

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: P130220

Luminaire Tested: **HL612ICAT - HLM6935 - HL6NFL - 70PS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130220
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33474)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL612ICAT - HLM6935 - HL6NFL - 70PS
Description: HALO ALLSLOPE 6" 21W, Albalite 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 817.4 lumens
Efficiency: N/A
Efficacy: 42.8 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.04 / 1.23
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

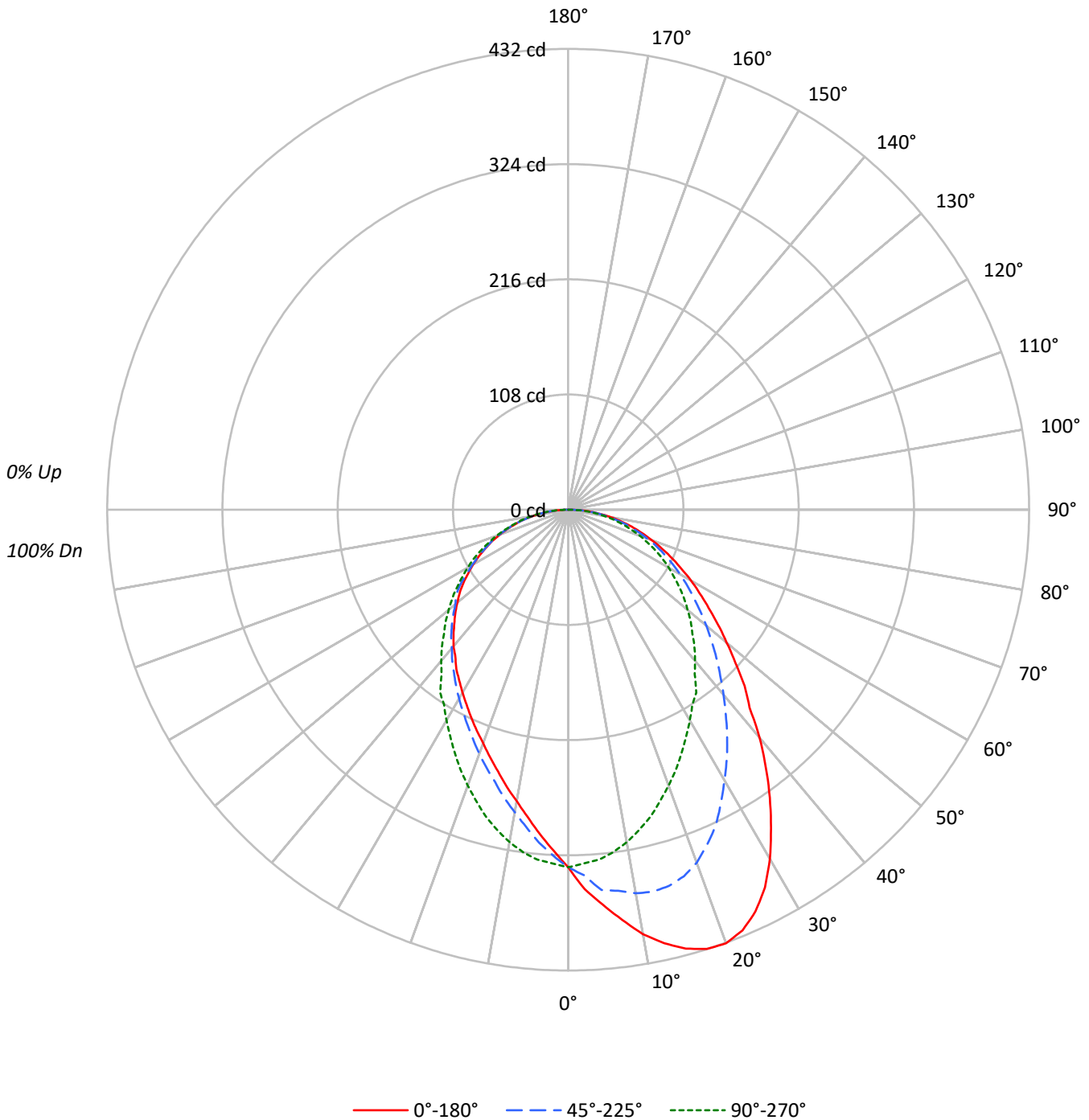
Input Watts (W): 19.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84					84			
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	70					70			
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	60					60			
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51					51			
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	45					45			
6	71	58	49	43	69	57	49	43	55	48	42	53	47	42	52	46	41	39					39			
7	66	53	44	38	64	52	44	38	50	43	38	49	42	37	48	42	37	35					35			
8	62	48	40	34	60	48	40	34	46	39	34	45	38	34	44	38	33	31					31			
9	58	44	36	31	56	44	36	31	43	36	31	42	35	30	41	35	30	29					29			
10	54	41	33	28	53	41	33	28	40	33	28	39	32	28	38	32	28	26					26			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	20002	20002	20002
5°	21760	19289	17866
10°	23397	18319	16067
15°	24575	17180	14653
20°	25050	15934	13490
25°	24343	14738	12599
30°	22594	13625	11832
35°	20238	12859	11219
40°	17783	11787	10647
45°	15586	10984	10064
50°	13675	10304	9557
55°	12123	9611	9060
60°	10882	8887	8421
65°	9636	8106	7666
70°	8433	7203	6880
75°	7145	6102	5825
80°	5567	4785	4456
85°	3579	2884	2612



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.7	3.9
10°-20°	89.3	10.9
20°-30°	128.3	15.7
30°-40°	142.2	17.4
40°-50°	136.9	16.7
50°-60°	119.5	14.6
60°-70°	92.2	11.3
70°-80°	57.5	7.0
80°-90°	19.7	2.4
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°	249.4	30.5
0°-40°	391.6	47.9
0°-60°	648.0	79.3
0°-90°	817.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	817.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	335	335	335	335	335	
