

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: P196244

Luminaire Tested: **NAV-AF-02-D-UNV-SLR-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196244
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-02-D-UNV-SLR-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR RIGHT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12071.8 lumens
Efficiency: N/A
Efficacy: 93.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

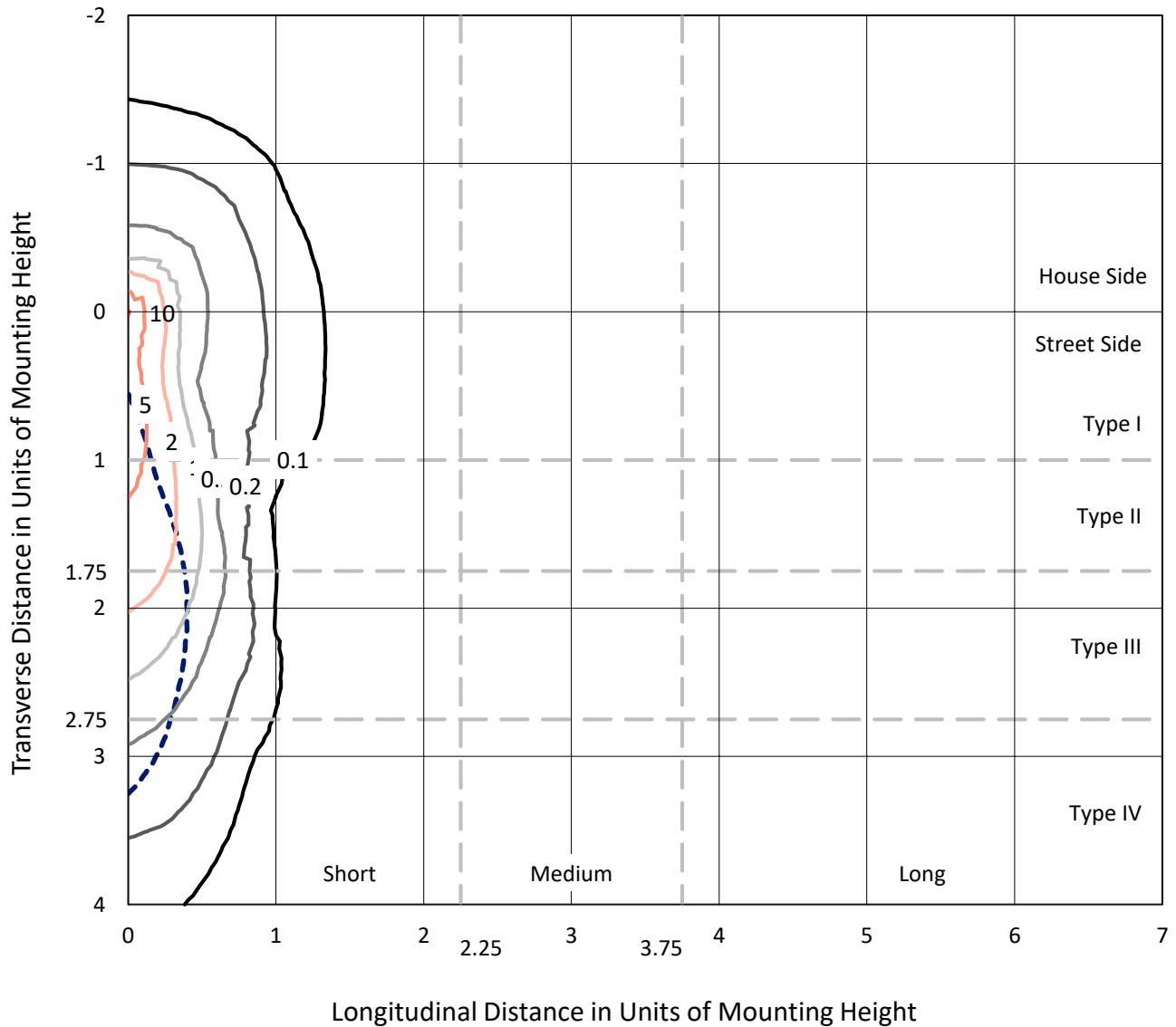
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

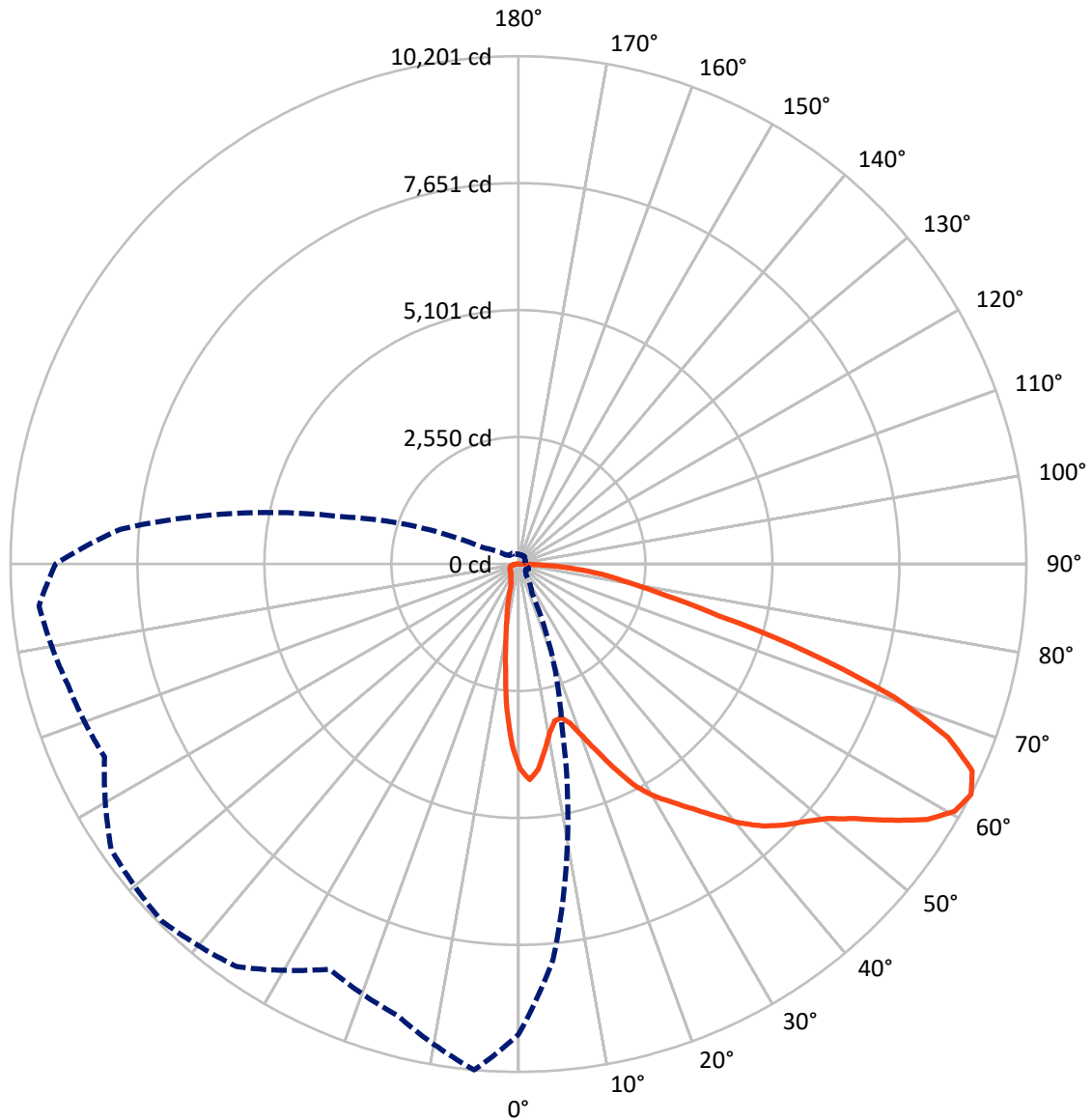
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 10.3 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 355-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2138.5	0.0	2138.5
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	9933.3	0.0	9933.3
	% Fixture	82.3	0.0	82.3
Total	Lumens	12071.8	0.0	12071.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	299.3	2.5
10°-20°	546.7	4.5
20°-30°	786.3	6.5
30°-40°	1204.2	10.0
40°-50°	1760.6	14.6
50°-60°	2561.7	21.2
60°-70°	2968.1	24.6
70°-80°	1547.2	12.8
80°-90°	397.7	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°	12071.8	100.0
0°-180°	12071.8	100.0



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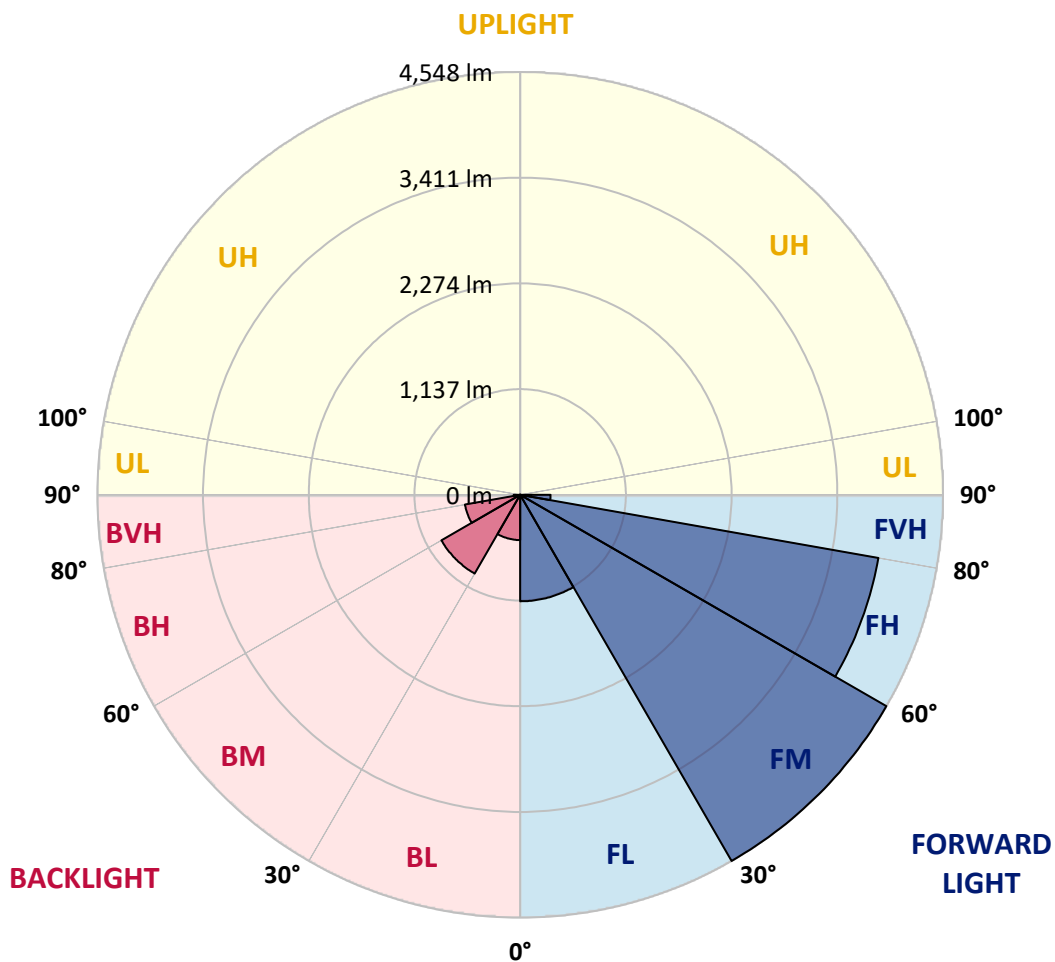
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1145.7	9.5			
FM	(30°-60°)	4548.1	37.7			
FH	(60°-80°)	3912.3	32.4			G2/5000
FVH	(80°-90°)	327.2	2.7			G3/500
BL	(0°-30°)	486.6	4.0	B1/500		
BM	(30°-60°)	978.5	8.1	B1/1000		
BH	(60°-80°)	603.0	5.0	B2/1000		G2/1000
BVH	(80°-90°)	70.5	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°	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5
