

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: P12448-320

Luminaire Tested: **MPWP-FC-320-XX**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P12448-320  
Test Lab: COOPER LIGHTING INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: MPWP-FC-320-XX  
Description: LUMARK WAL-PAK HID WALL FIXTURE WITH FULL-CUTOFF DOOR WITH CLEAR GLASS LENS  
Light Source: MOGUL BASE CLEAR QUARTZ ED37 320W PULSE START METAL HALIDE LAMP 320 WATTS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: 30000 (1 lamp)  
Luminaire Lumens: 14303.6 lumens  
Efficiency: 47.7%  
Efficacy: 44.7 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.73' x L: 1.15' x H: 0.1')  
IES Classification: Type II - Short - Full Cutoff  
BUG Rating: B3 - U0 - G2

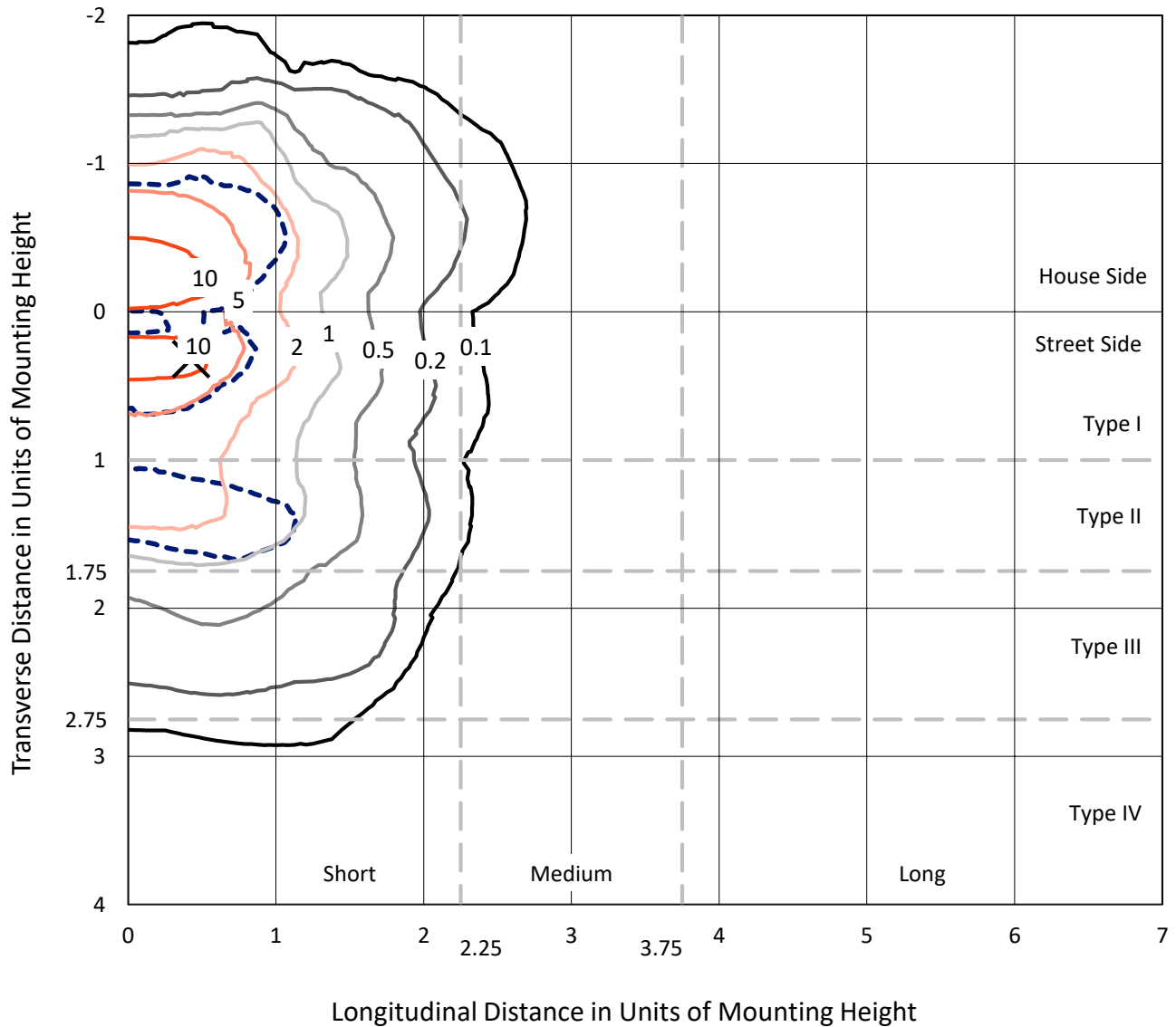
Input Watts (W): 320  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

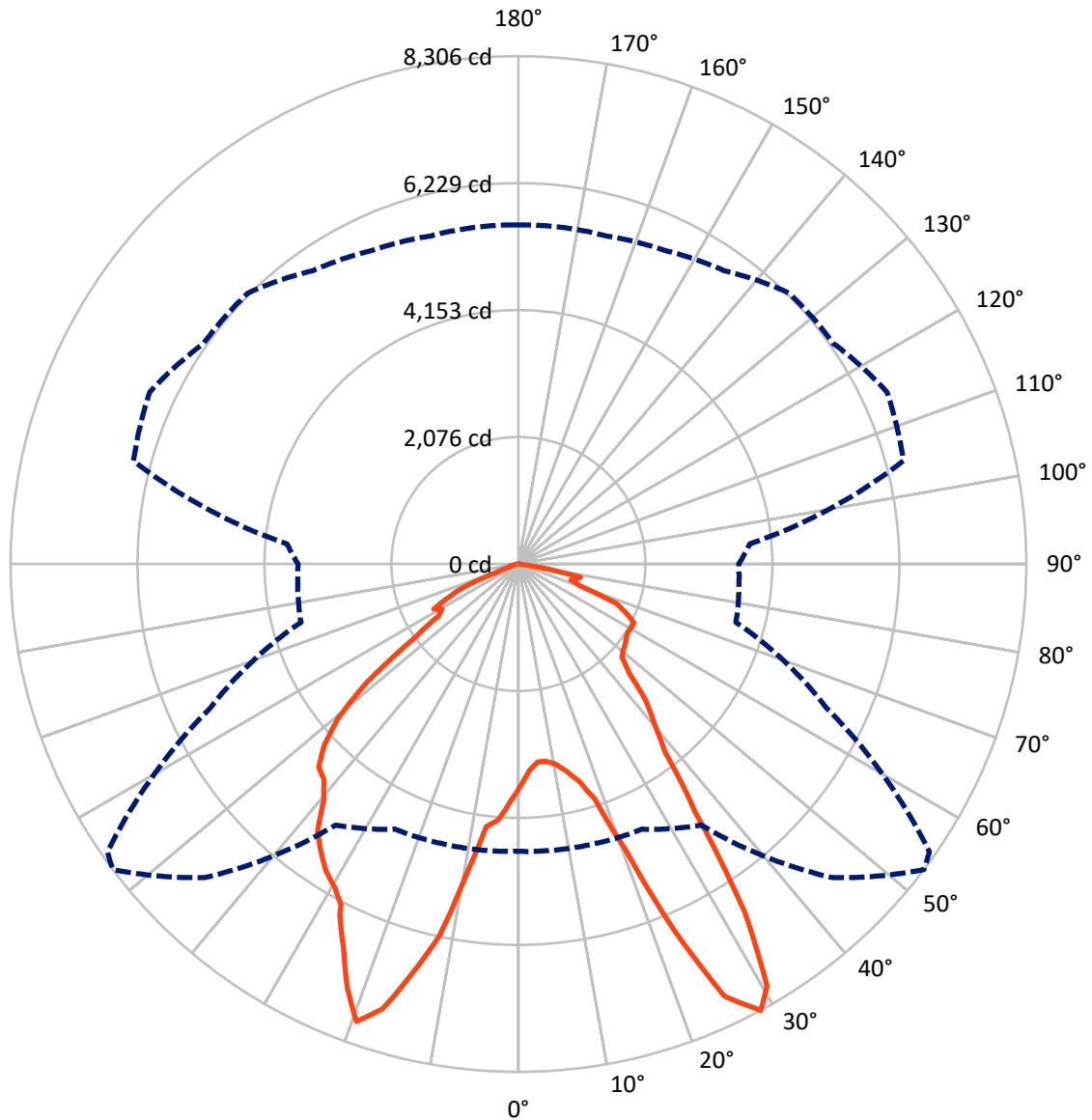
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 16.2 fc  
 Type II - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 53-Deg Lateral      - - - Horizontal Cone Through 28-Deg Vertical

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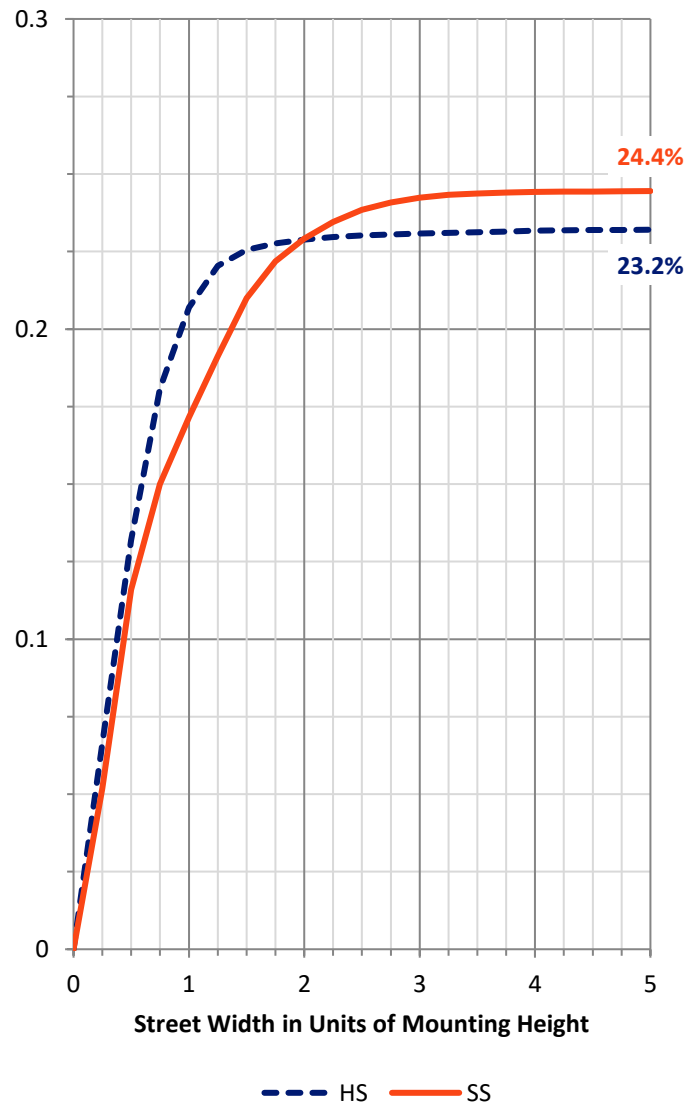
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	6997.3	0.0	6997.3
	% Lamp	23.3	0.0	23.3
<b>Street Side</b>	Lumens	7306.3	0.0	7306.3
	% Lamp	24.4	0.0	24.4
