

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: P130182

Luminaire Tested: **HL612ICAT - HLM6930 - HL6FL - 70PS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130182
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33455)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL612ICAT - HLM6930 - HL6FL - 70PS
Description: HALO ALLSLOPE 6" 21W, Albalite Glass Lens, White Polymer Trim Ring
"Dead Front", Wet Location - Showerlight using 40 Degree Optic at a 6-12
Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 804.2 lumens
Efficiency: N/A
Efficacy: 42.1 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.05 / 1.21
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

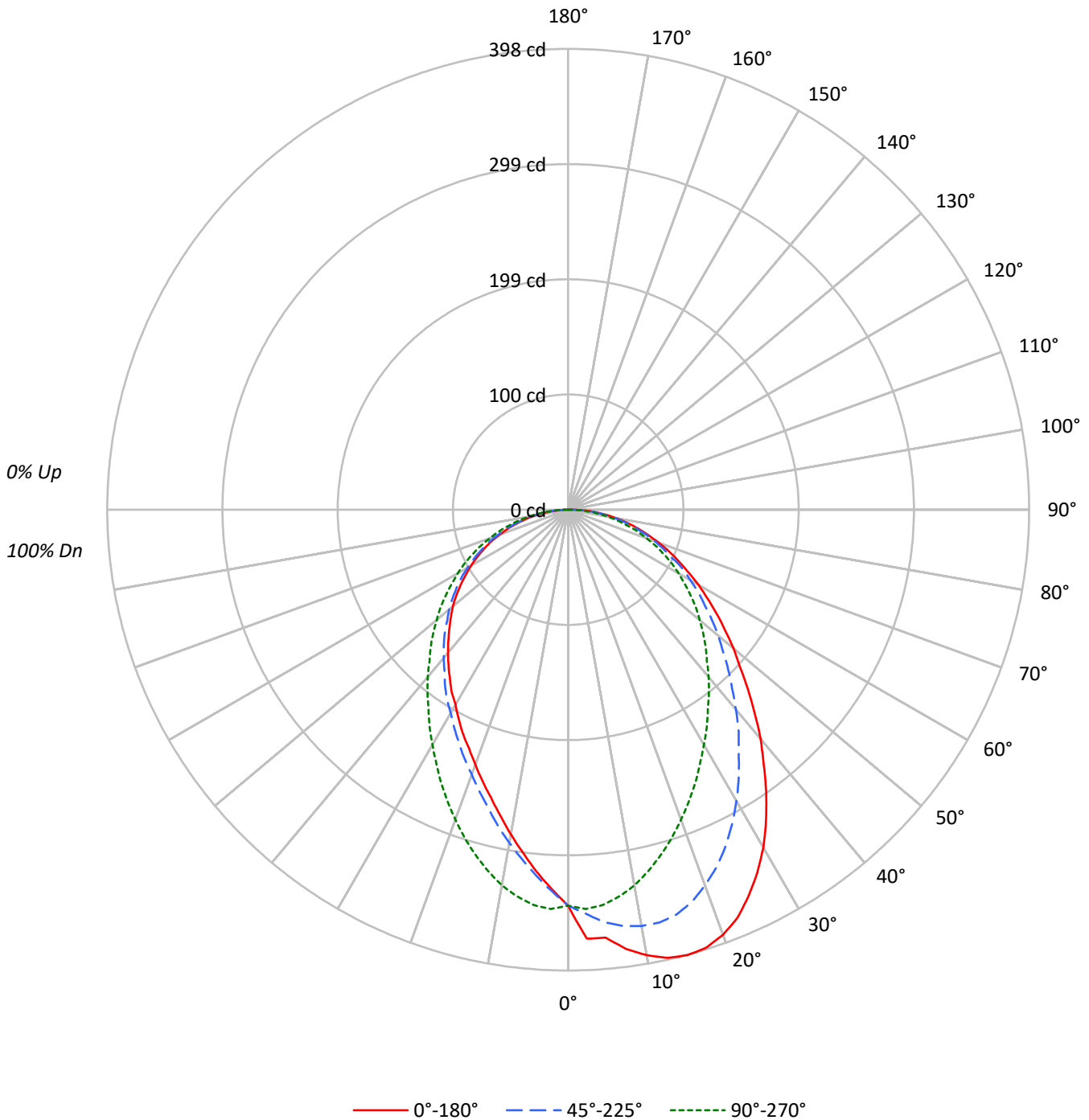
Input Watts (W): 19.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	94	91	88	90	88	86	84
2	99	91	84	78	96	89	83	78	85	80	76	82	78	74	79	76	72	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	53	51
5	77	64	55	49	75	63	55	48	61	54	48	59	52	47	57	51	47	45
6	71	58	49	43	69	57	49	43	55	48	42	54	47	42	52	46	42	40
7	66	53	44	38	64	52	44	38	50	43	38	49	42	37	48	42	37	35
8	62	48	40	34	60	48	40	34	46	39	34	45	39	34	44	38	34	32
9	58	45	36	31	56	44	36	31	43	36	31	42	35	31	41	35	30	29
10	54	41	33	28	53	41	33	28	40	33	28	39	32	28	38	32	28	26

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	20408	20408	20408
5°	21719	20068	18369
10°	22621	19078	16490
15°	22972	17814	14855
20°	22629	16496	13571
25°	21588	15230	12564
30°	20132	14001	11623
35°	18308	12920	10936
40°	16457	12023	10284
45°	14633	11205	9664
50°	13139	10452	9169
55°	11806	9739	8555
60°	10628	9001	7922
65°	9456	8196	7225
70°	8353	7263	6345
75°	7191	6137	5269
80°	5786	4772	3976
85°	3936	2952	2104



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.2	4.0
10°-20°	88.9	11.1
20°-30°	125.8	15.6
30°-40°	139.2	17.3
40°-50°	134.3	16.7
50°-60°	117.4	14.6
60°-70°	90.5	11.3
70°-80°	56.4	7.0
80°-90°	19.4	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°	246.9	30.7
0°-40°	386.1	48.0
0°-60°	637.8	79.3
0°-90°	804.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	804.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	342	342	342	342	342	
5°	371	358	343	317	314	36
