

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: P130086

Luminaire Tested: **HL618TAT - HLM6940 - HL6NFL - 70PS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130086
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: HL618TAT - HLM6940 - HL6NFL - 70PS
Description: HALO ALLSLOPE 6" 30W, 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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1188.1 lumens
Efficiency: N/A
Efficacy: 43.0 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

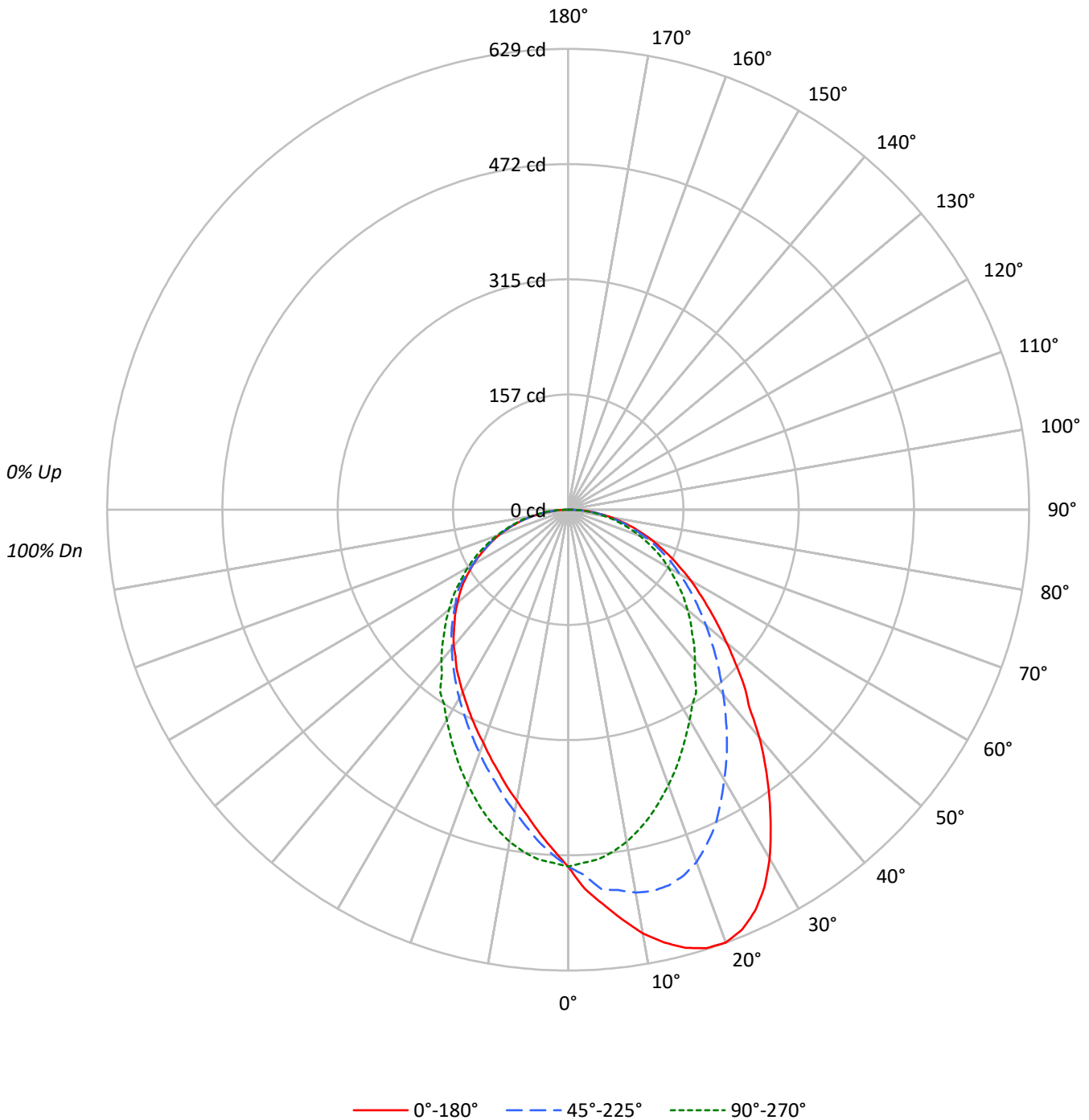
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	29075	29075	29075
5°	31633	28037	25970
10°	34004	26633	23356
15°	35721	24968	21299
20°	36408	23156	19606
25°	35389	21424	18313
30°	32843	19804	17198
35°	29416	18696	16306
40°	25849	17133	15483
45°	22656	15966	14633
50°	19882	14973	13894
55°	17615	13971	13172
60°	15811	12917	12247
65°	14009	11777	11138
70°	12257	10471	9997
75°	10375	8882	8465
80°	8090	6952	6472
85°	5208	4207	3800



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.1	3.9
10°-20°	129.8	10.9
20°-30°	186.5	15.7
30°-40°	206.7	17.4
40°-50°	199.0	16.7
50°-60°	173.7	14.6
60°-70°	134.0	11.3
70°-80°	83.5	7.0
80°-90°	28.7	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°	362.5	30.5
0°-40°	569.2	47.9
0°-60°	941.9	79.3
0°-90°	1188.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1188.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	487	487	487	487	487	
5°	540	520	479	455	444	53
15°	619	531	433	384	369	175
25°	604	475	366	324	312	276
35°	479	377	304	271	265	299
45°	340	285	239	224	219	262
55°	234	209	185	180	175	210
65°	156	145	131	125	124	155
75°	90	85	77	74	73	95
85°	31	30	25	24	22	33
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°	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1
2.5°	517.8	506.0	508.3	509.5	508.3	501.2	501.2	503.6	502.4	498.9	502.4
5°	540.2	528.4	530.7	529.6	528.4	521.3	518.9	520.1	518.9	520.1	515.4
7.5°	563.8	552.0	553.1	552.0	548.4	539.0	535.5	534.3	531.9	523.7	522.5
10°	587.3	572.0	572.0	572.0	567.3	554.3	549.6	546.1	541.3	530.7	527.2
