

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: P196205

Luminaire Tested: **NAV-AF-05-D-UNV-SLL-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196205  
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-05-D-UNV-SLL-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 4000K, 615mA 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: 17899.6 lumens  
Efficiency: N/A  
Efficacy: 110.5 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 - G3

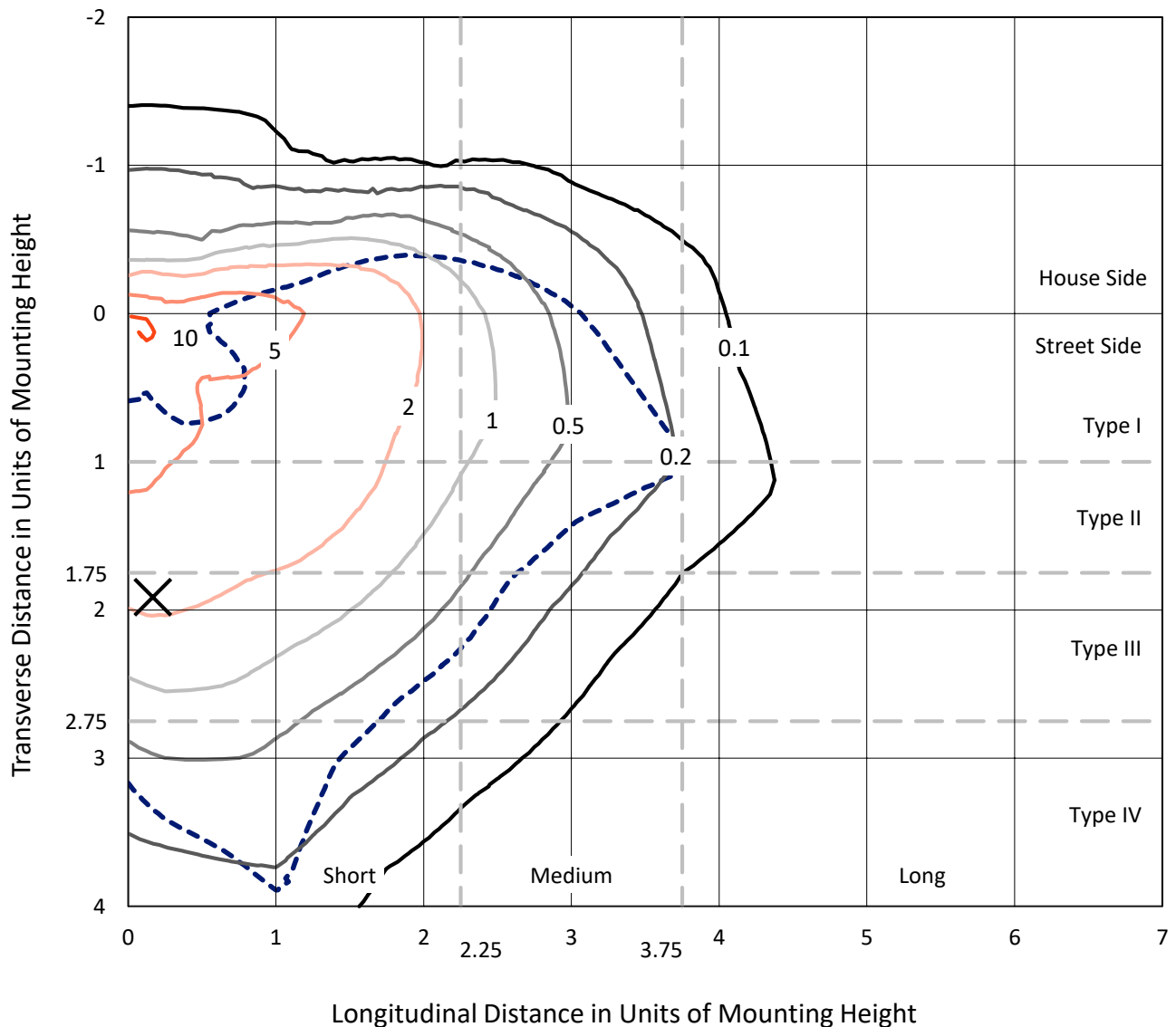
Input Watts (W): 162  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

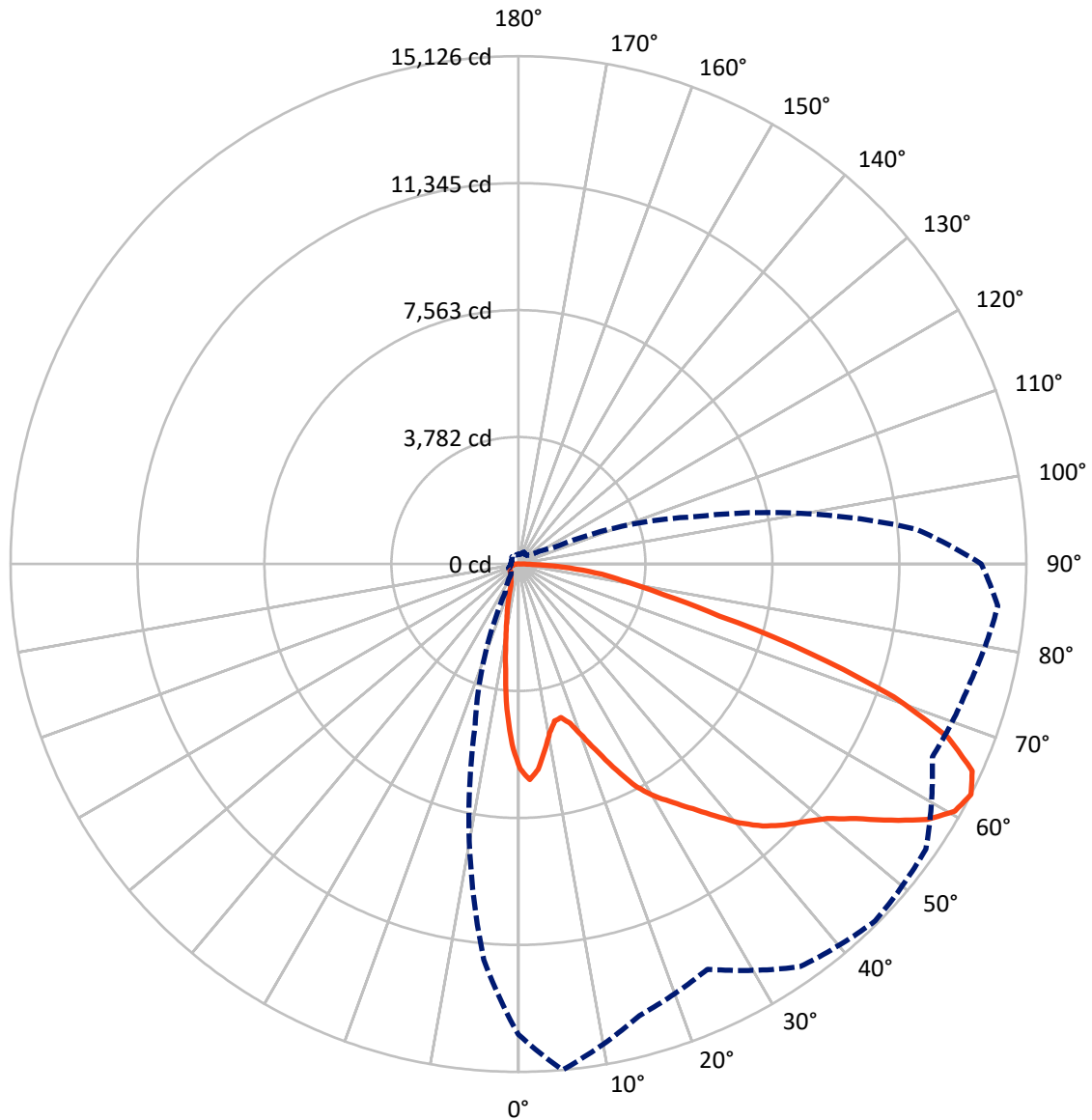
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11.2 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
<b>House Side</b>	Lumens	3170.9	0.0	3170.9
	% Fixture	17.7	0.0	17.7
<b>Street Side</b>	Lumens	14728.7	0.0	14728.7
	% Fixture	82.3	0.0	82.3
<b>Total</b>	Lumens	17899.6	0.0	17899.6
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	443.8	2.5
10°-20°	810.6	4.5
20°-30°	1165.8	6.5
30°-40°	1785.6	10.0
40°-50°	2610.6	14.6
50°-60°	3798.4	21.2
60°-70°	4401.0	24.6
70°-80°	2294.2	12.8
80°-90°	589.7	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°	17899.6	100.0
0°-180°	17899.6	100.0



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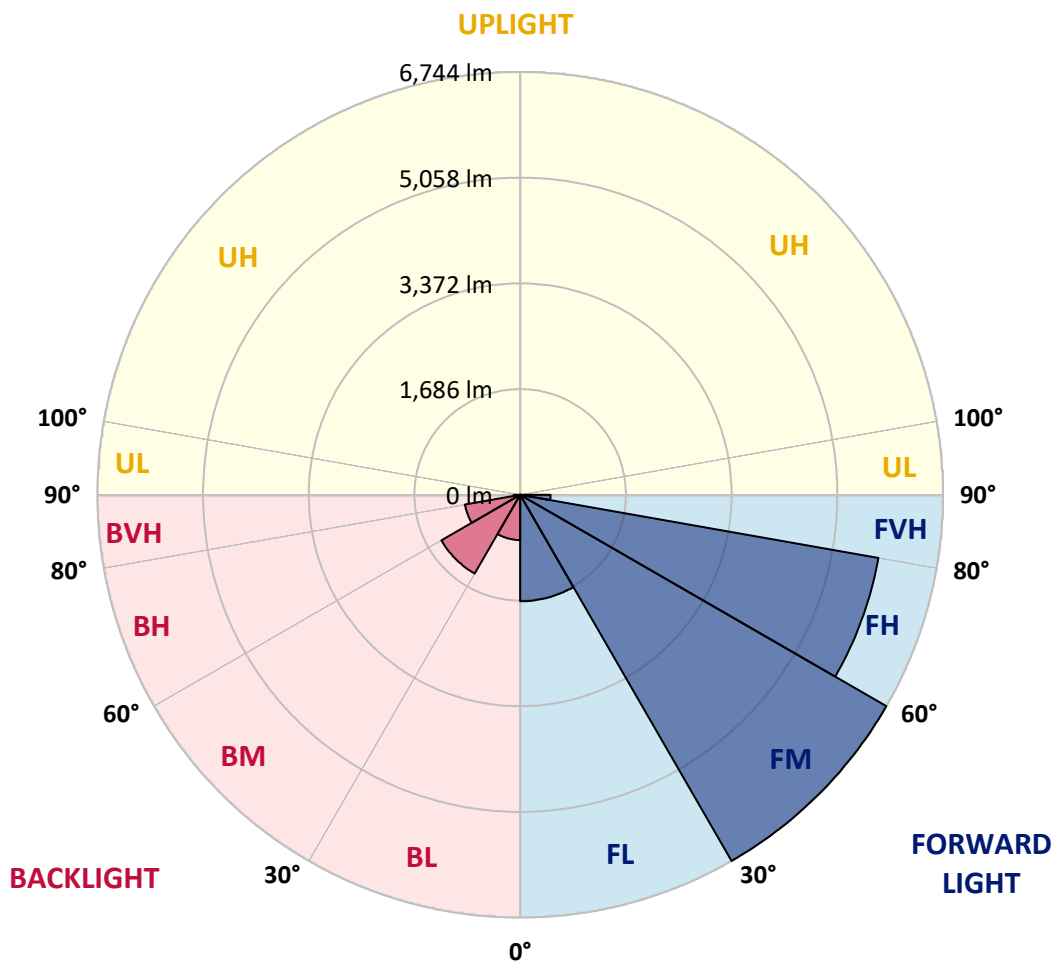
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1698.8	9.5			
FM (30°-60°)	6743.7	37.7			
FH (60°-80°)	5801.0	32.4			G3/7500
FVH (80°-90°)	485.2	2.7			G3/500
BL (0°-30°)	721.4	4.0	B2/1000		
BM (30°-60°)	1450.8	8.1	B2/2500		
BH (60°-80°)	894.1	5.0	B2/1000		G2/1000
BVH (80°-90°)	104.6	0.6			G2/225
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°	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3
