

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: P130226

Luminaire Tested: **HL612ICAT - HLM6927 - HL6NFL - 73PS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130226
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33478)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL612ICAT - HLM6927 - HL6NFL - 73PS
Description: HALO ALLSLOPE 6" 21W, Fresnel Glass Lens, White Polymer Trim Ring
"Dead Front", Wet Location - Showerlight 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: 1049.7 lumens
Efficiency: N/A
Efficacy: 55.0 lumens/watt
Spacing Criteria (0/90/45): 1.67 / 0.76 / 1.09
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

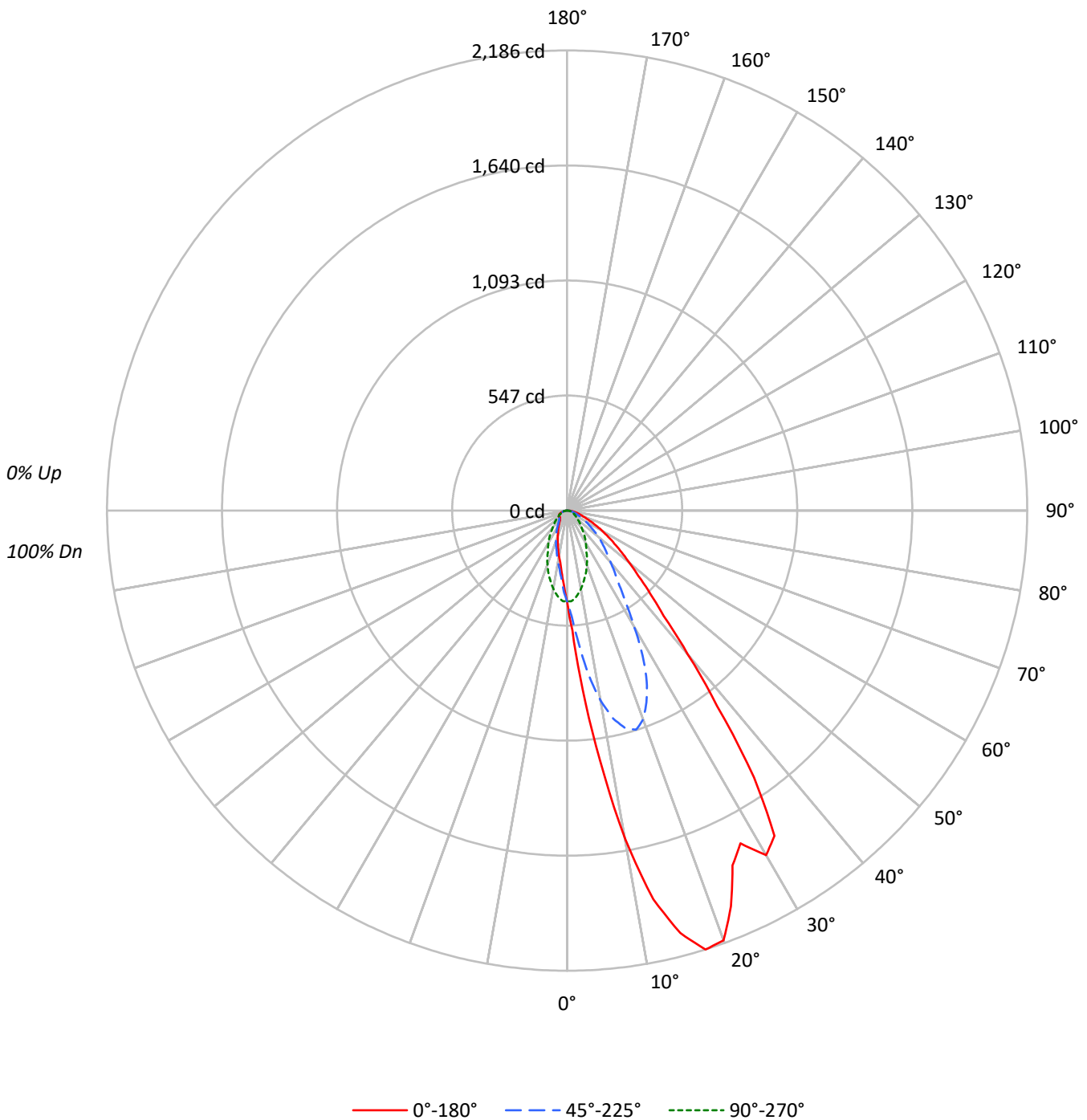
Input Watts (W): 19.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89				89
2	103	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	80	78				78
3	96	88	81	76	94	86	80	75	84	78	74	81	77	73	79	75	72	70				70
4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	63				63
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56				56
6	79	67	60	54	77	66	59	54	65	58	54	63	58	53	62	57	53	51				51
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47				47
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	53	48	44	43				43
9	65	54	46	42	64	53	46	41	52	46	41	51	45	41	50	45	41	39				39
10	62	50	43	38	60	49	43	38	49	42	38	48	42	38	47	42	38	36				36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	25721	25721	25721
5°	50037	24547	17245
10°	91602	21868	12830
15°	119866	18841	9715
20°	125837	15835	7518
25°	108985	12646	5895
30°	112923	10589	4661
35°	95093	8687	3809
40°	56859	6875	3345
45°	37295	5736	3161
50°	27097	4732	3343
55°	20678	3961	3629
60°	15615	3515	3573
65°	11282	3086	3806
70°	8242	2643	3238
75°	6496	2281	2791
80°	4497	1906	2496
85°	3715	1357	1357



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.5	4.8
10°-20°	190.2	18.1
20°-30°	262.2	25.0
30°-40°	225.3	21.5
40°-50°	134.9	12.9
50°-60°	89.8	8.6
60°-70°	55.6	5.3
70°-80°	30.0	2.9
80°-90°	11.2	1.1
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°	502.9	47.9
0°-40°	728.2	69.4
0°-60°	952.9	90.8
