

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: P196072

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196072
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24258)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-SL2-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20357.8 lumens
Efficiency: N/A
Efficacy: 90.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B2 - U0 - G4

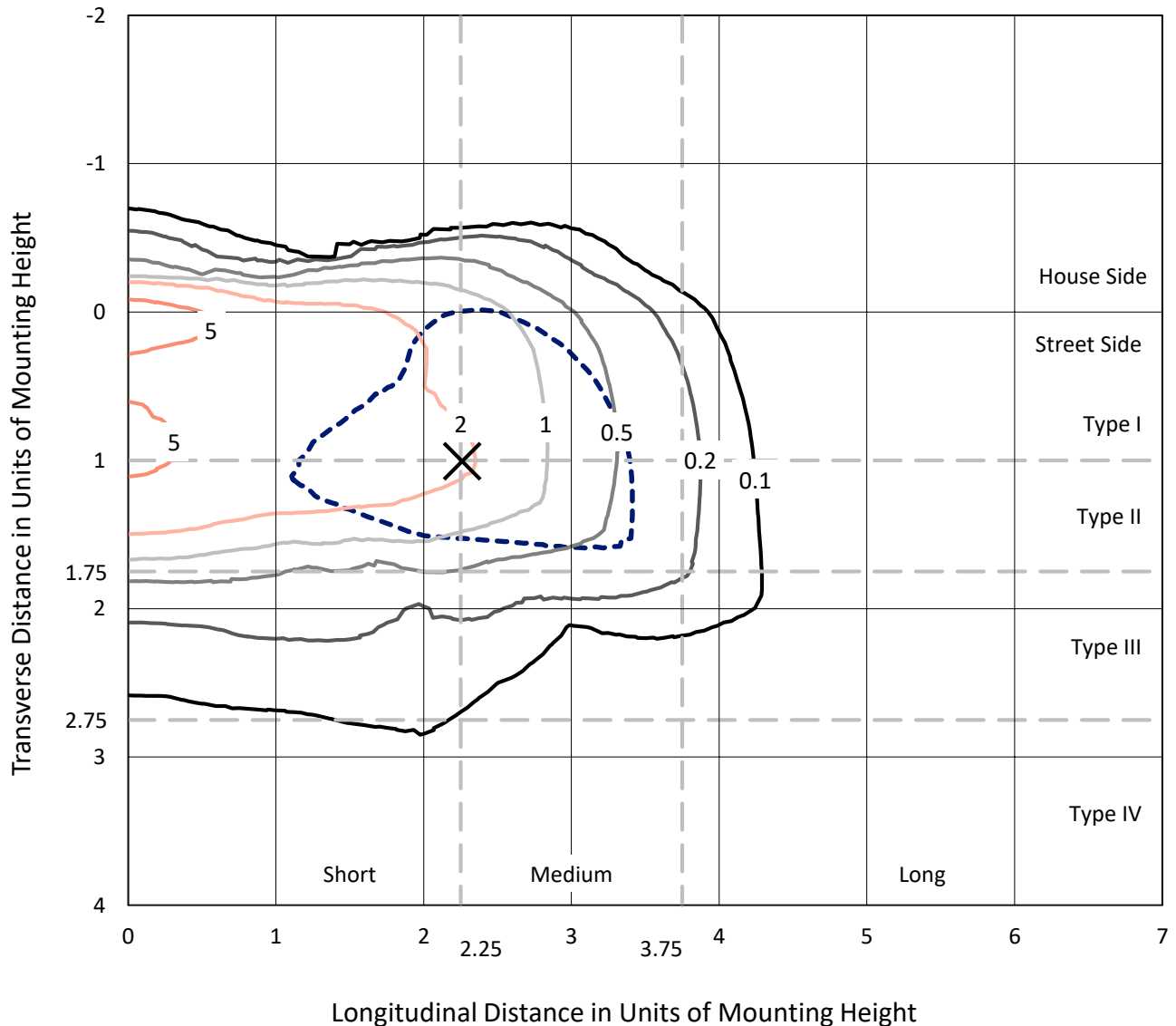
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196072
 CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-HSS