15°	398	362	309	267	258	112
25°	368	321	260	223	214	169
35°	298	257	210	185	178	186
45°	219	195	168	151	145	170
55°	156	144	129	118	113	140
65°	105	99	91	83	80	105
75°	62	60	53	48	46	66
85°	23	22	17	14	12	25
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°	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9
2.5°	370.9	353.5	359.3	352.6	351.8	347.7	351.8	354.3	347.7	349.3	350.2
5°	370.9	367.6	371.7	365.1	364.2	367.6	363.4	364.2	356.0	357.6	356.8
7.5°	382.5	378.3	383.3	375.8	375.0	376.7	371.7	372.5	362.6	362.6	361.8
10°	390.7	387.4	391.6	383.3	381.6	383.3	377.5	377.5	365.9	365.1	362.6
12.5°	396.5	393.2	396.5	388.2	386.6	387.4	380.0	378.3	366.7	365.1	360.9
15°	398.2	394.9	399.0	389.1	387.4	386.6	379.1	377.5	364.2	361.8	356.8
17.5°	396.5	393.2	396.5	386.6	384.1	382.5	375.0	372.5	359.3	355.1	349.3
20°	390.7	385.8	390.7	380.8	377.5	375.8	366.7	364.2	350.2	345.2	339.4
22.5°	381.6	378.3	381.6	370.9	368.4	365.9	356.8	353.5	339.4	334.4	327.0
25°	368.4	366.7	364.2	358.4	355.1	353.5	344.4	340.2	326.2	321.2	313.7
27.5°	353.5	351.8	353.5	342.7	340.2	336.9	329.5	325.3	311.3	306.3	298.0
30°	336.9	333.6	336.1	326.2	324.5	319.5	312.1	308.8	294.7	290.6	282.3
32.5°	317.9	316.2	317.9	307.9	305.5	302.2	294.7	291.4	278.1	274.0	267.4
35°	298.0	294.7	297.2	288.1	286.4	282.3	275.7	272.4	260.8	256.6	250.8
37.5°	277.3	274.8	277.3	269.0	267.4	263.2	258.3	254.1	243.4	241.7	235.1
40°	258.3	255.8	257.5	250.8	248.3	245.9	240.9	236.8	227.6	225.2	215.2
42.5°	238.4	236.8	238.4	231.0	229.3	226.8	222.7	220.2	211.9	209.4	204.5
45°	219.4	218.5	220.2	214.4	211.9	210.3	206.1	204.5	196.2	195.4	191.2
47.5°	201.2	205.3	202.0	197.0	195.4	192.9	190.4	189.6	182.1	181.3	177.2
50°	186.3	184.6	184.6	180.5	180.5	178.0	176.3	174.7	168.9	168.9	164.7
52.5°	170.5	169.7	169.7	166.4	165.6	164.7	162.3	161.4	155.6	156.5	153.1
55°	156.5	158.9	155.6	152.3	152.3	150.7	149.8	149.0	144.0	144.0	140.7
57.5°	142.4	141.6	142.4	139.1	139.1	137.4	136.6	136.6	131.6	133.3	130.0
60°	130.0	128.3	129.1	126.7	125.8	125.8	126.7	125.0	120.9	121.7	119.2
62.5°	116.7	115.9	117.5	114.2	114.2	114.2	113.4	113.4	109.3	112.6	108.4
65°	105.1	104.3	106.0	103.5	103.5	102.6	101.8	101.8	99.3	99.3	98.5