0°-90°	1049.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1049.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	431	431	431	431	431	
5°	854	636	419	320	294	104
15°	2078	1071	327	193	168	578
25°	1860	895	216	122	101	887
35°	1548	432	141	72	62	919
45°	559	251	86	52	47	447
55°	274	138	52	44	48	249
65°	125	68	34	36	42	128
75°	56	31	20	22	24	58
85°	22	12	8	8	8	22
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°	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9
2.5°	569.4	549.0	553.4	547.5	546.1	528.6	530.0	521.3	510.3	501.6	501.6
5°	854.5	846.4	847.2	823.8	799.8	763.3	731.2	718.8	673.6	635.7	610.2
7.5°	1195.7	1181.1	1173.1	1124.9	1096.5	1035.3	984.2	933.2	858.1	788.8	732.0
10°	1582.1	1578.4	1560.2	1493.8	1434.1	1319.6	1227.0	1142.4	1014.1	917.2	825.3
12.5°	1891.9	1881.0	1873.7	1816.1	1725.7	1590.8	1452.3	1313.0	1146.8	1012.7	893.8
15°	2077.8	2078.5	2074.9	2012.9	1916.7	1763.6	1593.7	1424.6	1231.4	1071.0	933.2
17.5°	2186.4	2174.8	2171.9	2095.3	1980.1	1810.2	1635.3	1463.2	1242.3	1091.4	931.7
20°	2172.6	2163.1	2147.1	2062.5	1929.1	1759.2	1593.0	1430.4	1232.8	1056.4	885.8
22.5°	2034.1	2032.6	2015.8	1943.7	1812.4	1656.4	1509.9	1360.4	1167.2	985.0	821.6
25°	1859.8	1867.8	1871.5	1813.2	1714.7	1587.9	1449.4	1286.8	1083.4	895.3	734.2
27.5°	1782.5	1794.2	1814.6	1776.0	1689.2	1545.6	1394.0	1199.3	965.3	775.7	627.7
30°	1889.7	1883.2	1862.0	1778.9	1653.5	1456.7	1250.3	1030.9	796.1	637.2	524.9
32.5°	1832.8	1805.9	1759.9	1626.5	1461.0	1237.9	1021.4	818.0	636.5	519.1	441.1
35°	1547.8	1533.9	1481.4	1319.6	1158.5	947.0	782.3	635.0	514.7	431.6	380.6
37.5°	1170.9	1141.0	1090.7	982.8	866.1	719.6	603.7	510.3	428.0	371.1	325.2
40°	892.4	867.6	832.6	749.5	661.3	567.9	489.9	424.3	366.7	321.5	285.1
42.5°	678.8	671.5	648.9	597.1	538.8	468.8	417.0	367.4	320.8	283.6	255.2
45°	559.2	550.4	538.8	503.0	457.1	401.0	358.7	317.9	280.7	250.8	226.7
47.5°	460.0	453.5	441.8	414.1	382.8	341.2	309.1	277.0	246.4	221.6	199.0
50°	384.2	384.9	372.5	354.3	326.6	293.1	267.6	242.0	215.8	190.3	173.5
52.5°	326.6	323.7	314.2	299.6	277.0	252.3	231.1	209.2	185.2	165.5	148.0
55°	274.1	270.5	264.6	252.3	235.5	215.8	197.6	177.9	156.7	138.5	125.4
57.5°	229.7	226.7	221.6	212.2	197.6	180.8	165.5	149.5	132.0	117.4	106.4