2.5°	6299.6	6433.2	6586.4	6786.3	6922.5	6977.0	7022.5	6945.9	6872.0	6733.1	6683.8
5°	5884.3	6141.3	6563.0	6964.0	7317.1	7519.5	7581.8	7440.3	7188.6	6825.2	6633.1
7.5°	5267.8	5606.6	6199.7	6790.1	7296.3	7633.8	7658.4	7378.0	6882.3	6286.6	5975.2
10°	4729.2	5112.1	5798.6	6459.2	6995.2	7340.5	7273.0	6879.8	6281.4	5603.9	5252.2
12.5°	4416.5	4799.3	5498.9	6169.8	6674.7	6805.8	6668.2	6337.3	5770.1	5091.3	4737.0
15°	4350.3	4744.9	5392.4	5958.3	6271.0	6186.7	6050.4	5883.0	5479.3	4923.9	4581.3
17.5°	4550.2	4991.4	5533.9	5844.0	5831.1	5628.6	5514.4	5546.8	5478.1	5105.6	4747.4
20°	4961.5	5483.2	5893.4	5812.9	5480.7	5196.5	5130.3	5384.6	5702.6	5561.2	5167.9
22.5°	5502.8	6097.1	6383.9	5902.4	5297.7	4991.4	4978.4	5375.5	6111.4	6250.2	5771.4
25°	6114.0	6807.0	6878.4	6060.8	5278.2	4973.2	4961.5	5515.8	6603.2	6932.9	6447.6
27.5°	6861.5	7523.4	7291.1	6272.3	5363.8	5026.5	5034.2	5754.5	7116.0	7607.8	7209.3
30°	7424.8	8032.2	7545.5	6480.0	5501.4	5119.9	5139.3	6012.8	7392.4	8076.3	7818.0
32.5°	7951.7	8467.0	7789.5	6685.1	5702.6	5258.8	5326.2	6334.6	7724.6	8478.6	8393.0
35°	8534.5	8953.6	8060.8	6904.4	5990.7	5502.8	5600.0	6640.9	8054.2	8881.0	8962.7
37.5°	9195.0	9510.4	8355.4	7214.6	6406.0	5954.4	6008.9	6953.7	8284.0	9326.1	9574.0
40°	9882.8	10134.7	8677.2	7628.6	7009.5	6564.4	6590.3	7354.7	8464.3	9786.8	10167.1
42.5°	10473.4	10669.4	9000.3	8142.5	7702.5	7186.0	7208.0	7786.9	8637.0	10184.0	10642.1
45°	10945.8	11089.8	9305.4	8683.7	8442.3	7962.1	7956.9	8226.9	8868.0	10518.8	11006.7
47.5°	11385.7	11462.3	9645.4	9210.5	9209.3	8961.5	8775.8	8746.0	9175.6	10800.4	11324.8
50°	11889.2	11917.9	10094.4	9742.7	10146.3	10107.4	9764.8	9405.3	9574.0	11117.1	11658.3
52.5°	12590.1	12591.4	10651.2	10261.8	11180.6	11304.0	10905.6	10151.6	10163.2	11733.6	12234.5
55°	13414.3	13471.3	11376.6	10883.5	12263.0	12473.4	12098.2	11037.9	11009.4	12727.7	13169.0