2.5°	4248.6	4189.1	4051.6	3930.9	3780.3	3667.4	3530.0	3457.4	3404.0	3368.1	3339.1
5°	3968.4	3824.9	3562.3	3332.2	3083.6	2904.2	2694.0	2579.5	2508.6	2470.0	2452.5
7.5°	3552.7	3362.7	3023.2	2714.2	2403.5	2179.4	2020.1	1850.3	1760.2	1701.6	1682.2
10°	3189.5	2975.0	2569.8	2222.4	1982.5	1823.2	1686.6	1530.8	1415.4	1314.7	1277.1
12.5°	2978.5	2729.1	2267.0	1952.7	1751.4	1580.8	1436.3	1268.3	1146.6	1041.6	1001.3
15°	2933.9	2655.6	2140.0	1781.2	1534.3	1328.7	1155.3	972.4	853.3	766.7	738.8
17.5°	3068.8	2725.6	2086.6	1624.5	1326.9	1075.7	862.1	666.0	567.2	519.9	508.5
20°	3346.2	2879.6	2061.2	1483.6	1125.6	828.0	596.1	452.6	403.5	389.5	388.6
22.5°	3711.2	3130.0	2089.3	1368.1	936.5	610.9	436.8	371.9	351.9	344.0	344.0
25°	4123.4	3468.7	2163.6	1279.6	770.3	475.3	376.3	341.4	324.7	316.8	317.7
27.5°	4627.5	3881.0	2265.2	1198.3	651.2	416.6	351.9	322.1	305.5	297.6	298.5
30°	5007.4	4235.4	2352.7	1123.8	589.9	393.0	338.7	310.8	292.4	281.0	280.1
32.5°	5362.8	4547.9	2423.7	1070.4	555.0	351.0	306.4	285.3	269.5	256.5	253.8
35°	5755.8	4842.0	2456.9	1068.7	532.1	316.8	280.1	254.7	239.0	224.0	221.5
37.5°	6201.3	5201.7	2484.8	1079.2	519.9	294.9	267.8	243.4	230.2	215.3	211.9
40°	6665.2	5553.6	2506.7	1088.0	518.1	280.1	258.2	236.3	223.2	207.5	204.0
42.5°	7063.5	5865.2	2536.5	1084.4	506.0	277.4	252.1	230.2	218.0	202.2	197.8
45°	7382.0	6112.9	2583.0	1083.6	487.5	283.6	250.3	228.4	213.6	196.9	193.4
47.5°	7678.8	6392.1	2680.9	1080.1	467.4	281.8	259.9	226.7	211.9	195.2	192.5
50°	8018.4	6767.6	2848.1	1053.8	439.4	269.5	277.4	224.9	207.5	192.5	190.0
52.5°	8491.0	7317.3	3095.9	1006.6	400.9	256.5	280.1	224.0	200.4	187.3	183.8
55°	9046.8	7906.4	3362.7	938.3	350.2	233.7	266.1	220.5	193.4	179.4	174.2
57.5°	9476.6	8341.3	3549.2	840.3	300.2	220.5	237.2	212.7	184.6	170.6	166.3