60°	191.0	188.8	184.5	177.2	164.8	150.9	138.5	124.7	110.1	99.2	90.4
62.5°	156.7	153.8	151.6	146.5	134.9	125.4	114.5	102.8	92.6	82.4	75.1
65°	125.4	124.7	123.2	118.8	113.0	102.1	94.0	84.6	75.8	67.8	62.7
67.5°	101.3	100.6	100.6	96.2	89.7	81.7	75.8	69.3	62.0	56.1	51.8
70°	81.7	80.9	80.2	76.6	72.9	66.3	62.0	56.1	51.0	45.9	43.0
72.5°	64.9	64.9	64.9	62.7	59.1	54.7	50.3	45.9	41.6	37.9	35.0
75°	56.1	56.1	53.2	52.5	49.6	45.9	41.6	37.9	34.3	30.6	29.2
77.5°	43.0	44.5	43.0	42.3	40.1	36.5	33.5	30.6	27.0	24.8	23.3
80°	32.8	32.8	32.8	31.3	29.9	27.7	25.5	23.3	21.1	19.0	18.2
82.5°	27.0	27.0	25.5	24.1	22.6	21.1	20.4	19.0	16.8	14.6	13.9
85°	21.9	21.9	22.6	21.9	19.7	17.5	15.3	14.6	13.1	12.4	11.7
87.5°	16.0	15.3	14.6	14.6	13.1	11.7	10.9	10.2	8.7	8.0	8.0
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9
2.5°	486.3	476.1	463.7	460.8	455.7	438.2	435.2	430.9	422.1	411.2	411.2
5°	576.7	542.4	510.3	490.7	473.2	444.7	431.6	419.2	403.9	384.9	380.6
7.5°	660.5	600.7	548.3	511.1	479.7	440.3	419.2	399.5	379.1	356.5	347.0
10°	724.7	639.4	570.9	517.6	473.9	426.5	399.5	377.7	352.1	328.8	317.1
12.5°	764.8	657.6	573.0	509.6	459.3	406.8	376.9	351.4	325.9	300.4	287.2
15°	777.9	654.0	560.6	492.1	437.4	384.2	353.6	326.6	299.6	275.6	264.6
17.5°	758.9	627.7	532.9	461.5	409.0	358.0	328.8	301.1	277.0	252.3	240.6
20°	716.7	584.0	493.6	428.0	376.2	327.3	298.2	273.4	250.8	228.2	215.1
22.5°	654.7	531.5	448.4	389.3	341.9	296.0	269.0	247.2	223.8	204.1	193.2
25°	581.1	474.6	403.2	347.8	305.5	266.1	241.3	215.8	200.5	182.3	172.1
27.5°	501.6	417.0	352.9	311.3	272.7	236.9	215.8	196.1	180.8	164.0	153.8
30°	427.2	363.1	312.8	273.4	242.0	210.7	194.7	177.2	161.9	145.8	137.1
32.5°	371.8	316.4	274.9	245.0	218.0	191.7	175.7	159.7	144.4	129.8	121.8
35°	317.9	275.6	245.0	218.0	194.7	171.3	156.7	141.4	126.9	114.5	106.4
37.5°	280.7	245.7	216.5	193.9	172.1	151.6	137.1	123.2	111.5	99.9	93.3
40°	247.9	218.0	192.5	171.3	151.6	131.2	119.6	107.9	97.7	88.2	82.4
42.5°	222.4	194.7	172.1	150.9	133.4	115.9	105.0	95.5	87.5	79.5	74.4
45°	196.8	171.3	150.2	132.7	117.4	102.8	94.0	86.0	78.0	71.4	67.1
47.5°	173.5	150.2	131.2	117.4	104.3	91.1	82.4	76.6	70.0	63.4	60.5
50°	150.9	129.8	114.5	102.1	90.4	80.2	73.6	67.1	62.0	56.9	54.7