57.5°	14051.5	14353.8	12221.5	11660.8	13274.0	13547.9	13245.5	11956.8	12048.9	13753.0	13939.9
60°	14230.6	14937.8	13063.8	12533.0	14129.3	14540.7	14233.1	12949.6	13066.4	14418.7	14161.7
62.5°	14016.4	15126.1	13921.6	13314.3	14636.8	15031.3	14810.7	13599.8	13895.7	14333.1	13786.7
65°	13381.7	14853.5	14666.7	13646.6	14344.7	14484.9	14426.5	13633.6	14346.1	13523.2	12749.8
67.5°	11899.7	13802.3	14334.4	12936.6	12980.7	12830.2	12753.6	12706.9	13839.9	12216.4	11114.5
70°	9677.8	11859.5	12749.8	10826.4	10499.4	10354.0	10102.2	10725.1	12439.6	10408.5	9147.0
72.5°	7454.7	9073.1	10457.8	8207.3	7527.3	7576.7	7291.1	8200.9	10304.7	8046.4	6983.6
75°	5293.8	6186.7	8347.6	5897.3	4996.6	4993.9	4972.0	5902.4	8130.8	5775.3	5109.5
77.5°	3815.6	4454.1	6539.7	3946.6	3545.6	3591.1	3518.3	4011.5	6338.5	4154.3	3785.7
80°	3043.4	3297.8	4226.9	2632.0	2639.7	2746.2	2730.6	2743.6	4169.9	3008.3	2830.5
82.5°	2186.9	2503.5	3231.6	2016.8	1745.6	1858.5	1880.5	2035.0	2942.1	2127.1	1866.3
85°	1121.4	1526.2	2973.3	1746.9	1091.5	904.6	1040.9	1605.4	2555.4	1274.5	909.8
87.5°	218.0	423.1	2179.0	970.8	490.6	247.9	408.8	680.1	1486.0	231.0	112.9
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°	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3
2.5°	6599.4	6433.2	6277.5	6116.6	5992.0	5840.1	5690.9	5561.2	5435.2	5352.2	5378.2
5°	6438.5	6033.6	5670.1	5332.7	5135.4	4898.0	4686.4	4508.7	4371.1	4282.8	4336.0
7.5°	5705.2	5157.5	4678.7	4233.5	3953.2	3645.6	3399.0	3225.1	3118.7	3058.9	3145.9
10°	4955.1	4339.9	3802.6	3339.3	3062.8	2802.0	2578.8	2394.4	2251.7	2184.2	2219.3
12.5°	4417.7	3733.8	3170.5	2859.0	2621.6	2388.0	2157.0	1941.6	1759.9	1676.8	1659.9
15°	4216.6	3408.1	2833.2	2485.4	2249.2	1994.8	1745.6	1514.6	1341.9	1270.6	1255.0