Iso-Footcandle Lines of Horizontal Illumination

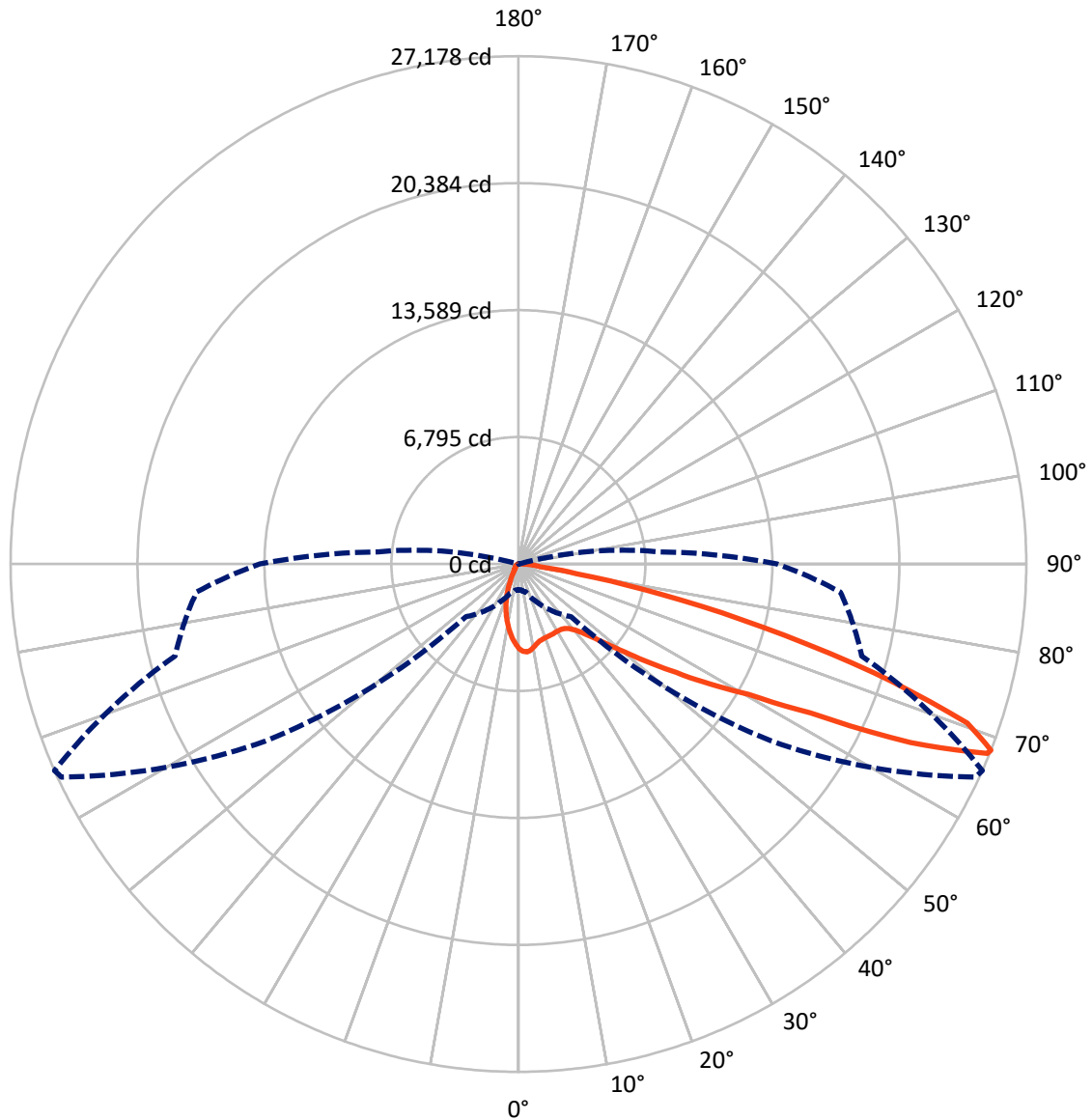
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.3 fc
 Type II - Medium - Semi-Cutoff