52.5°	129.0	110.8	97.7	87.5	77.3	68.5	64.2	59.1	55.4	51.8	50.3
55°	109.4	95.5	83.8	74.4	67.1	59.8	56.1	52.5	50.3	48.1	46.7
57.5°	92.6	81.7	71.4	64.9	59.8	53.2	50.3	47.4	45.9	43.7	43.0
60°	78.0	68.5	60.5	55.4	50.3	46.7	45.2	43.0	41.6	40.1	40.1
62.5°	64.9	57.6	51.8	48.8	43.7	41.6	40.1	38.6	37.9	36.5	37.2
65°	54.0	48.1	43.7	40.8	38.6	36.5	35.7	34.3	33.5	32.8	33.5
67.5°	45.9	40.8	37.2	35.0	33.5	32.1	31.3	29.9	29.9	29.9	30.6
70°	37.9	34.3	32.1	29.9	28.4	27.0	27.0	26.2	26.2	26.2	26.2
72.5°	31.3	28.4	26.2	25.5	24.1	23.3	23.3	23.3	23.3	22.6	23.3
75°	26.2	23.3	21.9	21.1	20.4	19.7	19.7	19.7	19.7	19.0	19.7
77.5°	21.1	19.7	19.0	18.2	17.5	17.5	17.5	16.8	16.8	16.8	16.8
80°	16.8	16.0	14.6	14.6	13.9	13.9	13.9	13.9	13.9	13.9	13.9
82.5°	13.1	11.7	11.7	11.7	10.9	10.9	10.9	10.9	10.2	10.9	10.9
85°	10.2	9.5	8.7	8.7	8.0	8.0	8.0	8.0	8.0	8.0	8.0
87.5°	6.6	6.6	5.8	5.8	5.1	5.1	5.1	5.1	4.4	4.4	4.4
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°	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9
2.5°	399.5	400.3	389.3	384.2	382.0	382.0	368.2	368.9	363.8	368.9	360.9
5°	364.5	356.5	346.3	337.6	331.7	320.1	313.5	312.0	307.7	308.4	301.8
7.5°	328.8	321.5	306.2	298.2	289.4	279.2	270.5	269.0	263.9	262.5	257.4
10°	297.5	286.5	270.5	263.2	255.9	247.9	239.9	237.7	232.6	232.6	228.2
12.5°	269.0	258.8	246.4	236.9	229.7	220.9	212.9	211.4	205.6	204.9	199.0
15°	244.2	235.5	222.4	213.6	205.6	193.2	188.8	186.6	180.8	179.3	175.0
17.5°	221.6	212.2	199.0	190.3	184.5	175.0	167.7	164.8	160.4	158.2	153.8
20°	199.0	190.3	177.9	168.4	162.6	153.8	147.3	145.1	140.0	139.2	135.6
22.5°	178.6	169.1	157.5	150.9	144.4	136.3	130.5	128.3	123.9	122.5	118.8
25°	158.9	150.9	140.7	135.6	129.0	122.5	116.6	114.5	110.1	108.6	105.7
27.5°	141.4	134.1	126.1	120.3	115.9	107.9	102.8	101.3	97.0	94.8	91.9
30°	126.1	119.6	111.5	105.7	101.3	93.3	89.7	88.2	84.6	83.1	80.9
32.5°	111.5	105.0	97.7	92.6	87.5	82.4	78.0	76.6	74.4	73.6	71.4
35°	97.7	91.9	85.3	80.9	76.6	72.2	69.3	68.5	66.3	65.6	63.4
37.5°	85.3	80.2	75.1	71.4	68.5	64.9	62.7	61.2	59.8	59.1	57.6
40°	75.8	71.4	67.8	64.9	62.7	59.1	56.9	56.9	55.4	54.7	53.2
42.5°	67.8	64.9	62.0	59.8	57.6	55.4	53.2	53.2	51.8	51.8	49.6