17.5°	4304.9	3338.0	2633.3	2221.8	1879.3	1570.3	1290.0	1072.0	944.8	904.6	908.5
20°	4615.0	3364.0	2472.4	1950.7	1527.6	1161.6	881.2	730.7	676.2	667.1	677.5
22.5°	5040.7	3470.4	2355.5	1717.0	1217.3	844.9	655.4	584.0	569.8	568.5	578.8
25°	5602.7	3678.0	2277.7	1509.4	961.7	669.6	571.0	530.8	519.1	521.7	532.1
27.5°	6264.6	3941.4	2227.1	1330.2	790.3	597.0	533.4	498.4	486.7	489.3	497.1
30°	6869.3	4172.5	2151.8	1195.3	709.9	571.0	512.6	477.6	462.1	462.1	467.2
32.5°	7410.6	4372.3	2063.5	1094.0	636.0	512.6	464.6	437.4	425.6	429.5	432.2
35°	7890.7	4477.5	1994.8	1034.4	576.2	472.4	424.4	395.9	380.2	382.9	386.8
37.5°	8363.1	4517.7	1949.3	1001.9	533.4	447.7	403.7	380.2	363.4	360.8	359.5
40°	8812.2	4508.7	1906.5	992.9	504.8	429.5	390.7	369.9	353.0	349.1	347.8
42.5°	9200.2	4478.8	1866.3	968.1	485.4	416.6	380.2	362.1	345.2	340.0	337.5
45°	9554.6	4460.6	1822.2	922.7	495.7	411.4	375.1	355.6	340.0	333.6	330.9
47.5°	9947.8	4525.4	1772.8	873.4	493.2	412.7	375.1	353.0	337.5	330.9	328.4
50°	10416.3	4744.9	1711.8	806.0	469.8	441.3	373.8	349.1	334.8	330.9	325.7
52.5°	11078.1	5100.4	1627.4	719.0	451.6	471.1	372.5	342.6	330.9	324.5	317.9
55°	11985.3	5456.0	1518.5	626.9	423.1	450.3	375.1	334.8	321.8	315.4	307.6
57.5°	12729.0	5726.0	1380.9	550.2	397.1	425.6	371.1	325.7	311.5	304.9	298.5
60°	12680.9	5752.0	1249.8	500.9	381.6	382.9	380.2	319.3	302.4	297.2	292.1
62.5°	11895.8	5431.4	1127.8	476.3	369.9	349.1	388.0	311.5	293.3	288.2	284.2
65°	10588.9	4685.1	1062.9	476.3	359.5	330.9	338.7	301.1	284.2	279.1	276.4
67.5°	8931.6	3765.0	1001.9	486.7	345.2	317.9	307.6	290.7	275.2	270.0	267.4
70°	7158.7	2962.9	959.1	481.5	332.3	303.7	290.7	276.4	260.9	259.5	257.0
72.5°	5615.7	2380.2	939.6	481.5	312.8	286.8	273.8	263.4	247.9	246.6	242.6
75°	4499.6	1787.1	859.2	472.4	293.3	264.7	253.1	244.0	228.4	229.8	227.1