5°	372	358	329	313	305	36
15°	426	365	298	264	254	120
25°	415	327	252	223	215	190
35°	329	260	209	187	183	205
45°	234	196	165	154	151	180
55°	161	144	127	124	120	145
65°	107	100	90	86	85	106
75°	62	58	53	51	50	65
85°	21	20	17	16	15	23
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°	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1
2.5°	356.2	348.1	349.7	350.5	349.7	344.8	344.8	346.5	345.7	343.2	345.7
5°	371.6	363.5	365.1	364.3	363.5	358.6	357.0	357.8	357.0	357.8	354.6
7.5°	387.8	379.7	380.5	379.7	377.3	370.8	368.4	367.6	365.9	360.3	359.5
10°	404.1	393.5	393.5	393.5	390.3	381.4	378.1	375.7	372.4	365.1	362.7
12.5°	416.2	406.5	405.7	404.9	400.0	396.8	384.6	380.5	375.7	366.8	362.7
15°	426.0	415.4	415.4	412.2	406.5	394.3	388.7	382.2	375.7	365.1	359.5
17.5°	431.7	421.9	420.3	416.2	408.9	396.0	387.8	379.7	371.6	360.3	353.8
20°	432.5	422.7	428.4	415.4	406.5	391.9	382.2	373.2	364.3	352.1	343.2
22.5°	426.8	417.1	422.7	408.1	399.2	383.8	373.2	362.7	353.0	340.0	331.9
25°	415.4	406.5	402.5	396.8	387.0	371.6	360.3	348.9	339.2	327.0	318.1
27.5°	399.2	390.3	385.4	379.7	370.8	355.4	344.0	332.7	322.9	310.0	301.8
30°	378.1	369.2	365.1	360.3	351.3	335.9	325.4	314.8	305.9	292.9	286.4
32.5°	353.8	348.1	342.4	338.4	331.1	316.4	305.9	296.2	288.0	276.7	270.2
35°	329.4	323.7	311.6	314.8	307.5	295.4	284.0	276.7	269.4	259.6	253.2
37.5°	304.3	298.6	293.7	290.5	279.1	273.4	263.7	257.2	250.7	242.6	236.9
40°	279.1	274.3	270.2	267.8	262.9	252.3	245.0	239.4	232.9	226.4	221.5
42.5°	251.5	250.7	248.3	245.9	241.8	232.9	226.4	221.5	216.6	211.0	206.9
45°	233.7	229.6	227.2	224.8	221.5	213.4	209.3	205.3	201.2	196.4	192.3
47.5°	212.6	209.3	207.7	206.1	202.9	195.5	192.3	189.1	185.8	181.8	179.3
50°	193.9	191.5	189.1	187.4	185.8	180.1	177.7	178.5	172.0	168.8	167.1
52.5°	176.9	174.5	172.8	171.2	169.6	165.5	163.1	160.7	159.0	155.8	154.2
55°	160.7	158.2	156.6	155.8	157.4	150.9	149.3	147.7	146.1	143.6	143.6
57.5°	146.1	143.6	142.8	142.8	141.2	137.9	136.3	135.5	133.9	132.3	131.4
60°	133.1	130.6	129.0	129.8	128.2	125.0	127.4	122.5	122.5	120.9	120.1
62.5°	119.3	117.7	116.8	116.8	115.2	113.6	112.8	112.0	111.2	110.4	109.5
65°	107.1	105.5	104.7	104.7	103.9	101.4	100.6	100.6	99.8	99.8	99.0