<b>Total</b>	Lumens	14303.6	0.0	14303.6
	% Lamp	47.7	0.0	47.7

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	384.7	2.7	1.3
10°-20°	1549.3	10.8	5.2
20°-30°	2648.8	18.5	8.8
30°-40°	2994.6	20.9	10.0
40°-50°	2570.3	18.0	8.6
50°-60°	2253.0	15.8	7.5
60°-70°	1406.4	9.8	4.7
70°-80°	457.1	3.2	1.5
80°-90°	39.3	0.3	0.1
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-90°	14303.6	100.0	47.7
0°-180°	14303.6	100.0	47.7



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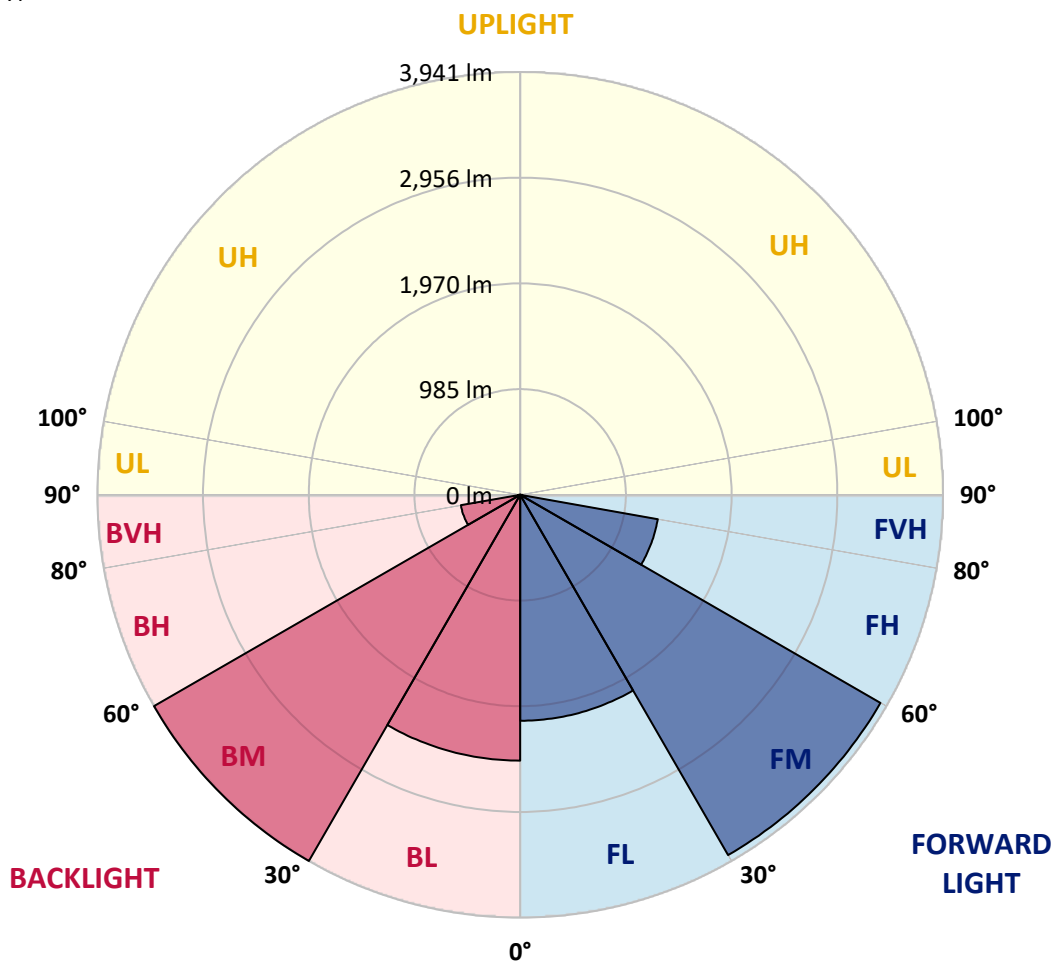
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Lamp	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2105.4	7.0			
FM	(30°-60°)	3877.1	12.9			
FH	(60°-80°)	1302.6	4.3			G1/1800
FVH	(80°-90°)	21.3	0.1			G1/100
BL	(0°-30°)	2477.5	8.3	B3/2500		
BM	(30°-60°)	3940.8	13.1	B3/5000		
BH	(60°-80°)	561.0	1.9	B2/1000		G2/1000
BVH	(80°-90°)	18.0	0.1			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	
Trapped Light		15696.4	52.3			

**BUG Rating: B3-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	53°	55°	65°	75°	85°
0°	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7
2.5°	3269.3	3262.5	3275.5	3298.0	3317.7	3341.6	3381.8	3386.6	3440.5	3511.4	3591.8
5°	3199.8	3201.1	3211.4	3210.0	3217.5	3228.4	3253.6	3255.7	3311.6	3403.0	3563.2
7.5°	3349.1	3348.4	3327.3	3289.8	3256.4	3249.6	3258.4	3248.2	3274.1	3349.8	3521.6