77.5°	3484.7	1264.1	717.7	425.6	268.6	240.1	231.0	224.5	206.3	207.7	207.7
80°	2725.4	822.9	556.8	353.0	240.1	211.5	205.1	199.9	180.3	183.0	183.0
82.5°	1867.6	489.3	403.7	284.2	206.3	180.3	179.1	171.3	150.6	151.8	154.5
85°	1020.1	321.8	268.6	210.2	162.2	146.7	144.0	140.1	120.7	120.7	122.0
87.5°	188.2	172.6	158.4	138.9	109.0	105.2	101.3	105.2	90.8	88.3	88.3
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):**

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3
2.5°	5317.2	5227.6	5165.3	5110.8	4979.7	4988.8	5006.9	5032.9	4951.2	4993.9	5047.2
5°	4282.8	4208.8	4153.0	4066.0	3883.0	3818.2	3776.6	3758.4	3636.5	3662.5	3719.6
7.5°	3157.5	3156.3	3136.8	3039.5	2818.8	2685.1	2597.0	2569.7	2494.4	2522.9	2610.0
10°	2223.2	2246.5	2237.4	2150.4	1953.2	1857.2	1837.7	1892.3	1893.5	1949.3	2098.6
12.5°	1606.6	1593.8	1582.0	1510.7	1362.7	1347.1	1391.2	1466.5	1484.7	1544.5	1700.1
15°	1199.2	1168.0	1161.6	1105.7	1008.4	1022.6	1055.2	1094.0	1095.4	1136.9	1265.4
17.5°	899.4	899.4	909.8	873.4	803.3	796.9	780.0	769.6	754.0	770.9	841.0
20°	698.3	730.7	756.7	735.9	672.3	641.1	608.7	587.9	576.2	577.6	598.3
22.5°	598.3	624.2	658.0	647.6	594.4	554.1	533.4	519.1	510.0	510.0	521.7
25°	547.7	564.6	595.7	590.5	545.1	512.6	495.7	481.5	471.1	469.8	481.5
27.5°	507.5	517.8	538.6	536.0	489.3	468.5	458.2	449.1	442.5	441.3	453.0
30°	471.1	476.3	486.7	482.8	447.7	427.0	423.1	419.2	415.3	416.6	433.4
32.5°	438.6	442.5	449.1	443.9	410.1	391.9	385.4	380.2	376.3	380.2	399.8
35°	402.3	414.0	421.8	419.2	382.9	360.8	346.5	333.6	328.4	332.3	354.4
37.5°	371.1	390.7	401.0	398.4	360.8	334.8	316.7	314.0	314.0	319.3	341.4
40°	359.5	373.8	382.9	379.0	341.4	315.4	304.9	301.1	302.4	307.6	330.9
42.5°	349.1	362.1	364.7	356.9	319.3	302.4	295.9	290.7	293.3	299.8	323.2