60°	9597.3	8360.6	3582.5	723.0	274.9	211.9	204.0	231.9	177.7	162.8	158.5
62.5°	9453.0	7978.1	3365.4	640.7	266.1	203.1	185.6	221.5	170.6	155.8	151.4
65°	9025.0	7332.2	2879.6	628.4	274.9	195.2	175.9	176.8	163.7	148.8	144.4
67.5°	8025.4	6381.6	2268.7	636.3	285.3	187.3	168.9	161.0	155.8	142.7	137.4
70°	6526.9	5137.9	1787.3	650.3	294.9	176.8	160.2	150.6	146.2	132.2	129.5
72.5°	5027.6	4112.1	1410.0	640.7	304.6	166.3	147.9	140.0	134.8	121.6	119.1
75°	3570.2	3267.4	1036.4	549.6	279.2	151.4	133.9	126.9	122.5	108.5	107.6
77.5°	2573.3	2447.3	721.2	413.2	220.5	133.1	118.2	112.0	109.5	93.7	93.7
80°	2052.6	1862.6	431.5	269.5	161.0	110.3	98.9	96.3	93.7	77.9	78.8
82.5°	1474.8	1291.9	275.7	168.1	118.2	84.0	77.0	76.1	71.8	57.8	57.8
85°	756.3	659.9	176.8	112.9	83.2	54.2	50.7	49.0	46.3	35.9	35.9
87.5°	147.0	202.2	98.0	55.1	40.3	19.2	19.2	16.7	19.2	13.1	14.0
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5
2.5°	3394.4	3376.8	3364.6	3358.4	3446.8	3483.6	3525.6	3586.0	3627.2	3609.6	3665.6
5°	2534.8	2547.0	2575.1	2618.9	2742.2	2800.8	2838.5	2888.4	2924.3	2888.4	2947.9
7.5°	1733.1	1751.4	1810.9	1901.1	2049.9	2115.6	2128.7	2129.6	2121.7	2063.0	2103.3
10°	1276.1	1239.4	1252.5	1317.3	1450.3	1509.0	1515.1	1499.3	1496.7	1473.0	1518.6
12.5°	989.1	938.3	908.5	919.0	1018.9	1066.9	1074.8	1083.6	1119.5	1130.9	1186.8
15°	737.9	711.6	689.7	680.1	745.7	783.4	787.8	808.7	846.4	856.9	905.0
17.5°	519.0	526.0	537.5	541.8	589.0	613.6	606.6	606.6	612.6	610.1	637.2
20°	396.5	410.5	432.4	453.4	496.2	510.2	492.8	470.9	456.8	449.9	456.0
22.5°	350.2	359.8	373.8	400.9	436.8	443.8	421.0	403.5	390.4	383.4	384.2
25°	324.7	334.4	345.8	367.6	398.2	401.7	380.7	369.4	358.9	351.9	350.2
27.5°	302.8	308.9	316.0	330.0	361.5	363.2	349.2	342.3	335.2	330.0	328.3