10°	3991.4	3983.9	3942.3	3788.2	3574.1	3374.3	3328.6	3321.8	3319.8	3369.6	3527.1
12.5°	4750.9	4733.9	4570.9	4291.4	3997.5	3660.7	3472.5	3439.1	3438.4	3469.1	3593.9
15°	6689.3	6644.3	6318.4	5675.5	4787.7	4003.6	3675.7	3618.4	3606.8	3652.5	3724.1
17.5°	7033.0	7043.2	7087.5	7192.5	6460.2	4966.4	4035.0	3891.1	3750.0	3850.9	3869.3
20°	6621.2	6622.5	6810.7	7174.8	7557.3	6624.6	4960.2	4592.7	3870.7	3997.5	4007.1
22.5°	5569.8	5630.5	5910.0	6458.9	7414.8	7763.9	6486.8	5910.0	4092.3	3964.8	3996.8
25°	4792.5	4808.2	4879.1	5440.2	6649.8	7908.4	7828.7	7380.7	4500.0	3843.4	3905.5
27.5°	4677.3	4680.7	4746.1	4825.2	5535.7	7517.1	8224.8	8082.3	5252.7	3702.3	3697.5
28°	4699.1	4710.7	4739.3	4784.3	5211.8	7253.2	8305.9	8205.7	5553.4	3681.1	3621.8
30°	4620.0	4658.2	4750.9	4703.9	4832.1	6390.7	8011.4	8127.3	6255.7	3634.8	3484.8
32.5°	3674.3	3829.8	4677.3	4885.2	4652.7	5100.7	6797.7	7165.9	6433.0	3711.8	3343.0
35°	3086.6	3100.9	3239.3	3890.5	4591.4	4493.2	4980.0	5335.2	5850.0	4062.3	3280.2
37.5°	3130.2	3131.6	3082.5	3036.8	3747.3	4071.1	3878.9	3908.9	5104.1	4581.1	3240.0
40°	3184.8	3200.5	3178.6	3022.5	2826.1	3516.8	3411.8	3435.0	4210.9	4116.8	3042.3
42.5°	3243.4	3241.4	3178.6	3027.3	2790.0	2643.4	3049.8	3008.2	3210.7	3599.3	2872.5
45°	3376.4	3361.4	3239.3	3031.4	2773.0	2521.4	2536.4	2470.9	2901.8	3749.3	2666.6
47.5°	3889.1	3841.4	3449.3	3061.4	2767.5	2486.6	2278.0	2254.8	2928.4	3548.2	2447.7