12.5°	605.0	590.9	589.7	588.5	581.4	576.7	559.0	553.1	546.1	533.1	527.2
15°	619.2	603.9	603.9	599.1	590.9	573.2	564.9	555.5	546.1	530.7	522.5
17.5°	627.4	613.3	610.9	605.0	594.4	575.6	563.8	552.0	540.2	523.7	514.2
20°	628.6	614.5	622.7	603.9	590.9	569.7	555.5	542.5	529.6	511.9	498.9
22.5°	620.4	606.2	614.5	593.2	580.3	557.9	542.5	527.2	513.0	494.2	482.4
25°	603.9	590.9	585.0	576.7	562.6	540.2	523.7	507.1	493.0	475.3	462.3
27.5°	580.3	567.3	560.2	552.0	539.0	516.6	500.1	483.6	469.4	450.5	438.7
30°	549.6	536.6	530.7	523.7	510.7	488.3	472.9	457.6	444.6	425.8	416.3
32.5°	514.2	506.0	497.7	491.8	481.2	460.0	444.6	430.5	418.7	402.2	392.7
35°	478.8	470.6	452.9	457.6	447.0	429.3	412.8	402.2	391.6	377.4	368.0
37.5°	442.3	434.0	426.9	422.2	405.7	397.5	383.3	373.9	364.4	352.6	344.4
40°	405.7	398.6	392.7	389.2	382.1	366.8	356.2	347.9	338.5	329.1	322.0
42.5°	365.6	364.4	360.9	357.4	351.5	338.5	329.1	322.0	314.9	306.6	300.7
45°	339.7	333.8	330.2	326.7	322.0	310.2	304.3	298.4	292.5	285.4	279.5
47.5°	309.0	304.3	301.9	299.6	294.9	284.2	279.5	274.8	270.1	264.2	260.6
50°	281.9	278.3	274.8	272.4	270.1	261.8	258.3	259.5	250.0	245.3	243.0
52.5°	257.1	253.6	251.2	248.9	246.5	240.6	237.1	233.5	231.2	226.4	224.1
55°	233.5	230.0	227.6	226.4	228.8	219.4	217.0	214.7	212.3	208.8	208.8
57.5°	212.3	208.8	207.6	207.6	205.2	200.5	198.1	197.0	194.6	192.2	191.1
60°	193.4	189.9	187.5	188.7	186.3	181.6	185.2	178.1	178.1	175.7	174.6
62.5°	173.4	171.0	169.8	169.8	167.5	165.1	163.9	162.8	161.6	160.4	159.2
65°	155.7	153.3	152.1	152.1	151.0	147.4	146.2	146.2	145.1	145.1	143.9
67.5°	138.0	135.6	135.6	135.6	134.5	132.1	130.9	130.9	129.7	129.7	128.6
70°	121.5	119.1	117.9	119.1	117.9	116.8	114.4	114.4	114.4	114.4	113.2
72.5°	105.0	103.8	102.6	103.8	102.6	100.2	99.1	101.4	99.1	99.1	97.9
75°	89.6	88.5	87.3	88.5	86.1	86.1	84.9	84.9	83.7	84.9	83.7
77.5°	74.3	73.1	73.1	73.1	71.9	70.8	69.6	70.8	69.6	69.6	69.6
80°	59.0	57.8	57.8	59.0	57.8	56.6	55.4	56.6	55.4	55.4	55.4
82.5°	44.8	43.6	43.6	44.8	43.6	42.5	41.3	42.5	42.5	41.3	42.5
85°	30.7	30.7	30.7	30.7	30.7	28.3	28.3	28.3	28.3	29.5	29.5
