

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P130210

Luminaire Tested: **HL612ICAT - HLM6927 - HL6NFL - 456W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130210
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL612ICAT - HLM6927 - HL6NFL - 456W
Description: HALO ALLSLOPE 6" 21W, White Coilex Baffle, White Metal Trim Ring using 25 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1424.4 lumens
Efficiency: N/A
Efficacy: 74.6 lumens/watt
Spacing Criteria (0/90/45): 1.91 / 0.72 / 1.18
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

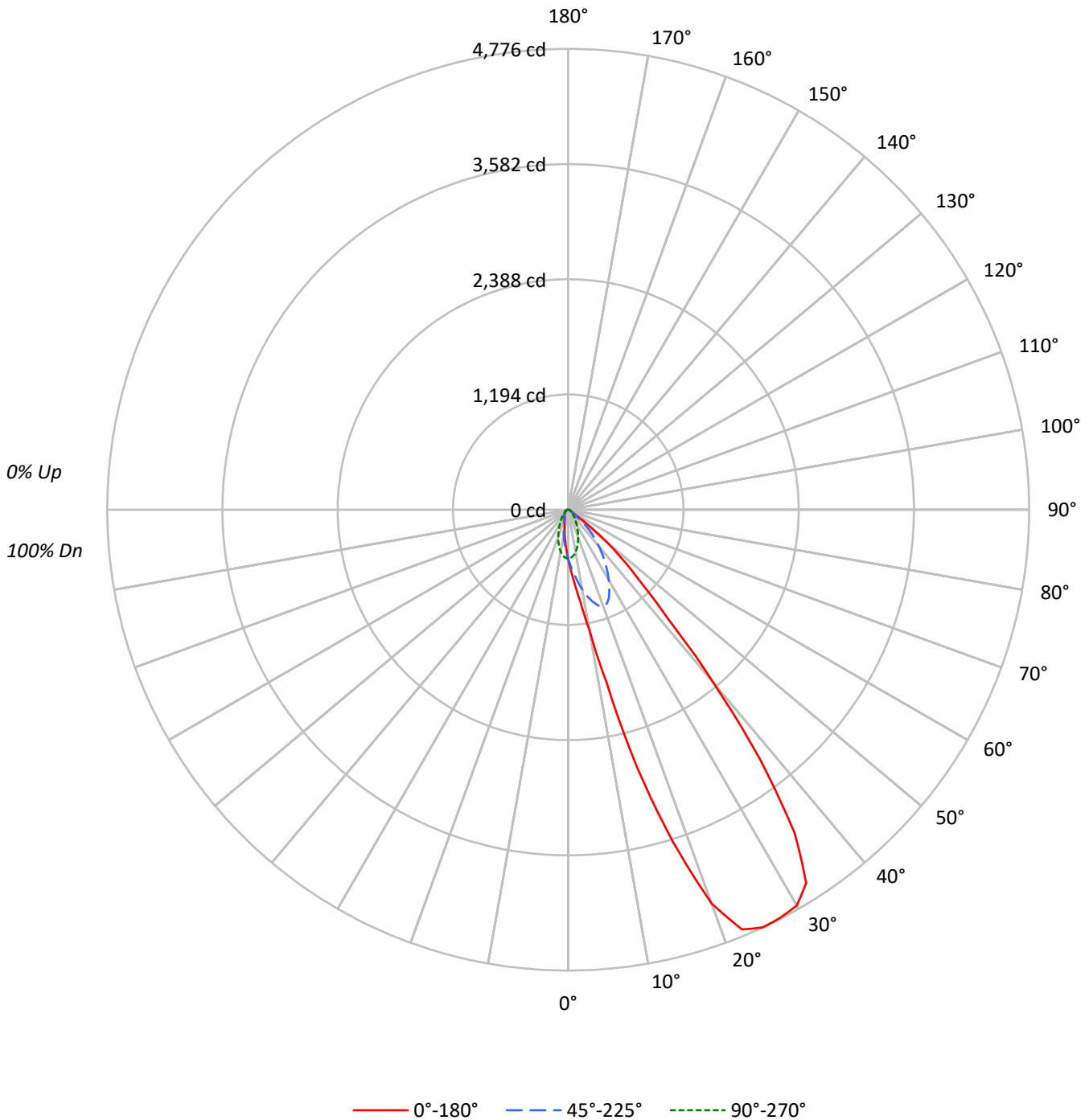
Input Watts (W): 19.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	103	110	107	104	101	103	100	98	99	97	95	95	94	93	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82					82			
3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	82	78	75	74					74			
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68	66					66			
5	86	76	69	64	84	75	69	64	73	67	63	71	66	62	70	65	62	60					60			
6	81	70	63	58	79	69	62	57	67	61	57	66	61	57	65	60	56	54					54			
7	76	65	57	52	74	64	57	52	62	56	52	61	56	51	60	55	51	50					50			
8	71	60	52	48	70	59	52	47	58	52	47	57	51	47	56	51	47	45					45			
9	67	55	48	43	65	55	48	43	54	48	43	53	47	43	52	47	43	41					41			
10	63	51	44	40	62	51	44	40	50	44	40	49	43	40	48	43	39	38					38			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	30281	30281	30281
5°	44726	28635	19505
10°	73294	25695	12448
15°	159770	21610	8325
20°	251586	17521	6203
25°	279870	13496	5081
30°	283088	10278	4530
35°	251109	7833	4073
40°	149290	5989	3574
45°	70722	4128	3161
50°	36392	3237	2927
55°	7370	2746	2859
60°	3336	2322	3041
65°	2357	1970	3086
70°	1392	1695	2946
75°	764	1598	2698
80°	603	1303	2304
85°	373	865	1476



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.8	3.6
10°-20°	213.7	15.0
20°-30°	443.8	31.2
30°-40°	421.9	29.6
40°-50°	194.8	13.7
50°-60°	52.6	3.7
60°-70°	25.8	1.8
70°-80°	15.4	1.1
80°-90°	5.7	0.4
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°-30°	708.2	49.7
0°-40°	1130.2	79.3
0°-60°	1377.5	96.7