REPORT NUMBER: P196072
CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

REPORT NUMBER: P196072

CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-HSS

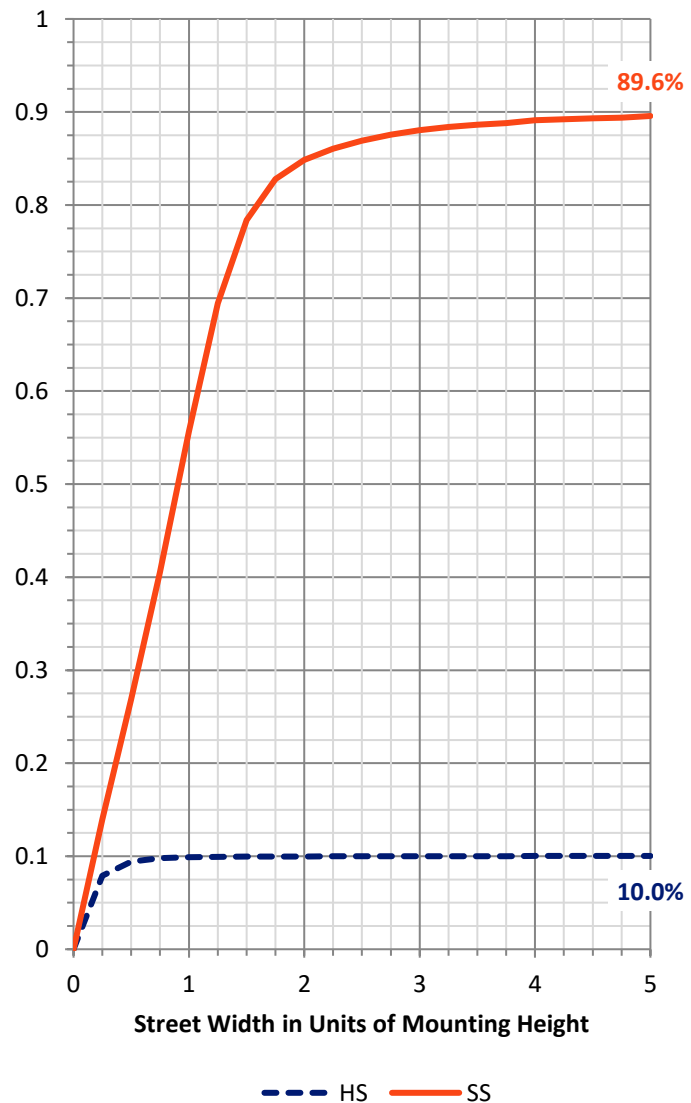
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2062.0	0.0	2062.0
	% Fixture	10.1	0.0	10.1
Street Side	Lumens	18295.7	0.0	18295.7
	% Fixture	89.9	0.0	89.9
Total	Lumens	20357.8	0.0	20357.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	371.8	1.8
10°-20°	800.0	3.9
20°-30°	1159.3	5.7
30°-40°	1774.6	8.7
40°-50°	3035.4	14.9
50°-60°	4748.2	23.3
60°-70°	5467.4	26.9
70°-80°	2736.0	13.4
80°-90°	265.0	1.3
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°	20357.8	100.0
0°-180°	20357.8	100.0