67.5°	94.9	93.3	93.3	93.3	92.5	90.9	90.1	90.1	89.3	89.3	88.4
70°	83.6	82.0	81.1	82.0	81.1	80.3	78.7	78.7	78.7	78.7	77.9
72.5°	72.2	71.4	70.6	71.4	70.6	69.0	68.2	69.8	68.2	68.2	67.3
75°	61.7	60.9	60.0	60.9	59.2	59.2	58.4	58.4	57.6	58.4	57.6
77.5°	51.1	50.3	50.3	50.3	49.5	48.7	47.9	48.7	47.9	47.9	47.9
80°	40.6	39.8	39.8	40.6	39.8	38.9	38.1	38.9	38.1	38.1	38.1
82.5°	30.8	30.0	30.0	30.8	30.0	29.2	28.4	29.2	29.2	28.4	29.2
85°	21.1	21.1	21.1	21.1	21.1	19.5	19.5	19.5	19.5	20.3	20.3
87.5°	12.2	12.2	12.2	12.2	12.2	11.4	10.5	11.4	11.4	11.4	11.4
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1
2.5°	348.1	342.4	341.6	338.4	336.7	338.4	338.4	331.9	335.1	330.2	331.9
5°	355.4	347.3	345.7	340.8	337.5	337.5	336.7	329.4	331.1	324.6	324.6
7.5°	359.5	351.3	346.5	340.8	335.9	335.9	331.9	323.7	324.6	317.3	316.4
10°	360.3	350.5	344.8	338.4	331.9	329.4	326.2	316.4	315.6	308.3	307.5
12.5°	359.5	347.3	340.8	332.7	326.2	322.1	317.3	307.5	306.7	298.6	296.2
15°	354.6	341.6	334.3	324.6	316.4	312.4	307.5	297.8	296.2	287.2	285.6
17.5°	347.3	332.7	325.4	315.6	306.7	301.8	297.0	286.4	284.8	283.2	274.3
20°	335.9	322.1	313.2	303.5	295.4	289.7	284.8	275.1	272.6	264.5	262.9
22.5°	323.7	310.8	301.8	292.1	284.0	276.7	272.6	263.7	261.3	253.2	251.5
25°	310.0	297.0	288.0	278.3	271.0	265.3	260.5	251.5	249.9	241.8	240.2
27.5°	294.5	282.4	274.3	265.3	258.0	253.2	248.3	239.4	238.6	231.2	229.6
30°	279.9	267.8	261.3	251.5	244.2	241.0	236.1	228.0	227.2	220.7	219.1
32.5°	263.7	253.2	245.9	238.6	232.1	228.8	224.8	216.6	215.8	210.2	208.5
35°	247.5	237.7	232.1	225.6	219.1	216.6	213.4	209.3	204.5	199.6	198.8
37.5°	232.9	223.9	219.1	212.6	206.9	204.5	201.2	194.7	193.9	189.9	189.9
40°	218.3	210.2	206.1	200.4	195.5	193.1	190.7	185.0	184.2	180.1	180.1
42.5°	203.7	197.2	193.1	192.3	184.2	181.8	180.1	175.3	174.5	170.4	171.2
45°	190.7	184.2	180.9	177.7	172.8	171.2	169.6	164.7	165.5	161.5	162.3
47.5°	177.7	172.0	169.6	166.3	162.3	160.7	159.8	155.8	155.8	151.7	152.5
50°	165.5	160.7	158.2	155.0	151.7	151.7	150.1	146.1	146.9	143.6	143.6
52.5°	154.2	149.3	147.7	144.4	142.0	142.0	141.2	137.1	137.1	134.7	134.7
55°	142.8	138.7	137.1	134.7	132.3	131.4	130.6	127.4	128.2	125.8	125.8