45°	340.0	350.4	349.1	337.5	301.1	289.4	289.4	285.5	286.8	292.1	316.7
47.5°	333.6	338.7	336.1	324.5	288.2	279.1	282.9	282.9	285.5	289.4	314.0
50°	323.2	327.0	324.5	314.0	277.7	270.0	273.8	279.1	281.6	285.5	307.6
52.5°	312.8	315.4	314.0	303.7	267.4	262.2	262.2	267.4	272.5	277.7	297.2
55°	302.4	304.9	306.3	298.5	259.5	254.4	253.1	253.1	258.3	266.1	286.8
57.5°	294.6	294.6	297.2	292.1	251.7	245.3	238.8	240.1	246.6	253.1	273.8
60°	285.5	286.8	290.7	285.5	241.4	231.0	225.9	232.3	234.9	241.4	263.4
62.5°	277.7	277.7	280.3	276.4	232.3	221.9	218.0	224.5	224.5	231.0	253.1
65°	271.3	270.0	270.0	268.6	223.2	212.9	210.2	212.9	214.1	220.7	242.6
67.5°	266.1	259.5	259.5	262.2	214.1	203.8	202.4	202.4	203.8	211.5	231.0
70°	254.4	249.2	247.9	257.0	205.1	192.1	192.1	189.5	192.1	196.0	216.8
72.5°	241.4	237.5	236.2	249.2	196.0	179.1	176.5	175.2	176.5	180.3	199.9
75°	224.5	221.9	224.5	244.0	186.9	164.8	160.9	159.6	159.6	160.9	181.7
77.5°	205.1	202.4	221.9	227.1	181.7	147.9	144.0	141.5	138.9	138.9	162.2
80°	181.7	180.3	214.1	192.1	173.9	129.8	123.3	119.4	116.8	115.5	138.9
82.5°	158.4	155.7	183.0	150.6	144.0	106.4	97.4	89.5	85.6	85.6	106.4
85°	129.8	128.5	144.0	110.3	99.9	77.8	64.9	58.4	53.2	53.2	68.7
87.5°	94.7	92.2	89.5	66.2	50.6	35.1	24.7	23.3	20.8	19.4	28.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196205

CATALOG NUMBER: NAV-AF-05-D-UNV-SLL-600

**CANDELA DISTRIBUTION (continued):**

	295°	305°	315°	325°	335°	345°	355°	360°
0°	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3
2.5°	5126.4	5234.1	5437.8	5605.3	5828.5	6007.6	6211.4	6299.6
5°	3824.7	3994.7	4306.1	4572.2	4940.8	5282.1	5671.4	5884.3
7.5°	2743.6	2995.4	3231.6	3563.8	4024.5	4482.7	4986.2	5267.8
10°	2269.9	2500.9	2703.4	2939.6	3295.1	3810.4	4411.3	4729.2
12.5°	1880.5	2129.7	2343.9	2597.0	2895.5	3361.3	4046.6	4416.5