REPORT NUMBER: P196072

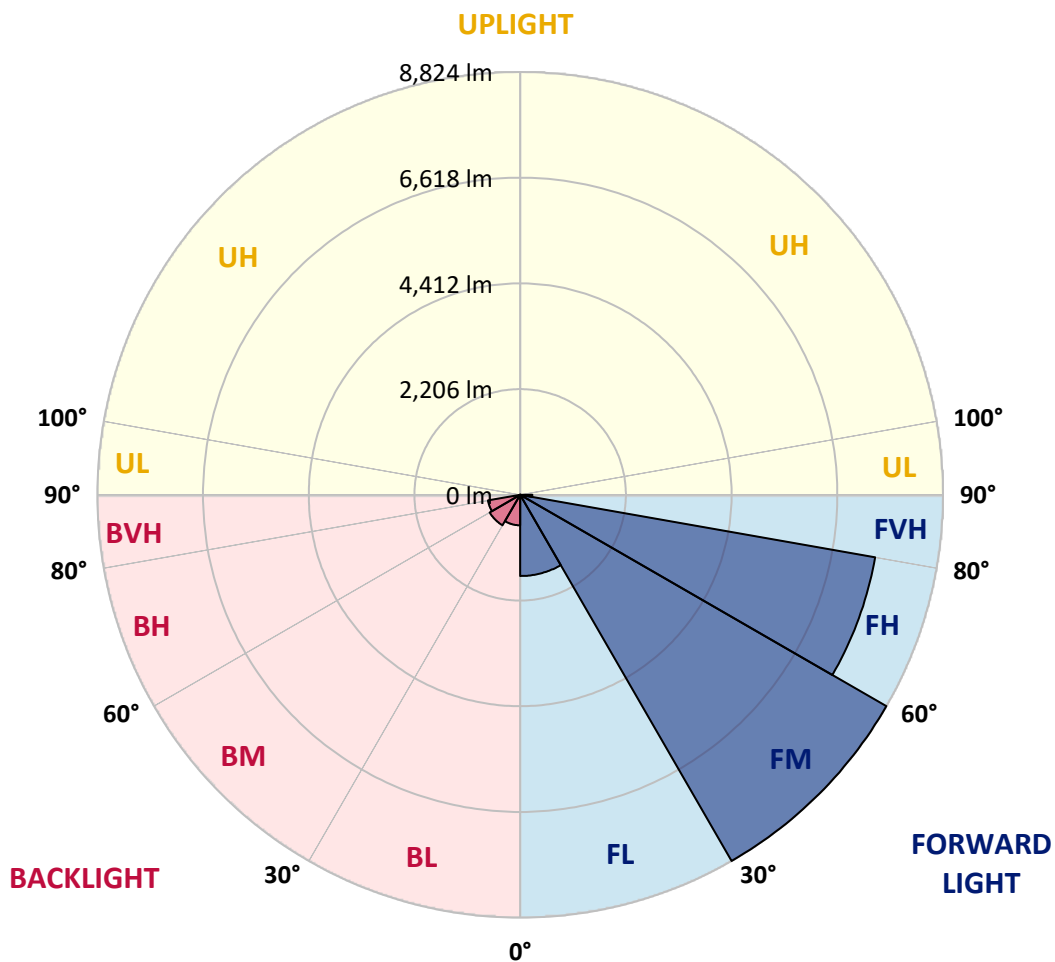
CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1694.7	8.3			
FM	(30°-60°)	8824.0	43.3			
FH	(60°-80°)	7522.1	36.9			G4/12000
FVH	(80°-90°)	254.9	1.3			G3/500
BL	(0°-30°)	636.4	3.1	B2/1000		
BM	(30°-60°)	734.3	3.6	B1/1000		
BH	(60°-80°)	681.3	3.3	B2/1000		G2/1000
BVH	(80°-90°)	10.0	0.0			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G4