57.5°	130.6	127.4	126.6	124.1	122.5	121.7	120.9	117.7	118.5	116.8	116.8
60°	119.3	116.8	116.0	114.4	112.0	112.0	111.2	108.7	109.5	107.1	107.9
62.5°	108.7	104.7	105.5	106.3	103.0	103.0	102.2	99.8	99.8	98.2	99.0
65°	98.2	94.9	95.7	94.9	93.3	93.3	92.5	90.1	90.9	89.3	89.3
67.5°	87.6	86.8	86.0	85.2	85.2	83.6	82.8	80.3	81.1	79.5	80.3
70°	77.9	76.3	76.3	74.6	73.0	73.8	73.0	71.4	72.2	70.6	71.4
72.5°	68.2	66.5	66.5	64.9	64.1	64.1	63.3	61.7	62.5	61.7	61.7
75°	58.4	56.8	56.0	56.0	55.2	54.4	54.4	52.7	53.6	51.9	52.7
77.5°	47.9	47.1	47.1	46.2	45.4	45.4	44.6	43.8	43.8	43.0	43.0
80°	38.1	38.1	37.3	36.5	36.5	36.5	35.7	34.9	34.9	34.1	34.1
82.5°	29.2	28.4	28.4	28.4	27.6	26.8	26.8	26.0	26.0	26.0	25.2
85°	20.3	19.5	19.5	18.7	18.7	18.7	17.9	17.0	17.0	17.0	17.0
87.5°	11.4	10.5	10.5	10.5	9.7	10.5	9.7	8.9	8.9	8.9	8.9
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°	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1	335.1
2.5°	330.2	331.1	329.4	327.0	327.0	324.6	326.2	324.6	325.4	322.1	320.5
5°	322.9	322.9	319.7	316.4	315.6	313.2	313.2	311.6	311.6	308.3	305.9
7.5°	313.2	313.2	309.1	305.9	304.3	300.2	300.2	298.6	298.6	294.5	292.9
10°	303.5	302.7	297.0	294.5	292.1	288.0	288.0	286.4	285.6	281.6	280.7
12.5°	292.9	291.3	286.4	282.4	279.9	276.7	275.9	273.4	273.4	269.4	267.8
15°	281.6	279.9	275.1	271.0	268.6	264.5	263.7	262.1	261.3	257.2	256.4
17.5°	270.2	267.8	263.7	259.6	257.2	254.0	253.2	250.7	249.9	246.7	245.9
20°	258.8	257.2	252.3	248.3	246.7	243.4	241.8	239.4	239.4	236.1	234.5
22.5°	248.3	245.9	241.0	238.6	236.1	232.9	232.1	230.4	229.6	226.4	225.6
25°	237.7	235.3	231.2	228.0	230.4	223.1	221.5	220.7	219.9	216.6	215.8
27.5°	227.2	225.6	220.7	218.3	215.8	213.4	212.6	211.0	211.0	208.5	207.7
30°	215.8	215.8	211.0	209.3	206.9	204.5	204.5	202.0	202.0	199.6	198.8
32.5°	206.9	206.1	202.0	199.6	198.0	195.5	195.5	193.9	193.9	191.5	190.7
35°	197.2	196.4	192.3	190.7	189.1	186.6	187.4	185.8	185.0	183.4	183.4
37.5°	188.2	187.4	183.4	181.8	180.1	178.5	178.5	177.7	176.9	174.5	174.5
40°	178.5	180.1	174.5	173.6	171.2	169.6	170.4	168.8	168.8	167.1	167.1
42.5°	168.8	168.8	166.3	164.7	163.1	162.3	162.3	160.7	160.7	159.0	159.0
45°	160.7	160.7	157.4	159.8	155.0	154.2	154.2	152.5	152.5	150.9	150.9