0°-90°	1424.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1424.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	507	507	507	507	507	
5°	764	663	489	377	333	88
15°	2770	988	375	181	144	828
25°	4776	1000	230	103	87	2178
35°	4087	662	128	74	66	2401
45°	1060	335	62	48	47	909
55°	98	46	36	36	38	150
65°	26	23	22	30	34	26
75°	7	9	14	20	23	8
85°	2	3	5	8	9	2
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3
2.5°	623.9	602.7	609.3	610.0	599.1	604.2	596.2	591.8	579.4	580.9	569.2
5°	763.8	738.3	745.6	740.5	723.0	721.5	702.6	692.4	672.7	663.2	637.0
7.5°	962.8	928.5	933.6	921.9	886.2	869.5	830.1	810.4	766.7	747.8	707.7
10°	1265.9	1213.5	1214.9	1180.7	1117.3	1069.9	1001.4	951.1	878.2	836.7	773.3
12.5°	1836.6	1713.4	1658.0	1570.6	1449.6	1331.5	1214.2	1114.3	999.2	919.8	830.1
15°	2769.5	2547.9	2470.7	2250.6	1984.5	1711.2	1461.3	1279.8	1113.6	988.3	873.1
17.5°	3608.3	3418.8	3327.0	3074.1	2681.3	2249.1	1785.6	1464.9	1207.6	1042.9	895.7
20°	4343.7	4197.2	4025.2	3701.6	3231.5	2749.1	2091.0	1609.9	1270.3	1065.5	894.2
22.5°	4708.8	4626.5	4496.0	4160.0	3616.4	3043.5	2293.6	1677.7	1279.8	1050.9	865.8
25°	4775.9	4738.7	4667.3	4359.7	3787.6	3136.1	2316.9	1683.5	1235.3	999.9	817.0
27.5°	4765.7	4737.3	4677.5	4354.6	3735.9	3028.9	2187.9	1534.1	1155.2	924.1	756.5
30°	4737.3	4704.5	4588.6	4176.1	3493.2	2754.9	1904.4	1366.5	1045.1	838.9	690.9
32.5°	4587.9	4540.5	4316.7	3776.7	3074.8	2311.1	1572.0	1177.8	916.1	753.6	622.4
35°	4087.2	4130.9	3699.4	3157.2	2480.1	1801.6	1276.1	1002.1	790.8	661.8	551.0
37.5°	3268.0	3214.8	2945.1	2440.8	1819.8	1376.7	1058.2	849.8	689.5	578.7	478.1
40°	2343.1	2350.4	2077.1	1677.7	1315.5	1077.9	862.9	711.3	588.1	491.2	402.3
42.5°	1515.9	1499.2	1360.0	1177.8	1012.3	847.6	698.2	595.4	489.8	411.0	337.4
45°	1060.4	1046.6	989.0	877.5	771.1	677.1	571.4	492.7	403.0	335.3	269.7
47.5°	781.3	778.4	737.6	673.4	599.1	524.0	449.7	383.4	304.6	242.7	188.0
50°	516.0	513.8	489.8	443.1	392.1	340.4	284.2	228.1	177.1	139.2	104.9
52.5°	257.3	247.8	244.2	215.0	192.4	161.8	134.1	102.0	83.1	68.5	57.6
55°	97.7	101.3	95.5	85.3	77.3	67.8	61.2	53.9	48.8	45.9	43.7
57.5°	51.7	53.2	51.7	49.6	47.4	45.9	43.7	42.3	40.1	39.4	37.9
