	369.8	377.9	375.0	347.7	331.6	328.5	325.5	322.5	323.5	336.7
32.5°	340.6	343.6	348.7	344.7	318.4	304.3	299.3	295.4	292.3	295.4	310.5
35°	312.4	321.6	327.5	325.5	297.2	280.2	269.1	259.0	254.9	258.1	275.2
37.5°	288.3	303.4	311.4	309.3	280.2	260.0	245.9	243.9	243.9	247.9	265.1
40°	279.2	290.2	297.2	294.3	265.1	244.9	236.9	233.7	234.7	238.9	256.9
42.5°	271.1	281.2	283.1	277.1	247.9	234.7	229.7	225.7	227.8	232.8	250.9
45°	264.0	272.0	271.1	262.0	233.7	224.8	224.8	221.7	222.7	226.7	245.9
47.5°	259.0	263.1	261.0	252.0	223.8	216.8	219.6	219.6	221.7	224.8	243.9
50°	250.9	254.0	252.0	243.9	215.7	209.7	212.7	216.8	218.6	221.7	238.9
52.5°	242.9	244.9	243.9	235.9	207.6	203.6	203.6	207.6	211.6	215.7	230.8
55°	234.7	236.9	237.8	231.9	201.6	197.5	196.5	196.5	200.5	206.6	222.7
57.5°	228.8	228.8	230.8	226.7	195.6	190.5	185.4	186.5	191.5	196.5	212.7
60°	221.7	222.7	225.7	221.7	187.4	179.4	175.3	180.4	182.4	187.4	204.5
62.5°	215.7	215.7	217.7	214.7	180.4	172.4	169.3	174.4	174.4	179.4	196.5
65°	210.7	209.7	209.7	208.6	173.4	165.3	163.2	165.3	166.2	171.3	188.5
67.5°	206.6	201.6	201.6	203.6	166.2	158.2	157.3	157.3	158.2	164.3	179.4
70°	197.5	193.4	192.4	199.6	159.2	149.2	149.2	147.1	149.2	152.2	168.3
72.5°	187.4	184.4	183.4	193.4	152.2	139.1	137.0	136.1	137.0	140.0	155.1
75°	174.4	172.4	174.4	189.5	145.2	128.0	125.0	124.0	124.0	125.0	141.2
77.5°	159.2	157.3	172.4	176.3	141.2	115.0	111.8	109.9	107.8	107.8	126.0
80°	141.2	140.0	166.2	149.2	135.0	100.8	95.7	92.7	90.6	89.7	107.8
82.5°	123.0	120.9	142.1	116.9	111.8	82.6	75.5	69.6	66.6	66.6	82.6
85°	100.8	99.8	111.8	85.7	77.7	60.5	50.3	45.4	41.3	41.3	53.4
87.5°	73.7	71.5	69.6	51.5	39.3	27.2	19.1	18.1	16.1	15.1	22.2
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6	4738.6
2.5°	3980.7	4064.6	4222.8	4352.6	4526.0	4665.2	4823.4	4891.9
5°	2969.9	3102.0	3343.9	3550.6	3836.8	4101.8	4404.1	4569.4
7.5°	2130.5	2326.0	2509.4	2767.4	3125.3	3480.9	3872.0	4090.7
10°	1762.7	1942.0	2099.2	2282.7	2558.8	2958.8	3425.5	3672.5
12.5°	1460.4	1653.8	1820.1	2016.7	2248.4	2610.3	3142.4	3429.5
15°	1119.6	1330.3	1529.9	1766.6	2050.9	2464.1	3057.7	3378.2
17.5°	767.0	992.6	1238.7	1527.8	1870.5	2402.5	3138.3	3533.4
20°	521.0	686.3	953.5	1296.1	1708.2	2373.4	3315.6	3852.8
22.5°	428.3	503.0	703.5	1078.3	1575.2	2405.7	3603.9	4273.1
25°	393.1	433.3	547.2	886.8	1473.4	2491.3	3994.0	4747.7
27.5°	370.9	405.1	479.8	749.8	1379.6	2608.1	4468.6	5328.2
30°	357.7	390.0	452.4	679.3	1294.0	2709.0	4876.8	5765.6
32.5°	328.5	352.8	404.1	639.0	1232.6	2790.7	5236.6	6174.8
35°	293.2	322.5	364.8	612.7	1230.5	2828.9	5575.2	6627.3
37.5°	280.2	308.4	339.6	598.6	1242.6	2861.1	5989.4	7140.3
40°	272.0	297.2	322.5	596.7	1252.6	2886.3	6394.6	7674.4
42.5°	265.1	290.2	319.4	582.6	1248.6	2920.6	6753.3	8133.0
45°	263.1	288.3	326.5	561.4	1247.7	2974.0	7038.5	8499.9
47.5°	261.0	299.3	324.5	538.2	1243.7	3086.8	7360.1	8841.5
50°	259.0	319.4	310.5	505.9	1213.4	3279.4	7792.3	9232.5
52.5°	258.1	322.5	295.4	461.5	1159.0	3564.7	8425.3	9776.8
55°	254.0	306.4	269.1	403.1	1080.4	3872.0	9103.6	10416.7
57.5°	244.9	273.2	254.0	345.7	967.5	4086.7	9604.4	10911.5
60°	267.1	234.7	243.9	316.5	832.5	4124.9	9626.5	11050.6
62.5°	254.9	213.6	233.7	306.4	737.7	3875.0	9186.2	10884.4
65°	203.6	202.6	224.8	316.5	723.7	3315.6	8442.5	10391.5
67.5°	185.4	194.6	215.7	328.5	732.7	2612.2	7347.9	9240.5
70°	173.4	184.4	203.6	339.6	748.7	2057.9	5915.8	7515.2
72.5°	161.2	170.3	191.5	350.7	737.7	1623.5	4734.6	5788.9
75°	146.2	154.1	174.4	321.6	632.9	1193.3	3762.1	4110.9
77.5°	128.9	136.1	153.3	254.0	475.7	830.5	2817.9	2963.0
80°	110.9	113.8	127.0	185.4	310.5	496.9	2144.7	2363.4
82.5°	87.7	88.8	96.7	136.1	193.4	317.5	1487.6	1698.2
85°	56.5	58.5	62.5	95.7	130.1	203.6	759.8	870.7
87.5°	19.1	22.2	22.2	46.4	63.5	112.8	232.8	169.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)