15°	1441.8	1713.1	1970.1	2275.0	2641.1	3173.2	3937.5	4350.3
17.5°	987.7	1278.4	1595.0	1967.4	2408.7	3094.0	4041.4	4550.2
20°	671.0	883.8	1227.7	1668.9	2199.8	3056.4	4269.8	4961.5
22.5°	551.6	647.6	905.9	1388.7	2028.5	3097.9	4641.0	5502.8
25°	506.2	558.0	704.7	1142.1	1897.4	3208.2	5143.2	6114.0
27.5°	477.6	521.7	617.8	965.6	1776.7	3358.8	5754.5	6861.5
30°	460.7	502.3	582.7	874.7	1666.4	3488.6	6280.1	7424.8
32.5°	423.1	454.2	520.4	822.9	1587.2	3593.6	6743.5	7951.7
35°	377.7	415.3	469.8	789.1	1584.7	3642.9	7179.5	8534.5
37.5°	360.8	397.1	437.4	770.9	1600.2	3684.5	7712.9	9195.0
40°	350.4	382.9	415.3	768.3	1613.2	3717.0	8234.7	9882.8
42.5°	341.4	373.8	411.4	750.1	1608.0	3761.1	8696.6	10473.4
45°	338.7	371.1	420.5	722.9	1606.6	3829.8	9064.0	10945.8
47.5°	336.1	385.4	417.9	693.0	1601.5	3975.2	9477.9	11385.7
50°	333.6	411.4	399.8	651.5	1562.6	4223.0	10034.7	11889.2
52.5°	332.3	415.3	380.2	594.4	1492.5	4590.4	10849.7	12590.1
55°	327.0	394.6	346.5	519.1	1391.2	4986.2	11723.1	13414.3
57.5°	315.4	351.7	327.0	445.2	1245.9	5262.7	12368.2	14051.5
60°	343.9	302.4	314.0	407.5	1072.0	5312.0	12396.7	14230.6
62.5°	328.4	275.2	301.1	394.6	950.0	4990.1	11829.6	14016.4
65°	262.2	260.9	289.4	407.5	931.8	4269.8	10871.8	13381.7
67.5°	238.8	250.5	277.7	423.1	943.5	3364.0	9462.4	11899.7
70°	223.2	237.5	262.2	437.4	964.2	2650.2	7618.2	9677.8
72.5°	207.7	219.3	246.6	451.6	950.0	2090.8	6097.1	7454.7
75°	188.2	198.6	224.5	414.0	815.0	1536.6	4844.7	5293.8
77.5°	166.1	175.2	197.2	327.0	612.5	1069.4	3628.7	3815.6
80°	142.8	146.7	163.6	238.8	399.8	639.9	2761.8	3043.4
82.5°	112.9	114.2	124.6	175.2	249.2	408.8	1915.6	2186.9
85°	72.6	75.3	80.5	123.3	167.5	262.2	978.6	1121.4
87.5°	24.7	28.5	28.5	59.7	81.7	145.4	299.8	218.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)