60°	40.8	40.8	40.8	39.4	39.4	37.9	36.4	35.7	34.3	33.5	32.1
62.5°	32.1	32.1	32.8	32.1	31.3	31.3	29.9	29.9	28.4	27.7	27.0
65°	26.2	25.5	26.2	25.5	25.5	24.8	24.1	24.1	22.6	22.6	21.9
67.5°	19.7	18.9	19.7	19.7	18.9	19.7	18.2	18.2	17.5	18.2	17.5
70°	13.8	14.6	14.6	14.6	14.6	14.6	13.8	13.8	13.8	13.8	13.8
72.5°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
75°	6.6	6.6	6.6	7.3	7.3	7.3	7.3	8.0	8.0	8.7	8.7
77.5°	5.1	5.1	5.1	5.8	5.8	5.8	6.6	6.6	6.6	7.3	7.3
80°	4.4	4.4	4.4	4.4	4.4	5.1	5.1	5.1	5.8	5.8	6.6
82.5°	2.9	2.9	2.9	3.6	3.6	3.6	3.6	4.4	4.4	4.4	4.4
85°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.9	2.9	2.9	2.9
87.5°	0.7	0.7	0.7	0.7	0.7	0.7	1.5	1.5	1.5	1.5	1.5
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3
2.5°	555.4	552.4	545.9	542.2	529.1	526.9	510.9	502.1	493.4	485.4	478.1
5°	612.2	600.5	583.8	568.5	547.3	532.8	508.0	489.0	471.5	457.7	442.4
7.5°	669.0	631.9	612.9	586.7	553.9	529.8	496.3	470.8	445.3	424.9	403.0
10°	712.8	672.0	617.3	593.3	551.0	518.2	476.6	443.8	411.8	387.7	362.2
12.5°	749.2	689.5	638.4	590.3	538.6	495.6	449.7	412.5	376.1	349.8	320.7
15°	770.4	694.6	631.1	575.0	516.0	468.6	415.4	374.6	338.9	309.0	281.3
17.5°	773.3	685.1	612.9	548.8	485.4	433.6	381.2	339.6	301.0	269.7	243.4
20°	757.2	662.5	584.5	516.0	448.2	395.7	343.3	302.5	263.8	233.9	209.2
22.5°	723.7	628.2	547.3	476.6	411.8	355.7	306.1	265.3	229.6	203.3	180.0
25°	680.7	584.5	504.3	433.6	370.2	317.0	268.2	230.3	198.2	175.6	156.0
27.5°	629.0	535.7	456.2	389.2	323.6	277.7	231.8	199.7	175.6	152.3	135.6
30°	573.6	482.5	407.4	341.8	283.5	240.5	200.4	172.0	149.4	131.9	121.0
32.5°	513.1	427.1	359.3	299.5	245.6	204.8	172.0	147.9	130.5	116.6	107.9
35°	454.0	371.0	309.0	255.1	209.2	174.2	147.2	127.5	113.0	102.8	94.7
37.5°	390.6	317.8	263.8	214.3	175.6	149.4	125.4	110.1	99.1	90.4	84.5
40°	328.0	266.0	217.2	177.8	147.9	125.4	107.9	94.0	85.3	78.7	72.9
42.5°	268.2	220.1	177.8	145.0	121.0	102.8	88.2	77.3	70.7	65.6	61.9
45°	215.0	170.5	135.6	110.1	92.6	78.7	68.5	61.9	58.3	56.1	54.7
47.5°	145.0	113.7	93.3	75.1	65.6	59.0	54.7	52.5	51.0	49.6	48.1
50°	83.1	67.8	59.8	53.9	51.0	49.6	47.4	45.9	45.2	43.7	43.0