50°	4472.1	4452.3	3982.5	3353.9	2779.8	2480.5	2218.6	2161.4	2723.9	3064.1	2204.3
52.5°	4821.8	4862.7	4681.4	3947.7	2976.8	2473.6	2185.2	2118.4	2419.8	2662.5	1953.4
55°	4823.9	4905.7	5030.5	4570.2	3452.1	2507.1	2139.6	2050.9	1997.7	2426.6	1766.6
57.5°	3315.7	3583.6	4699.8	5101.4	3914.3	2669.3	2110.9	2003.9	1662.3	2162.1	1599.5
60°	2286.8	2531.6	3250.9	4307.1	4423.6	3030.7	2115.7	1975.9	1515.0	1862.1	1369.8
62.5°	2029.8	2263.6	3023.9	3172.5	3557.1	3382.5	2121.8	1845.0	1186.4	1429.1	967.5
65°	1840.9	1988.9	2897.1	2889.6	2552.7	2929.8	1938.4	1663.0	936.8	1078.0	738.4
67.5°	1740.0	1871.6	2592.3	2584.1	2466.1	1934.3	1738.6	1640.5	771.1	885.0	643.6
70°	1179.5	1211.6	1676.6	2001.1	2959.1	1412.7	1072.5	1045.2	722.7	647.0	521.6
72.5°	572.7	613.6	1081.4	1585.2	1103.9	661.4	900.0	823.0	473.9	606.8	468.4
75°	115.9	119.3	205.2	381.8	340.2	467.0	958.6	859.1	568.6	698.2	473.2
77.5°	68.9	69.5	83.9	68.2	75.7	456.8	1035.0	913.0	407.0	592.5	394.1
80°	34.8	33.4	45.0	53.9	43.0	100.2	399.5	403.6	223.6	269.3	270.0
82.5°	18.4	21.1	21.1	28.0	31.4	26.6	34.1	43.6	80.5	110.5	91.4
85°	10.9	10.9	8.9	11.6	8.9	13.6	17.0	16.4	20.5	18.4	18.4
87.5°	8.2	11.6	8.2	9.5	8.9	9.5	8.2	9.5	8.2	8.2	28.0
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°	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7	3632.7
2.5°	3628.0	3663.4	3733.0	3813.4	3878.9	3942.3	3990.0	4037.7	4076.6	4084.8	4090.9