67.5°	94.4	93.5	95.2	92.7	92.7	91.9	91.9	91.1	88.6	89.4	87.7
70°	82.8	82.8	83.6	82.0	82.0	81.1	81.1	80.3	78.6	79.5	77.8
72.5°	72.0	72.0	72.8	71.2	71.2	70.4	70.4	70.4	68.7	69.5	67.9
75°	62.1	62.1	62.1	61.3	61.3	60.4	60.4	60.4	58.8	59.6	58.8
77.5°	52.2	52.2	52.2	51.3	51.3	50.5	50.5	50.5	48.8	49.7	48.8
80°	42.2	42.2	42.2	41.4	41.4	40.6	40.6	40.6	39.7	40.6	39.7
82.5°	32.3	32.3	33.1	32.3	32.3	31.5	31.5	31.5	30.6	30.6	30.6
85°	23.2	23.2	24.0	23.2	22.4	22.4	22.4	21.5	21.5	21.5	21.5
87.5°	14.9	14.9	14.9	14.9	14.1	14.1	13.2	13.2	13.2	13.2	13.2
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°	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9
2.5°	351.0	346.9	347.7	344.4	345.2	343.5	342.7	345.2	337.7	343.5	339.4
5°	356.8	351.0	351.0	346.0	346.0	342.7	340.2	342.7	332.8	337.7	332.8
7.5°	359.3	352.6	351.0	345.2	344.4	339.4	336.1	336.9	327.0	330.3	323.7
10°	360.1	351.8	349.3	341.9	339.4	334.4	328.6	329.5	317.9	321.2	313.7
12.5°	356.8	347.7	344.4	336.1	332.0	326.2	319.5	319.5	307.1	310.4	303.0
15°	351.8	341.9	336.9	327.8	323.7	317.1	309.6	308.8	297.2	298.0	290.6
17.5°	343.5	332.8	326.2	317.1	312.9	305.5	298.0	297.2	285.6	286.4	279.0
20°	332.8	321.2	315.4	306.3	305.5	293.9	286.4	284.8	272.4	274.0	266.6
22.5°	321.2	309.6	303.0	293.0	288.1	280.6	273.2	272.4	260.8	260.8	254.1
25°	306.3	295.5	289.7	279.8	274.8	268.2	259.9	259.9	248.3	248.3	242.5
27.5°	292.2	281.5	274.8	265.7	261.6	259.9	247.5	246.7	235.9	236.8	231.0
30°	276.5	269.0	260.8	251.7	247.5	241.7	235.1	234.3	224.3	221.0	219.4
32.5°	261.6	251.7	246.7	238.4	234.3	228.5	222.7	222.7	212.7	214.4	208.6
35°	245.9	241.7	231.8	224.3	221.0	216.9	210.3	210.3	202.0	202.8	198.7
37.5°	230.1	221.9	221.9	211.9	205.3	204.5	199.5	199.5	191.2	192.9	188.7
40°	216.1	208.6	204.5	199.5	196.2	192.9	188.7	188.7	181.3	182.9	178.8
42.5°	202.0	194.5	192.1	187.1	184.6	181.3	177.2	177.2	171.4	172.2	168.9
45°	188.7	182.1	180.5	178.0	173.0	171.4	167.2	168.0	161.4	162.3	159.8
47.5°	175.5	169.7	168.0	163.9	162.3	159.8	156.5	158.1	151.5	152.3	150.7
50°	163.9	158.1	157.3	153.1	152.3	150.7	147.4	148.2	143.2	144.0	142.4
52.5°	152.3	147.4	146.5	143.2	142.4	139.9	137.4	139.1	134.1	134.9	132.5