52.5°	51.0	48.8	47.4	45.9	44.5	43.0	41.5	40.1	39.4	38.6	38.6
55°	43.0	41.5	40.8	39.4	38.6	37.2	36.4	36.4	35.7	35.0	35.0
57.5°	36.4	35.7	35.0	34.3	33.5	32.8	32.1	32.1	31.3	31.3	31.3
60°	31.3	30.6	29.9	29.2	29.2	29.2	28.4	28.4	28.4	28.4	28.4
62.5°	26.2	25.5	25.5	24.8	24.8	24.8	24.8	24.8	25.5	25.5	25.5
65°	21.9	21.1	21.1	21.1	21.1	21.9	21.9	21.9	21.9	22.6	23.3
67.5°	17.5	17.5	17.5	17.5	17.5	18.2	18.2	18.9	19.7	20.4	21.9
70°	13.8	13.8	14.6	14.6	15.3	16.0	16.0	16.8	18.2	18.9	19.7
72.5°	10.9	10.9	12.4	12.4	13.1	13.8	14.6	15.3	16.0	16.8	18.2
75°	9.5	9.5	10.2	10.9	11.7	12.4	13.1	13.8	14.6	15.3	16.0
77.5°	8.0	8.7	8.7	9.5	10.2	10.2	10.9	11.7	12.4	13.1	13.1
80°	6.6	6.6	7.3	8.0	8.0	8.7	8.7	9.5	10.2	10.2	10.9
82.5°	5.1	5.1	5.8	5.8	5.8	6.6	6.6	7.3	7.3	8.0	8.7
85°	3.6	3.6	3.6	4.4	4.4	4.4	4.4	5.1	5.1	5.8	5.8
87.5°	1.5	2.2	2.2	2.2	2.2	2.9	2.9	2.9	2.9	2.9	3.6
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3	507.3
2.5°	473.7	459.1	464.3	448.9	451.1	444.6	439.5	436.6	430.7	420.5	422.0
5°	429.3	410.3	411.8	389.2	384.1	376.8	365.1	360.8	355.7	346.9	341.1
7.5°	388.5	362.2	358.6	337.4	326.5	318.5	303.2	296.6	285.7	280.6	274.0
10°	341.8	315.6	308.3	283.5	273.3	263.1	247.8	240.5	232.5	225.2	220.1
12.5°	299.5	272.6	260.9	239.0	228.8	217.9	202.6	198.2	190.2	184.4	179.3
15°	259.5	233.2	220.1	201.2	192.4	180.7	172.0	165.4	158.2	152.3	148.7
17.5°	223.0	199.0	189.5	171.3	162.5	152.3	145.0	138.5	133.4	129.0	125.4
20°	190.9	169.8	161.1	145.8	138.5	131.9	123.9	120.3	118.8	112.2	109.3
22.5°	164.0	146.5	139.2	126.8	121.0	115.9	109.3	105.7	102.8	99.1	96.9
25°	142.1	127.5	122.4	111.5	107.9	102.8	98.4	95.5	92.6	90.4	88.2
27.5°	125.4	113.0	108.6	99.8	96.9	93.3	89.6	87.5	85.3	83.1	81.6
30°	111.5	101.3	98.4	91.1	88.9	86.0	83.1	81.6	80.2	78.0	76.5
32.5°	99.8	91.1	88.9	83.8	82.4	80.2	78.0	76.5	74.3	72.9	71.4
35°	88.9	83.1	81.6	76.5	75.8	73.6	71.4	70.0	68.5	67.1	66.3
37.5°	79.4	74.3	73.6	69.2	67.8	66.3	64.1	63.4	62.7	61.9	61.2
40°	69.2	64.9	64.1	60.5	60.5	59.8	58.3	57.6	56.8	56.8	55.4
42.5°	58.3	56.8	56.8	54.7	54.7	53.9	52.5	52.5	51.0	51.0	50.3
45°	53.2	51.0	51.0	48.8	48.8	48.1	47.4	47.4	47.4	47.4	46.6