47.5°	151.7	151.7	149.3	147.7	146.9	146.1	146.1	144.4	144.4	142.8	142.8
50°	143.6	143.6	141.2	139.6	138.7	137.9	137.9	136.3	136.3	134.7	135.5
52.5°	134.7	133.9	132.3	131.4	130.6	132.3	129.8	129.0	128.2	127.4	127.4
55°	125.0	125.8	124.1	123.3	121.7	124.1	120.9	120.9	120.1	118.5	119.3
57.5°	118.5	116.8	115.2	114.4	113.6	112.8	112.8	112.0	112.0	110.4	111.2
60°	107.1	107.9	106.3	105.5	104.7	103.9	103.9	103.0	103.0	102.2	102.2
62.5°	98.2	99.0	97.4	96.6	95.7	94.9	94.9	94.1	94.1	93.3	93.3
65°	89.3	89.3	88.4	87.6	86.8	86.0	86.0	86.0	85.2	85.2	85.2
67.5°	80.3	80.3	79.5	78.7	77.9	77.9	77.1	76.3	76.3	76.3	76.3
70°	70.6	70.6	70.6	69.8	69.0	69.0	68.2	67.3	67.3	67.3	67.3
72.5°	61.7	61.7	61.7	60.9	60.0	60.0	59.2	58.4	58.4	58.4	58.4
75°	52.7	52.7	51.9	51.9	51.1	51.1	50.3	49.5	49.5	49.5	49.5
77.5°	43.8	43.8	43.8	43.0	42.2	42.2	41.4	40.6	40.6	41.4	40.6
80°	34.1	34.9	34.9	34.1	33.3	33.3	32.5	32.5	31.6	32.5	32.5
82.5°	26.0	26.0	26.0	25.2	25.2	24.3	25.2	23.5	23.5	23.5	23.5
85°	17.9	17.9	17.9	17.0	16.2	16.2	16.2	15.4	14.6	15.4	15.4
87.5°	9.7	8.9	8.9	8.9	8.9	8.1	8.1	8.1	7.3	8.1	8.1
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°	335.1	335.1	335.1	335.1
2.5°	322.9	322.9	324.6	319.7
5°	307.5	308.3	310.0	305.1
7.5°	293.7	294.5	295.4	290.5
10°	279.9	281.6	282.4	277.5
12.5°	266.1	268.6	270.2	266.1
15°	256.4	256.4	258.0	254.0
17.5°	245.0	245.9	246.7	243.4
20°	234.5	235.3	236.1	232.9
22.5°	224.8	226.4	226.4	223.9
25°	215.8	216.6	217.5	215.0
27.5°	206.9	207.7	208.5	206.1
30°	198.8	201.2	199.6	198.0
32.5°	190.7	191.5	191.5	189.9
35°	186.6	182.6	184.2	182.6
37.5°	173.6	174.5	175.3	173.6
40°	166.3	167.1	167.1	167.1
42.5°	159.0	158.2	159.8	159.0
45°	154.2	150.9	151.7	150.9
47.5°	142.8	142.8	143.6	143.6
50°	134.7	135.5	135.5	135.5
52.5°	126.6	127.4	128.2	128.2
55°	119.3	119.3	120.1	120.1
57.5°	110.4	110.4	111.2	111.2
60°	102.2	102.2	103.0	103.0
62.5°	93.3	93.3	94.1	94.1
65°	84.4	84.4	85.2	85.2
67.5°	76.3	76.3	76.3	77.1
70°	67.3	67.3	67.3	68.2
72.5°	58.4	58.4	59.2	59.2
75°	49.5	49.5	50.3	50.3
77.5°	40.6	40.6	41.4	42.2
80°	32.5	32.5	32.5	32.5
82.5°	23.5	23.5	24.3	25.2
85°	15.4	15.4	15.4	15.4
87.5°	8.1	8.1	8.1	8.9
90°	0.0	0.0	0.0	0.0

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