55°	140.7	136.6	135.8	132.5	132.5	130.8	127.5	129.1	124.2	125.8	123.3
57.5°	129.1	126.7	125.0	122.5	122.5	120.9	118.4	119.2	115.9	115.9	115.1
60°	119.2	115.1	115.9	112.6	112.6	111.8	108.4	110.1	106.0	106.8	106.0
62.5°	108.4	105.1	105.1	103.5	102.6	101.8	99.3	101.0	96.9	97.7	96.0
65°	98.5	96.0	95.2	93.5	92.7	91.9	90.2	91.1	87.7	88.6	87.7
67.5°	87.7	86.1	85.3	83.6	83.6	82.8	80.3	82.0	78.6	79.5	78.6
70°	77.8	76.2	76.2	73.7	73.7	72.8	71.2	72.0	69.5	69.5	69.5
72.5°	68.7	66.2	65.4	64.6	64.6	63.7	62.1	62.9	60.4	60.4	59.6
75°	58.8	57.1	57.1	55.5	54.6	54.6	53.0	53.0	51.3	51.3	50.5
77.5°	48.8	47.2	47.2	45.5	45.5	45.5	43.9	43.9	42.2	42.2	42.2
80°	39.7	38.1	38.1	36.4	36.4	36.4	34.8	34.8	33.1	33.1	33.1
82.5°	30.6	29.0	29.0	28.1	27.3	27.3	26.5	25.7	24.8	24.8	24.8
85°	21.5	20.7	20.7	19.9	19.0	19.0	17.4	17.4	16.6	16.6	16.6
87.5°	12.4	12.4	11.6	11.6	11.6	10.8	9.9	9.1	8.3	8.3	9.1
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9	341.9
2.5°	336.1	335.3	336.1	338.6	336.1	329.5	336.1	332.0	328.6	330.3	327.0
5°	327.8	327.0	326.2	327.8	323.7	317.1	323.7	319.5	314.6	314.6	312.9
7.5°	318.7	317.1	315.4	316.2	312.1	304.6	309.6	306.3	302.2	303.0	298.8
10°	308.8	305.5	303.8	303.8	298.8	292.2	296.4	293.0	288.1	288.9	284.8
12.5°	297.2	293.9	292.2	291.4	286.4	279.8	283.9	279.8	275.7	275.7	271.5
15°	282.3	281.5	279.8	279.0	274.0	266.6	271.5	266.6	262.4	263.2	259.1
17.5°	273.2	269.0	266.6	265.7	261.6	255.0	259.1	255.0	250.8	250.8	246.7
20°	261.6	257.5	254.1	254.1	249.2	243.4	247.5	244.2	238.4	240.1	235.9
22.5°	249.2	245.0	243.4	242.5	237.6	233.4	236.8	233.4	228.5	228.5	225.2
25°	237.6	234.3	232.6	231.8	226.8	222.7	226.0	223.5	218.5	219.4	215.2
27.5°	226.8	222.7	221.0	221.0	216.9	212.7	216.1	212.7	208.6	209.4	205.3
30°	215.2	211.9	211.1	211.1	206.1	202.8	205.3	202.8	198.7	199.5	196.2
32.5°	205.3	202.8	201.2	201.2	197.0	194.5	197.0	194.5	191.2	191.2	187.9
35°	195.4	192.1	191.2	194.5	187.9	185.4	187.1	185.4	182.1	182.1	178.8
37.5°	185.4	182.9	182.1	182.9	178.0	175.5	178.8	177.2	173.8	173.8	168.9
40°	175.5	173.8	173.0	173.0	169.7	167.2	170.5	168.0	165.6	165.6	162.3
42.5°	166.4	163.9	163.9	164.7	160.6	158.9	161.4	159.8	156.5	156.5	154.0
45°	158.1	155.6	154.8	155.6	156.5	150.7	153.1	152.3	145.7	149.0	146.5