Type II Medium





REPORT NUMBER: P196072

CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	66°	75°	85°
0°	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6
2.5°	4770.4	4773.6	4772.1	4776.9	4773.6	4749.7	4724.1	4669.8	4674.6	4604.2	4525.9
5°	4434.8	4462.0	4489.1	4516.3	4581.9	4639.4	4708.1	4724.1	4724.1	4663.3	4548.3
7.5°	4092.8	4094.5	4124.7	4161.6	4249.4	4354.9	4514.7	4658.6	4661.8	4677.7	4551.5
10°	3835.6	3843.5	3864.3	3904.3	3992.2	4096.0	4275.0	4500.4	4518.0	4636.2	4519.5
12.5°	3635.8	3645.4	3667.7	3714.0	3794.0	3901.0	4089.7	4346.9	4370.9	4596.2	4510.0
15°	3482.3	3495.1	3512.7	3559.1	3645.4	3758.8	3965.0	4244.6	4273.4	4580.3	4540.3
17.5°	3418.4	3418.4	3416.9	3448.8	3535.1	3650.2	3865.9	4190.3	4227.0	4593.0	4591.4
20°	3445.6	3440.8	3407.2	3399.3	3451.9	3567.0	3787.6	4155.1	4196.8	4617.0	4653.8
22.5°	3589.4	3579.8	3504.7	3442.4	3426.4	3503.1	3734.9	4131.2	4180.7	4666.6	4736.9
25°	3894.7	3865.9	3762.0	3621.3	3495.1	3487.1	3698.1	4118.4	4171.2	4724.1	4828.0
27.5°	4291.0	4283.0	4116.8	3928.2	3685.3	3539.9	3686.9	4108.8	4161.6	4765.6	4901.5
30°	4783.2	4786.4	4594.7	4348.6	3980.9	3688.5	3722.1	4104.0	4158.4	4768.8	4933.5
32.5°	5291.4	5294.6	5134.8	4871.1	4385.3	3944.2	3821.1	4126.4	4175.9	4756.0	4931.9
35°	5780.5	5785.3	5689.3	5476.8	4925.5	4299.0	4008.1	4203.1	4238.3	4764.1	4928.7
37.5°	6399.0	6418.1	6299.8	6101.7	5603.1	4819.9	4313.4	4358.1	4386.9	4829.6	4952.6
40°	7453.7	7428.2	7089.4	6753.7	6338.2	5454.5	4754.5	4625.0	4634.6	4999.0	5043.8
42.5°	8682.7	8650.7	8070.6	7492.1	7094.2	6220.0	5318.6	5034.1	5032.5	5283.4	5241.9
45°	9740.6	9721.5	9111.0	8339.1	7931.6	7065.3	6013.8	5623.9	5604.6	5775.7	5603.1
47.5°	10491.8	10475.8	10014.0	9240.4	8900.0	7995.5	6881.6	6427.7	6387.7	6419.7	6189.6
50°	10565.2	10547.7	10386.3	9889.3	10031.5	9360.3	7954.0	7480.8	7429.7	7380.2	7076.6
52.5°	9878.1	9876.5	9961.2	9929.3	10824.1	11116.6	9269.2	8783.4	8722.6	8596.4	8294.3
55°	8473.3	8465.3	8786.5	9253.2	10806.6	12929.0	11274.9	10333.5	10253.6	10001.2	9604.8
57.5°	6191.2	6149.7	6820.8	7810.1	10047.5	13721.6	14459.9	12259.3	12126.7	11326.0	10715.5
60°	3418.4	3434.4	4297.4	5468.8	8249.6	13564.9	17390.9	14504.7	14156.3	12468.6	11853.3
62.5°	1916.2	1956.1	2598.6	3554.2	5259.5	12294.4	18963.5	18369.0	17530.0	13801.6	13291.7
65°	1449.5	1473.5	1796.3	2742.4	3316.1	8591.6	19214.4	23772.3	23048.3	15821.6	15581.8
67.5°	1364.8	1384.0	1542.2	2274.1	3020.5	4455.6	17325.4	26968.6	27059.6	18576.8	17355.8
68°	1374.4	1398.4	1556.6	2187.9	3015.7	3985.7	16519.9	26984.5	27178.0	19021.1	17295.0
70°	1262.5	1269.0	1646.0	2146.3	2923.0	3140.4	11950.8	25135.5	25482.3	19550.0	15700.1
72.5°	482.6	484.3	738.4	1858.6	3062.0	3158.0	6020.2	19866.4	19884.0	17013.7	12240.1
75°	250.9	210.9	231.7	581.8	2924.6	3078.1	3020.5	13564.9	13480.2	11506.6	7500.1
77.5°	172.6	147.0	155.0	201.3	1216.2	3076.4	2181.4	7800.5	7782.9	4895.1	2139.9
80°	97.5	84.7	92.7	169.4	426.7	2887.8	2032.8	3352.9	3159.5	859.8	346.8
82.5°	49.5	41.5	49.5	142.2	265.3	1817.1	1976.9	1315.3	1171.5	204.6	225.4
85°	12.8	12.8	23.9	99.1	164.6	596.1	1772.4	949.3	853.4	89.5	159.8
87.5°	3.2	1.6	9.6	36.7	59.1	129.4	982.9	529.0	455.5	46.3	92.7
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: P196072

CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6	4535.6
2.5°	4493.9	4449.2	4361.4	4262.2	4192.0	4115.2	4070.4	4016.1	3974.6	3937.8	3965.0
5°	4478.0	4391.6	4196.8	3977.7	3794.0	3618.2	3487.1	3362.4	3268.2	3209.1	3233.0
7.5°	4436.4	4308.6	3992.2	3650.2	3349.7	3066.8	2836.6	2630.5	2470.7	2384.4	2411.6
10°	4366.2	4185.5	3760.4	3285.8	2865.5	2465.9	2124.0	1817.1	1585.4	1476.6	1502.2
12.5°	4315.0	4076.9	3520.7	2934.1	2381.2	1813.9	1360.0	1008.4	827.9	719.1	728.8
15°	4292.6	3992.2	3297.0	2563.4	1852.3	1165.0	735.1	532.1	469.8	447.4	449.1
17.5°	4295.8	3925.1	3084.4	2178.3	1318.5	669.6	450.7	405.9	396.3	391.6	391.6
20°	4303.8	3857.9	2863.9	1777.2	843.8	431.5	375.5	361.2	356.4	350.0	351.6
22.5°	4327.8	3806.8	2641.8	1374.4	519.4	351.6	332.5	319.7	311.6	302.1	303.6
25°	4364.5	3768.4	2422.8	989.3	366.0	306.9	289.3	271.7	257.3	246.1	247.8
27.5°	4386.9	3714.0	2189.4	674.4	303.6	268.5	244.5	220.5	204.6	195.0	193.3
30°	4370.9	3626.2	1924.2	442.7	268.5	231.7	203.0	175.8	159.8	151.8	151.8
32.5°	4327.8	3512.7	1631.7	322.8	238.1	199.8	164.6	140.7	129.4	124.7	126.2
35°	4278.2	3394.5	1320.0	273.3	214.1	169.4	134.2	115.1	110.3	108.6	108.6
37.5°	4251.1	3292.2	1021.2	247.8	191.8	140.7	110.3	99.1	94.3	94.3	94.3
40°	4281.5	3213.8	756.0	228.5	169.4	116.6	92.7	84.7	83.1	83.1	83.1
42.5°	4410.9	3186.7	552.9	212.6	147.0	97.5	79.9	73.6	71.9	73.6	73.6
45°	4663.3	3245.8	418.7	196.6	126.2	79.9	68.7	63.9	63.9	65.6	65.6
47.5°	5091.6	3397.6	343.6	180.6	105.5	67.1	59.1	56.0	56.0	57.5	57.5
50°	5756.5	3678.9	308.4	163.1	87.9	57.5	49.5	48.0	48.0	49.5	51.1
52.5°	6766.5	4214.3	290.8	145.5	71.9	48.0	41.5	40.0	41.5	43.2	43.2
55°	7890.0	4899.9	270.1	127.9	60.8	40.0	33.6	33.6	35.2	38.4	38.4
57.5°	8936.8	5561.5	250.9	105.5	52.8	31.9	27.2	27.2	30.4	33.6	33.6
60°	10042.7	6210.3	225.4	84.7	44.7	25.6	22.4	22.4	27.2	30.4	31.9
62.5°	11409.1	6964.7	191.8	67.1	35.2	19.1	16.0	20.8	25.6	30.4	30.4
65°	13384.4	7902.8	150.3	52.8	27.2	14.4	12.8	19.1	23.9	28.7	30.4
67.5°	14102.0	7782.9	113.4	43.2	20.8	11.2	11.2	17.6	23.9	28.7	28.7
68°	13839.9	7520.8	108.6	41.5	19.1	11.2	11.2	17.6	23.9	28.7	28.7
70°	12059.6	6148.0	89.5	31.9	16.0	9.6	9.6	16.0	23.9	27.2	28.7
72.5°	9029.5	4084.8	76.7	20.8	14.4	9.6	8.0	16.0	22.4	27.2	27.2
75°	5179.6	1695.6	65.6	16.0	12.8	8.0	8.0	14.4	22.4	27.2	27.2
77.5°	1463.8	396.3	52.8	12.8	11.2	8.0	6.3	14.4	20.8	25.6	25.6
80°	268.5	118.3	41.5	11.2	9.6	8.0	6.3	14.4	20.8	25.6	25.6
82.5°	177.4	56.0	30.4	11.2	9.6	8.0	6.3	12.8	19.1	23.9	23.9
85°	132.7	40.0	19.1	11.2	9.6	8.0	6.3	12.8	19.1	23.9	23.9
87.5°	73.6	17.6	14.4	12.8	11.2	8.0	6.3	11.2	17.6	22.4	22.4
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)