30°	282.7	285.3	288.0	302.0	325.6	328.3	321.2	317.7	315.1	311.6	311.6
32.5°	256.5	259.9	264.3	276.6	299.3	302.8	298.5	295.8	291.4	289.7	287.0
35°	224.9	233.7	243.4	258.2	282.7	284.5	279.2	271.3	260.9	258.2	256.5
37.5°	211.9	213.6	225.9	243.4	268.7	270.5	263.4	250.3	242.4	243.4	245.1
40°	203.1	205.7	212.7	230.2	255.5	258.2	252.1	242.4	234.6	235.5	238.0
42.5°	196.1	199.6	204.0	215.3	240.7	245.9	244.2	235.5	227.6	229.3	232.8
45°	192.5	195.2	195.2	203.1	227.6	235.5	236.3	229.3	223.2	224.9	229.3
47.5°	190.8	190.8	188.2	194.4	218.8	226.7	228.4	224.9	221.5	223.2	227.6
50°	188.2	184.6	182.1	187.3	211.9	218.8	220.5	218.0	219.7	223.2	225.9
52.5°	180.3	176.8	176.8	180.3	204.8	211.9	212.7	210.9	214.4	218.8	223.2
55°	170.6	170.6	171.5	175.0	201.3	206.5	205.7	204.0	207.5	212.7	217.1
57.5°	161.9	161.0	165.4	169.8	196.9	200.4	198.7	198.7	201.3	205.7	210.1
60°	156.7	152.3	155.8	162.8	192.5	196.1	193.4	192.5	196.9	200.4	204.0
62.5°	151.4	147.0	149.7	156.7	186.5	189.0	187.3	187.3	191.7	194.4	197.8
65°	143.5	141.8	143.5	150.6	181.2	182.1	182.1	182.9	186.5	188.2	191.7
67.5°	136.6	136.6	137.4	144.4	176.8	175.0	175.0	179.4	180.3	182.1	185.6
70°	127.8	129.5	129.5	138.3	173.3	167.2	168.1	171.5	173.3	175.0	175.9
72.5°	118.2	119.1	120.8	132.2	168.1	159.3	160.2	162.8	163.7	166.3	167.2
75°	107.6	108.5	111.2	126.0	164.6	151.4	149.7	151.4	153.1	154.9	154.1
77.5°	95.4	97.2	99.7	122.5	153.1	149.7	136.6	138.3	140.0	140.0	139.1
80°	80.5	83.2	87.6	117.3	129.5	144.4	121.6	122.5	123.4	123.4	121.6
82.5°	60.4	65.7	71.8	97.2	101.6	123.4	105.1	106.8	104.1	102.4	101.6
85°	39.4	43.8	52.5	67.4	74.4	97.2	86.6	87.6	82.2	81.4	81.4
87.5°	15.8	16.7	23.6	34.2	44.6	60.4	62.2	63.9	59.5	59.5	61.3
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°	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5