47.5°	149.0	146.5	146.5	146.5	144.0	141.6	144.0	143.2	139.9	140.7	138.2
50°	140.7	138.2	137.4	138.2	134.9	134.1	136.6	134.9	130.0	132.5	130.8
52.5°	130.8	129.1	129.1	130.0	127.5	125.8	128.3	126.7	124.2	124.2	122.5
55°	122.5	120.9	120.9	121.7	119.2	117.5	119.2	118.4	115.9	115.9	114.2
57.5°	113.4	111.8	112.6	112.6	110.1	109.3	110.9	109.3	107.6	107.6	106.0
60°	104.3	102.6	103.5	103.5	101.8	100.2	101.8	101.0	98.5	98.5	97.7
62.5°	95.2	94.4	94.4	94.4	92.7	91.9	92.7	91.9	90.2	90.2	88.6
65°	86.9	85.3	85.3	85.3	83.6	82.8	83.6	82.8	82.0	81.1	80.3
67.5°	77.8	77.0	76.2	76.2	74.5	74.5	74.5	73.7	72.8	72.0	71.2
70°	68.7	67.1	67.1	67.1	66.2	65.4	65.4	64.6	64.6	63.7	62.9
72.5°	59.6	57.9	58.8	57.9	57.1	56.3	56.3	56.3	55.5	54.6	54.6
75°	50.5	49.7	49.7	49.7	48.0	48.0	48.0	47.2	46.4	46.4	45.5
77.5°	41.4	40.6	42.2	40.6	39.7	38.9	38.9	38.9	37.3	37.3	37.3
80°	33.1	31.5	32.3	32.3	30.6	30.6	29.8	29.8	29.0	29.0	29.0
82.5°	24.0	24.0	24.0	23.2	22.4	22.4	22.4	21.5	20.7	20.7	20.7
85°	15.7	15.7	14.9	14.9	14.9	14.1	14.1	13.2	12.4	12.4	12.4
87.5°	7.5	7.5	7.5	7.5	6.6	6.6	6.6	5.8	5.8	5.0	5.8
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°	341.9	341.9	341.9	341.9
2.5°	326.2	328.6	329.5	327.8
5°	312.1	314.6	314.6	313.7
7.5°	297.2	301.3	300.5	298.8
10°	283.1	287.3	286.4	284.8
12.5°	269.9	273.2	272.4	270.7
15°	256.6	260.8	259.9	257.5
17.5°	245.0	248.3	248.3	245.9
20°	234.3	237.6	236.8	234.3
22.5°	224.3	226.8	226.0	223.5
25°	214.4	221.9	216.1	214.4
27.5°	204.5	207.8	207.0	204.5
30°	195.4	197.8	197.0	194.5
32.5°	187.1	190.4	188.7	187.1
35°	178.0	181.3	179.6	178.0
37.5°	170.5	173.0	171.4	169.7
40°	161.4	164.7	163.9	161.4
42.5°	154.0	156.5	155.6	153.1
45°	146.5	149.0	148.2	144.9
47.5°	138.2	140.7	139.1	137.4
50°	130.0	132.5	131.6	130.0
52.5°	122.5	125.0	123.3	121.7
55°	114.2	116.7	115.1	113.4
57.5°	106.0	108.4	106.8	105.1
60°	96.9	99.3	97.7	96.9
62.5°	88.6	91.1	89.4	88.6
65°	80.3	82.0	81.1	80.3
67.5°	72.0	73.7	72.0	72.0
70°	62.9	64.6	63.7	62.9
72.5°	53.8	55.5	55.5	54.6
75°	45.5	46.4	46.4	45.5
77.5°	37.3	38.1	37.3	37.3
80°	29.0	29.0	29.0	29.0
82.5°	20.7	21.5	20.7	20.7
85°	12.4	13.2	12.4	12.4
87.5°	5.0	5.8	5.0	5.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)