87.5°	17.7	17.7	17.7	17.7	17.7	16.5	15.3	16.5	16.5	16.5	16.5
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°	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1
2.5°	506.0	497.7	496.5	491.8	489.5	491.8	491.8	482.4	487.1	480.0	482.4
5°	516.6	504.8	502.4	495.4	490.6	490.6	489.5	478.8	481.2	471.8	471.8
7.5°	522.5	510.7	503.6	495.4	488.3	488.3	482.4	470.6	471.8	461.1	460.0
10°	523.7	509.5	501.2	491.8	482.4	478.8	474.1	460.0	458.8	448.2	447.0
12.5°	522.5	504.8	495.4	483.6	474.1	468.2	461.1	447.0	445.8	434.0	430.5
15°	515.4	496.5	485.9	471.8	460.0	454.1	447.0	432.8	430.5	417.5	415.2
17.5°	504.8	483.6	472.9	458.8	445.8	438.7	431.7	416.3	414.0	411.6	398.6
20°	488.3	468.2	455.3	441.1	429.3	421.0	414.0	399.8	396.3	384.5	382.1
22.5°	470.6	451.7	438.7	424.6	412.8	402.2	396.3	383.3	379.8	368.0	365.6
25°	450.5	431.7	418.7	404.5	393.9	385.7	378.6	365.6	363.3	351.5	349.1
27.5°	428.1	410.4	398.6	385.7	375.1	368.0	360.9	347.9	346.7	336.1	333.8
30°	406.9	389.2	379.8	365.6	355.0	350.3	343.2	331.4	330.2	320.8	318.4
32.5°	383.3	368.0	357.4	346.7	337.3	332.6	326.7	314.9	313.7	305.5	303.1
35°	359.7	345.6	337.3	327.9	318.4	314.9	310.2	304.3	297.2	290.1	289.0
37.5°	338.5	325.5	318.4	309.0	300.7	297.2	292.5	283.1	281.9	276.0	276.0
40°	317.3	305.5	299.6	291.3	284.2	280.7	277.2	268.9	267.7	261.8	261.8
42.5°	296.0	286.6	280.7	279.5	267.7	264.2	261.8	254.8	253.6	247.7	248.9
45°	277.2	267.7	263.0	258.3	251.2	248.9	246.5	239.4	240.6	234.7	235.9
47.5°	258.3	250.0	246.5	241.8	235.9	233.5	232.3	226.4	226.4	220.5	221.7
50°	240.6	233.5	230.0	225.3	220.5	220.5	218.2	212.3	213.5	208.8	208.8
52.5°	224.1	217.0	214.7	209.9	206.4	206.4	205.2	199.3	199.3	195.8	195.8
55°	207.6	201.7	199.3	195.8	192.2	191.1	189.9	185.2	186.3	182.8	182.8
57.5°	189.9	185.2	184.0	180.4	178.1	176.9	175.7	171.0	172.2	169.8	169.8
60°	173.4	169.8	168.7	166.3	162.8	162.8	161.6	158.0	159.2	155.7	156.9
62.5°	158.0	152.1	153.3	154.5	149.8	149.8	148.6	145.1	145.1	142.7	143.9
65°	142.7	138.0	139.2	138.0	135.6	135.6	134.5	130.9	132.1	129.7	129.7