5°	3648.4	3743.2	3928.6	4084.1	4185.7	4246.4	4266.1	4305.7	4337.7	4339.8	4349.3
7.5°	3634.1	3753.4	3984.6	4156.4	4272.3	4536.8	5018.9	5589.6	5934.6	6084.6	6107.1
10°	3653.9	3779.3	4020.0	4218.4	4930.2	5942.1	6464.3	6838.0	7084.1	7220.5	7252.5
12.5°	3700.9	3812.1	4028.9	4674.6	6072.3	6797.1	7402.5	7623.4	7560.0	7457.7	7480.9
15°	3789.6	3849.6	4134.6	5515.2	6713.2	7678.0	7750.2	7406.6	6822.3	6462.3	6445.9
17.5°	3870.7	3859.8	4278.4	6304.1	7537.5	7884.6	7118.9	6482.1	6361.4	6330.0	6340.2
20°	3960.0	3891.8	4747.5	6852.3	8102.1	7278.4	6645.0	6325.2	6175.9	6139.1	6130.2
22.5°	3926.6	3885.0	5326.4	7401.2	7647.3	6762.3	6285.0	6118.0	5996.6	5946.8	5965.2
25°	3828.4	3864.6	5903.2	7545.7	7032.3	6357.3	6030.0	5927.7	5760.0	5659.8	5661.8
27.5°	3653.2	3838.6	6360.7	6856.4	6504.6	6148.7	5852.7	5717.7	5597.1	5534.3	5554.1
28°	3604.1	3799.1	6518.2	6652.5	6287.7	6263.2	5858.2	5658.4	5554.1	5550.7	5545.9
30°	3481.4	3745.2	6459.6	6006.8	6022.5	6366.8	5702.1	5536.4	5571.2	5560.9	5568.4
32.5°	3435.7	3668.2	6289.8	5192.1	5912.7	5997.3	5497.5	5785.2	5838.4	5959.8	5985.0
35°	3362.1	3470.5	6111.2	5192.7	5751.2	5526.2	5730.7	5895.7	5871.8	5869.1	5899.8
37.5°	3175.9	3227.7	5504.3	5043.4	5463.4	5422.5	5800.2	5697.3	5146.4	4686.8	4637.7
40°	2950.9	2894.3	4643.2	4820.5	4916.6	5335.2	5596.4	4779.6	3936.1	3638.2	3622.5
42.5°	2707.5	2549.3	3945.7	4645.2	4682.1	5024.3	4710.7	3986.6	3362.7	3425.5	3508.0