2.5°	3750.5	3838.1	3938.8	4041.2	4125.2	4233.7	4338.7	4450.8	4507.6	4540.9	4634.6
5°	3040.7	3160.6	3303.3	3463.4	3596.5	3824.1	4069.1	4342.2	4473.6	4603.1	4848.2
7.5°	2175.1	2292.3	2458.7	2666.1	2855.2	3155.4	3478.3	3847.7	4029.7	4239.8	4641.5
10°	1614.8	1739.1	1889.7	2065.6	2252.0	2564.5	2926.9	3341.8	3542.3	3779.4	4236.3
12.5°	1309.4	1454.7	1610.5	1768.1	1928.3	2138.3	2518.2	2979.4	3194.8	3433.7	3891.5
15°	1021.4	1177.2	1345.3	1516.8	1676.1	1910.8	2298.5	2843.8	3089.7	3320.8	3695.4
17.5°	723.0	870.0	1059.1	1267.4	1498.4	1775.9	2251.2	2903.2	3201.7	3443.4	3694.5
20°	492.8	594.3	783.4	1030.2	1315.5	1667.4	2268.7	3112.4	3485.3	3750.5	3846.0
22.5°	393.8	442.0	569.8	821.0	1158.0	1588.6	2340.5	3399.6	3892.3	4215.3	4121.7
25°	358.0	385.1	451.6	648.6	1017.9	1536.1	2480.6	3778.6	4348.4	4675.7	4453.4
27.5°	336.1	359.8	402.6	533.1	897.1	1502.0	2658.2	4225.0	4862.2	5130.8	4799.1
30°	322.1	345.8	385.1	478.7	806.1	1451.2	2814.0	4632.8	5272.6	5446.8	4985.6
32.5°	294.9	313.3	345.8	428.9	737.9	1391.7	2948.8	4997.8	5660.4	5718.2	5209.6
35°	267.0	286.2	318.6	388.6	697.6	1345.3	3019.6	5321.7	6044.6	5989.5	5432.0
37.5°	256.5	272.2	302.0	359.8	675.8	1314.7	3046.9	5640.2	6456.9	6289.7	5586.8
40°	249.5	263.4	289.7	340.4	669.6	1285.7	3040.7	5943.1	6856.8	6600.4	5708.6
42.5°	244.2	256.5	281.0	327.3	652.9	1258.6	3020.6	6204.8	7177.2	6868.3	5825.0
45°	239.8	253.0	277.4	334.4	622.4	1228.9	3008.3	6443.8	7423.1	7094.1	5980.8
47.5°	238.0	253.0	278.3	332.6	589.0	1195.6	3052.1	6708.9	7637.7	7284.0	6188.1
50°	235.5	252.1	297.6	316.8	543.5	1154.5	3200.0	7024.9	7862.6	7497.6	6456.9
52.5°	231.1	251.2	317.7	304.6	484.9	1097.6	3439.8	7471.3	8251.2	7913.3	6854.3