67.5°	127.4	126.2	125.0	123.8	123.8	121.5	120.3	116.8	117.9	115.6	116.8
70°	113.2	110.9	110.9	108.5	106.1	107.3	106.1	103.8	105.0	102.6	103.8
72.5°	99.1	96.7	96.7	94.4	93.2	93.2	92.0	89.6	90.8	89.6	89.6
75°	84.9	82.6	81.4	81.4	80.2	79.0	79.0	76.7	77.8	75.5	76.7
77.5°	69.6	68.4	68.4	67.2	66.0	66.0	64.9	63.7	63.7	62.5	62.5
80°	55.4	55.4	54.3	53.1	53.1	53.1	51.9	50.7	50.7	49.5	49.5
82.5°	42.5	41.3	41.3	41.3	40.1	38.9	38.9	37.7	37.7	37.7	36.6
85°	29.5	28.3	28.3	27.1	27.1	27.1	25.9	24.8	24.8	24.8	24.8
87.5°	16.5	15.3	15.3	15.3	14.2	15.3	14.2	13.0	13.0	13.0	13.0
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1
2.5°	480.0	481.2	478.8	475.3	475.3	471.8	474.1	471.8	472.9	468.2	465.9
5°	469.4	469.4	464.7	460.0	458.8	455.3	455.3	452.9	452.9	448.2	444.6
7.5°	455.3	455.3	449.4	444.6	442.3	436.4	436.4	434.0	434.0	428.1	425.8
10°	441.1	439.9	431.7	428.1	424.6	418.7	418.7	416.3	415.2	409.3	408.1
12.5°	425.8	423.4	416.3	410.4	406.9	402.2	401.0	397.5	397.5	391.6	389.2
15°	409.3	406.9	399.8	393.9	390.4	384.5	383.3	380.9	379.8	373.9	372.7
17.5°	392.7	389.2	383.3	377.4	373.9	369.2	368.0	364.4	363.3	358.5	357.4
20°	376.2	373.9	366.8	360.9	358.5	353.8	351.5	347.9	347.9	343.2	340.8
22.5°	360.9	357.4	350.3	346.7	343.2	338.5	337.3	335.0	333.8	329.1	327.9
25°	345.6	342.0	336.1	331.4	335.0	324.3	322.0	320.8	319.6	314.9	313.7
27.5°	330.2	327.9	320.8	317.3	313.7	310.2	309.0	306.6	306.6	303.1	301.9
30°	313.7	313.7	306.6	304.3	300.7	297.2	297.2	293.7	293.7	290.1	289.0
32.5°	300.7	299.6	293.7	290.1	287.8	284.2	284.2	281.9	281.9	278.3	277.2
35°	286.6	285.4	279.5	277.2	274.8	271.3	272.4	270.1	268.9	266.5	266.5
37.5°	273.6	272.4	266.5	264.2	261.8	259.5	259.5	258.3	257.1	253.6	253.6
40°	259.5	261.8	253.6	252.4	248.9	246.5	247.7	245.3	245.3	243.0	243.0
42.5°	245.3	245.3	241.8	239.4	237.1	235.9	235.9	233.5	233.5	231.2	231.2
45°	233.5	233.5	228.8	232.3	225.3	224.1	224.1	221.7	221.7	219.4	219.4
47.5°	220.5	220.5	217.0	214.7	213.5	212.3	212.3	209.9	209.9	207.6	207.6
50°	208.8	208.8	205.2	202.9	201.7	200.5	200.5	198.1	198.1	195.8	197.0
52.5°	195.8	194.6	192.2	191.1	189.9	192.2	188.7	187.5	186.3	185.2	185.2