45°	62.7	60.5	57.6	55.4	54.0	52.5	51.0	51.0	50.3	49.6	48.8
47.5°	56.9	55.4	53.2	51.8	50.3	49.6	48.1	49.6	48.8	48.8	48.8
50°	51.8	51.0	49.6	48.8	48.1	47.4	47.4	48.1	48.1	48.1	48.1
52.5°	48.1	47.4	46.7	45.9	46.7	45.9	45.2	45.9	45.9	46.7	47.4
55°	45.2	44.5	44.5	44.5	45.2	43.7	43.7	45.2	45.2	45.9	45.9
57.5°	42.3	42.3	42.3	42.3	42.3	42.3	42.3	43.0	43.7	45.2	45.2
60°	39.4	39.4	39.4	40.1	40.1	40.1	40.1	41.6	41.6	42.3	43.0
62.5°	35.7	36.5	36.5	37.2	37.9	38.6	39.4	40.8	40.8	41.6	42.3
65°	32.8	33.5	34.3	35.0	35.7	36.5	36.5	37.9	37.9	38.6	39.4
67.5°	29.9	30.6	30.6	31.3	32.1	32.1	32.1	34.3	34.3	35.0	35.7
70°	26.2	27.0	27.0	27.7	28.4	28.4	29.2	29.9	29.2	29.9	30.6
72.5°	22.6	24.1	24.8	24.8	25.5	25.5	25.5	26.2	26.2	26.2	27.0
75°	19.7	20.4	20.4	21.1	21.9	21.9	21.9	22.6	23.3	23.3	23.3
77.5°	17.5	17.5	18.2	18.2	18.2	19.0	19.0	19.7	19.7	19.7	19.7
80°	13.9	14.6	14.6	15.3	15.3	16.0	16.0	17.5	16.8	16.8	16.8
82.5°	10.9	10.9	11.7	11.7	11.7	12.4	12.4	13.1	12.4	12.4	12.4
85°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.7	8.0	8.7	8.0
87.5°	4.4	4.4	4.4	3.6	3.6	3.6	3.6	4.4	3.6	3.6	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):

	165°	170°	175°	180°
0°	430.9	430.9	430.9	430.9
2.5°	358.7	355.8	358.0	354.3
5°	298.9	295.3	296.7	294.5
7.5°	254.4	252.3	251.5	250.1
10°	224.5	223.1	223.1	221.6
12.5°	197.6	193.9	194.7	194.7
15°	172.1	169.9	169.9	168.4
17.5°	150.9	148.0	148.7	146.5
20°	132.7	129.8	130.5	129.8
22.5°	117.4	114.5	114.5	113.0
25°	103.5	102.1	101.3	100.6
27.5°	90.4	88.9	88.9	88.2
30°	80.2	78.0	78.7	78.0
32.5°	71.4	70.0	70.0	69.3
35°	63.4	62.0	62.0	62.0
37.5°	57.6	56.1	56.1	56.1
40°	52.5	51.8	52.5	52.5
42.5°	50.3	48.8	49.6	49.6
45°	48.1	47.4	47.4	47.4
47.5°	48.1	46.7	46.7	45.9
50°	48.8	48.1	48.1	47.4
52.5°	48.1	48.8	50.3	49.6
55°	47.4	47.4	48.1	48.1
57.5°	45.2	45.2	45.2	45.2
60°	43.7	43.7	43.7	43.7
62.5°	43.0	43.0	43.7	43.0
65°	40.8	41.6	42.3	42.3
67.5°	36.5	36.5	37.2	36.5
70°	32.1	32.1	32.1	32.1
72.5°	27.0	27.0	27.7	28.4
75°	24.1	23.3	24.1	24.1
77.5°	20.4	19.7	19.7	19.7
80°	17.5	16.8	17.5	18.2
82.5°	12.4	11.7	12.4	11.7
85°	8.7	8.0	8.0	8.0
87.5°	3.6	3.6	3.6	3.6
90°	0.0	0.0	0.0	0.0

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