55°	225.9	253.0	303.7	285.3	422.8	1024.1	3679.7	8083.2	8881.4	8583.8	7425.0
57.5°	219.7	250.3	287.0	267.8	371.1	931.3	3861.7	8584.7	9401.3	9275.3	8126.0
60°	215.3	256.5	258.2	257.4	337.9	842.9	3879.2	8552.3	9551.0	9724.3	8812.2
62.5°	210.1	261.7	235.5	249.5	321.2	760.6	3663.0	8022.8	9298.0	9666.5	9371.6
65°	203.1	228.4	223.2	242.4	321.2	716.9	3159.7	7141.3	8598.7	9120.3	9675.3
67.5°	196.1	207.5	214.4	232.8	328.3	675.8	2539.2	6023.6	7495.9	8238.9	9333.9
70°	186.5	196.1	204.8	224.0	324.7	646.8	1998.2	4828.0	6168.9	7019.7	8389.5
72.5°	177.7	184.6	193.4	210.9	324.7	633.7	1605.2	3787.3	4709.9	5426.7	6949.6
75°	164.6	170.6	178.5	197.8	318.6	579.4	1205.2	3034.6	3445.9	3895.0	5483.6
77.5°	151.4	155.8	161.9	181.2	287.0	484.1	852.5	2350.1	2553.2	2801.8	4274.8
80°	134.8	138.3	142.7	161.9	238.0	375.5	555.0	1838.0	1908.9	2028.9	2812.3
82.5°	115.5	120.8	121.6	139.1	191.7	272.2	330.0	1259.6	1258.6	1434.6	1984.2
85°	94.5	97.2	98.9	109.5	141.8	181.2	217.1	687.9	613.6	859.5	1723.4
87.5°	70.9	68.2	70.9	73.6	93.7	106.8	116.4	126.9	76.1	155.8	1002.2
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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CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-1200

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5
2.5°	4684.5	4736.1	4705.5	4668.7	4576.8	4442.0	4338.7	4248.6
5°	5018.0	5113.3	5071.3	4934.8	4696.7	4426.2	4141.8	3968.4
7.5°	4975.9	5165.0	5148.3	4920.8	4579.4	4181.2	3781.1	3552.7
10°	4639.8	4905.0	4950.6	4717.7	4356.2	3910.7	3447.7	3189.5
12.5°	4274.0	4497.2	4590.0	4501.5	4161.1	3708.5	3236.7	2978.5
15°	3967.6	4080.6	4172.4	4229.3	4018.4	3636.8	3200.0	2933.9
17.5°	3740.9	3719.0	3796.1	3932.6	3941.3	3732.1	3366.3	3068.8
20°	3631.5	3459.9	3504.6	3696.2	3920.4	3974.6	3698.1	3346.2