45°	2410.2	2245.2	3466.4	4575.7	4703.9	4474.1	3799.8	3820.2	2891.6	2068.0	2119.8
47.5°	2156.6	2034.6	2991.1	4320.7	4457.1	3858.4	3544.1	3538.0	1970.5	1565.5	1511.6
50°	1987.5	1887.3	2824.1	3645.7	3954.6	3514.1	3401.6	3480.7	1685.5	1682.0	1740.7
52.5°	1778.9	1696.4	2897.7	2955.0	3133.6	3251.6	3656.6	2457.3	1456.4	1043.9	955.9
55°	1607.0	1565.5	2698.6	2808.4	1945.9	2707.5	3466.4	1122.3	505.9	373.6	362.7
57.5°	1460.5	1448.2	2460.0	2672.1	1525.2	1690.9	2449.8	628.6	431.6	330.7	330.0
60°	1268.9	1316.6	2164.1	2135.5	1498.6	1262.7	1255.9	487.5	431.6	385.2	388.0
62.5°	906.1	1075.9	1764.6	1610.5	1603.6	1417.5	427.5	475.9	531.8	331.4	308.9
65°	696.8	1054.1	1453.0	1276.4	1369.8	879.5	338.9	487.5	342.3	250.9	260.5
67.5°	627.3	1013.2	1376.6	1281.8	1141.4	331.4	424.1	349.1	235.2	224.3	228.4
70°	472.5	778.6	1078.0	1036.4	405.7	298.0	343.6	227.0	216.1	225.7	221.6
72.5°	441.1	626.6	803.2	670.9	148.0	128.2	156.8	216.8	244.1	271.4	273.4
75°	484.8	460.2	524.3	225.0	154.8	35.5	76.4	242.7	373.6	246.1	233.9
77.5°	321.8	315.7	297.3	229.8	145.9	94.1	121.4	99.5	46.4	32.7	32.7
80°	212.0	256.4	197.0	229.1	47.7	98.2	83.2	27.3	22.5	23.9	20.5
82.5°	92.0	137.0	126.8	49.8	47.0	33.4	15.0	21.1	18.4	18.4	17.7
85°	25.2	34.8	64.1	28.0	14.3	4.8	6.8	9.5	15.0	8.9	8.9
87.5°	34.1	19.8	8.2	16.4	6.1	4.1	3.4	2.7	1.4	1.4	5.5
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)