55°	181.6	182.8	180.4	179.3	176.9	180.4	175.7	175.7	174.6	172.2	173.4
57.5°	172.2	169.8	167.5	166.3	165.1	163.9	163.9	162.8	162.8	160.4	161.6
60°	155.7	156.9	154.5	153.3	152.1	151.0	151.0	149.8	149.8	148.6	148.6
62.5°	142.7	143.9	141.5	140.3	139.2	138.0	138.0	136.8	136.8	135.6	135.6
65°	129.7	129.7	128.6	127.4	126.2	125.0	125.0	125.0	123.8	123.8	123.8
67.5°	116.8	116.8	115.6	114.4	113.2	113.2	112.0	110.9	110.9	110.9	110.9
70°	102.6	102.6	102.6	101.4	100.2	100.2	99.1	97.9	97.9	97.9	97.9
72.5°	89.6	89.6	89.6	88.5	87.3	87.3	86.1	84.9	84.9	84.9	84.9
75°	76.7	76.7	75.5	75.5	74.3	74.3	73.1	71.9	71.9	71.9	71.9
77.5°	63.7	63.7	63.7	62.5	61.3	61.3	60.1	59.0	59.0	60.1	59.0
80°	49.5	50.7	50.7	49.5	48.4	48.4	47.2	47.2	46.0	47.2	47.2
82.5°	37.7	37.7	37.7	36.6	36.6	35.4	36.6	34.2	34.2	34.2	34.2
85°	25.9	25.9	25.9	24.8	23.6	23.6	23.6	22.4	21.2	22.4	22.4
87.5°	14.2	13.0	13.0	13.0	13.0	11.8	11.8	11.8	10.6	11.8	11.8
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°	487.1	487.1	487.1	487.1
2.5°	469.4	469.4	471.8	464.7
5°	447.0	448.2	450.5	443.5
7.5°	426.9	428.1	429.3	422.2
10°	406.9	409.3	410.4	403.4
12.5°	386.8	390.4	392.7	386.8
15°	372.7	372.7	375.1	369.2
17.5°	356.2	357.4	358.5	353.8
20°	340.8	342.0	343.2	338.5
22.5°	326.7	329.1	329.1	325.5
25°	313.7	314.9	316.1	312.5
27.5°	300.7	301.9	303.1	299.6
30°	289.0	292.5	290.1	287.8
32.5°	277.2	278.3	278.3	276.0
35°	271.3	265.4	267.7	265.4
37.5°	252.4	253.6	254.8	252.4
40°	241.8	243.0	243.0	243.0
42.5°	231.2	230.0	232.3	231.2
45°	224.1	219.4	220.5	219.4
47.5°	207.6	207.6	208.8	208.8
50°	195.8	197.0	197.0	197.0
52.5°	184.0	185.2	186.3	186.3
55°	173.4	173.4	174.6	174.6
57.5°	160.4	160.4	161.6	161.6
60°	148.6	148.6	149.8	149.8
62.5°	135.6	135.6	136.8	136.8
65°	122.7	122.7	123.8	123.8
67.5°	110.9	110.9	110.9	112.0
70°	97.9	97.9	97.9	99.1
72.5°	84.9	84.9	86.1	86.1
75°	71.9	71.9	73.1	73.1
77.5°	59.0	59.0	60.1	61.3
80°	47.2	47.2	47.2	47.2
82.5°	34.2	34.2	35.4	36.6
85°	22.4	22.4	22.4	22.4
87.5°	11.8	11.8	11.8	13.0
90°	0.0	0.0	0.0	0.0

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