22.5°	3625.3	3357.5	3366.3	3572.9	3980.7	4305.5	4112.1	3711.2
25°	3719.9	3346.2	3354.1	3559.8	4087.5	4639.0	4590.8	4123.4
27.5°	3881.0	3395.2	3390.0	3617.5	4230.2	4917.3	5073.9	4627.5
30°	4055.2	3466.1	3453.0	3710.2	4370.3	5088.9	5417.0	5007.4
32.5°	4272.3	3592.1	3546.6	3846.0	4508.6	5253.4	5710.3	5362.8
35°	4478.8	3776.8	3711.2	4040.2	4656.5	5436.3	6038.5	5755.8
37.5°	4689.7	4052.5	4015.8	4320.3	4865.7	5635.0	6414.0	6201.3
40°	4960.2	4444.6	4427.1	4727.4	5144.8	5852.1	6835.1	6665.2
42.5°	5251.6	4861.3	4846.4	5194.7	5491.5	6070.0	7195.6	7063.5
45°	5548.4	5366.3	5369.8	5693.6	5856.5	6275.7	7479.2	7382.0
47.5°	5898.4	5918.6	6043.8	6210.9	6211.8	6505.0	7730.4	7678.8
50°	6343.1	6585.6	6816.6	6842.9	6570.7	6807.8	8037.6	8018.4
52.5°	6846.4	7354.9	7623.6	7540.5	6920.8	7183.4	8491.9	8491.0
55°	7444.2	8159.3	8412.2	8270.5	7340.1	7672.6	9085.3	9046.8
57.5°	8063.9	8933.0	9137.0	8952.3	7864.3	8242.4	9680.5	9476.6
60°	8733.4	9599.1	9806.5	9529.1	8452.5	8810.5	10074.4	9597.3
62.5°	9172.0	9988.6	10137.4	9871.4	8979.5	9389.1	10201.3	9453.0
65°	9194.7	9729.5	9768.9	9674.4	9203.5	9891.4	10017.5	9025.0
67.5°	8569.8	8601.3	8652.9	8754.5	8724.7	9667.4	9308.5	8025.4
70°	7233.3	6813.2	6983.0	7081.0	7301.5	8598.7	7998.2	6526.9
72.5°	5530.9	4917.3	5109.8	5076.6	5535.2	7052.9	6119.0	5027.6
75°	3980.7	3353.1	3368.1	3369.8	3977.2	5629.7	4172.4	3570.2
77.5°	2705.5	2372.8	2421.8	2391.2	2661.7	4410.5	3003.9	2573.3
80°	1850.3	1841.6	1852.1	1780.3	1775.0	2850.8	2224.1	2052.6
82.5°	1372.4	1268.3	1253.4	1177.2	1360.2	2179.4	1688.4	1474.8
85°	1082.7	701.9	610.1	736.1	1178.1	2005.3	1029.3	756.3
87.5°	458.7	275.7	167.2	330.8	654.7	1469.6	285.3	147.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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