47.5°	47.4	45.2	45.9	44.5	44.5	44.5	44.5	44.5	43.7	43.7	43.7
50°	42.3	40.8	42.3	40.8	41.5	41.5	40.8	41.5	41.5	40.8	40.8
52.5°	38.6	37.9	38.6	37.9	38.6	38.6	37.9	38.6	38.6	38.6	38.6
55°	35.0	34.3	35.7	35.0	35.7	35.7	35.7	36.4	36.4	37.2	36.4
57.5°	32.1	31.3	32.8	32.1	32.8	33.5	33.5	34.3	35.0	35.7	35.7
60°	29.2	29.2	29.9	29.9	31.3	32.1	32.8	33.5	34.3	35.7	35.7
62.5°	26.2	27.0	28.4	27.7	29.9	31.3	32.1	32.8	33.5	34.3	34.3
65°	24.8	24.8	27.0	27.7	29.2	29.9	30.6	31.3	32.1	32.8	32.8
67.5°	23.3	23.3	25.5	25.5	27.7	27.7	28.4	29.9	29.9	30.6	30.6
70°	21.1	21.9	23.3	24.1	24.8	25.5	26.2	27.0	27.7	28.4	28.4
72.5°	18.9	19.7	21.1	21.1	22.6	23.3	24.1	24.8	24.8	25.5	25.5
75°	16.8	16.8	18.2	18.9	19.7	20.4	21.1	21.9	21.9	22.6	22.6
77.5°	13.8	14.6	15.3	16.0	16.8	17.5	18.2	18.9	18.9	19.7	19.7
80°	11.7	11.7	12.4	13.1	13.8	14.6	14.6	15.3	15.3	16.0	16.0
82.5°	8.7	9.5	9.5	10.2	10.9	10.9	11.7	11.7	12.4	12.4	12.4
85°	6.6	6.6	6.6	7.3	7.3	8.0	8.0	8.0	8.7	8.7	8.7
87.5°	3.6	3.6	3.6	4.4	4.4	4.4	4.4	4.4	5.1	5.1	5.1
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):

	165°	170°	175°	180°
0°	507.3	507.3	507.3	507.3
2.5°	422.7	417.6	423.4	417.6
5°	341.1	333.1	338.9	333.1
7.5°	274.8	268.9	268.2	266.0
10°	218.6	212.8	212.1	215.0
12.5°	178.6	173.5	173.5	174.2
15°	147.2	142.8	144.3	144.3
17.5°	124.6	123.9	122.4	122.4
20°	110.1	106.4	106.4	107.1
22.5°	97.7	94.7	94.7	95.5
25°	89.6	86.0	86.7	86.7
27.5°	81.6	80.2	80.9	80.9
30°	76.5	75.1	75.8	75.8
32.5°	72.2	70.0	70.7	71.4
35°	67.1	65.6	66.3	66.3
37.5°	61.9	60.5	61.2	61.9
40°	56.1	55.4	55.4	56.1
42.5°	50.3	49.6	50.3	51.0
45°	47.4	46.6	46.6	47.4
47.5°	44.5	43.7	43.7	44.5
50°	41.5	40.8	41.5	41.5
52.5°	38.6	38.6	38.6	39.4
55°	37.2	37.2	37.9	37.9
57.5°	37.2	37.2	37.2	37.9
60°	36.4	36.4	37.2	37.2
62.5°	35.0	35.7	35.7	35.7
65°	33.5	32.8	34.3	34.3
67.5°	31.3	31.3	31.3	32.1
70°	29.2	29.2	29.2	29.2
72.5°	26.2	26.2	26.2	26.2
75°	23.3	23.3	23.3	23.3
77.5°	19.7	19.7	19.7	20.4
80°	16.0	16.0	16.0	16.8
82.5°	12.4	12.4	12.4	12.4
85°	8.7	8.7	8.7	8.7
87.5°	5.1	5.1	5.1	5.1
90°	0.0	0.0	0.0	0.0

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