

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: P130189

Luminaire Tested: **HL612ICAT - HLM6927 - HL6FL - 73PS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130189
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33459)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL612ICAT - HLM6927 - HL6FL - 73PS
Description: HALO ALLSLOPE 6" 21W, Fresnel 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1068.3 lumens
Efficiency: N/A
Efficacy: 55.9 lumens/watt
Spacing Criteria (0/90/45): 1.41 / 0.8 / 1.07
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

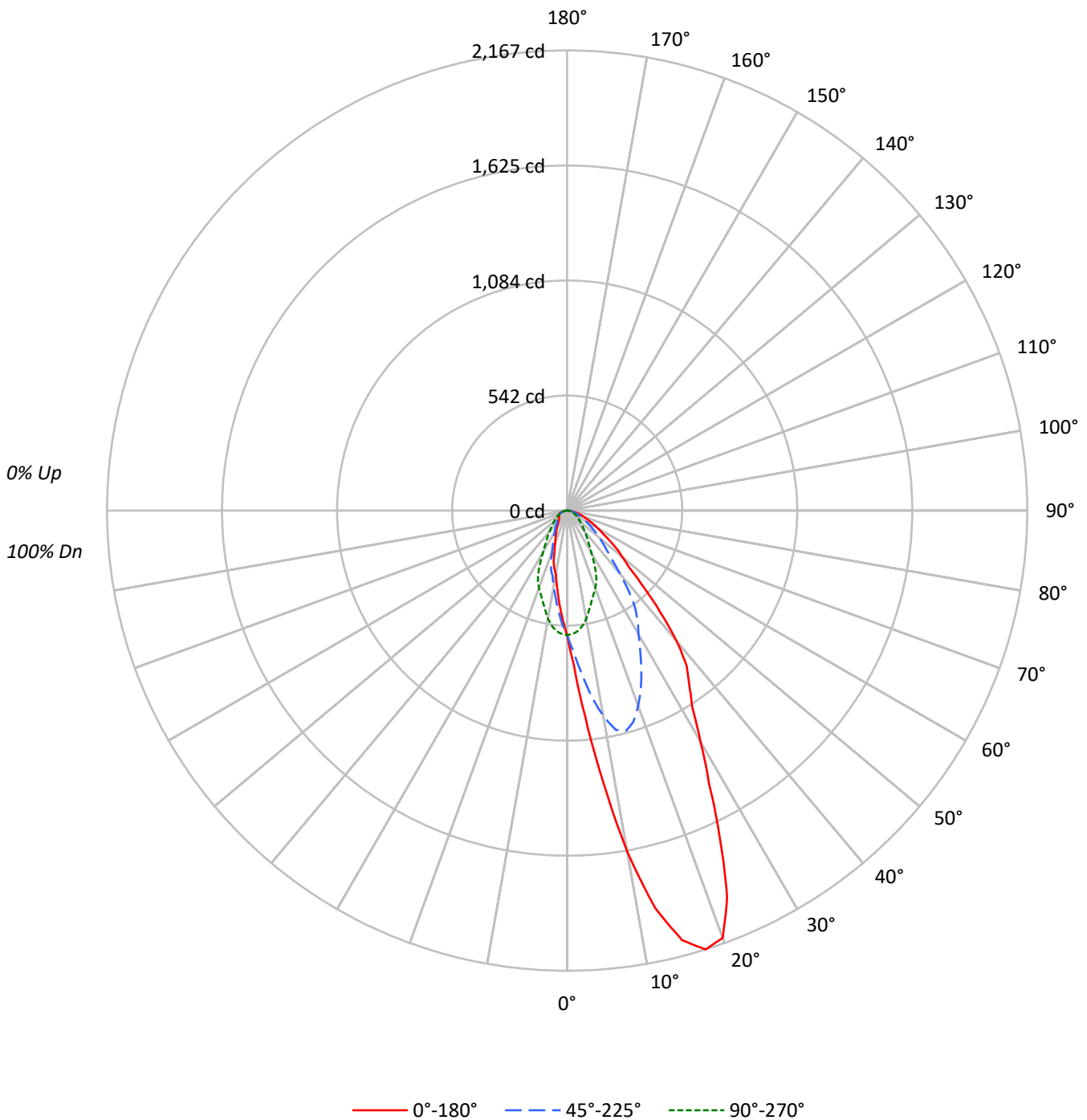
Input Watts (W): 19.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	
2	103	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	80				79	
3	96	88	81	76	94	86	80	76	84	79	74	81	77	73	79	75	72				70	
4	90	80	73	68	88	79	72	67	77	71	66	74	70	65	72	68	65				63	
5	84	74	66	61	82	72	66	60	71	64	60	69	63	59	67	62	59				57	
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	53				52	
7	74	63	55	50	73	62	55	50	60	54	50	59	53	49	58	53	49				47	
8	70	58	51	46	68	58	51	46	56	50	46	55	49	45	54	49	45				43	
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	45	42				40	
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39				37	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	35021	35021	35021
5°	56965	33372	25297
10°	94549	29934	17694
15°	120806	25539	14093
20°	124041	22450	9539
25°	99826	18764	7360
30°	75019	13547	5814
35°	61598	10352	4657
40°	51195	8245	3950
45°	33820	6743	3675
50°	23768	5621	3456
55°	18030	4798	3697
60°	13653	4259	3573
65°	10410	3725	3653
70°	8040	3087	3480
75°	6380	2663	3011
80°	4415	2208	2317
85°	3121	1425	1561



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.4	5.8
10°-20°	207.3	19.4
20°-30°	253.0	23.7
30°-40°	210.6	19.7
40°-50°	141.2	13.2
50°-60°	91.0	8.5
60°-70°	58.2	5.5
70°-80°	33.0	3.1
80°-90°	11.7	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°	522.7	48.9
0°-40°	733.3	68.6
0°-60°	965.5	90.4
0°-90°	1068.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1068.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	587	587	587	587	587	
5°	973	767	570	473	432	113
15°	2094	1074	443	290	244	579
25°	1704	827	320	154	126	776
35°	1003	556	168	93	76	631
45°	507	264	101	64	55	406
55°	239	143	64	49	49	219
65°	116	74	41	41	41	117
75°	55	36	23	25	26	58
85°	18	13	8	9	9	20
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°	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7
2.5°	729.2	714.6	716.2	717.7	699.3	698.6	691.7	690.1	672.5	661.0	660.3
5°	972.8	939.1	940.6	926.0	902.3	880.8	856.3	834.9	798.1	766.7	746.0
7.5°	1278.4	1227.1	1239.3	1209.4	1152.0	1112.9	1057.8	1006.5	939.8	882.4	828.8
10°	1633.0	1575.6	1576.3	1534.2	1443.1	1363.4	1277.6	1196.4	1076.2	983.5	899.2
12.5°	1917.9	1877.4	1861.3	1809.2	1690.5	1611.6	1488.2	1348.8	1196.4	1057.8	945.2
15°	2094.1	2046.6	2035.9	1977.7	1856.7	1752.5	1600.1	1429.3	1245.4	1073.9	942.9
17.5°	2166.9	2119.4	2107.9	2037.4	1898.0	1775.5	1596.2	1407.1	1212.5	1040.9	908.4
20°	2141.6	2061.2	2061.2	1969.3	1802.3	1663.7	1492.8	1306.7	1132.1	977.4	864.0
22.5°	1968.5	1919.5	1888.8	1790.8	1630.0	1509.7	1338.9	1187.2	1040.2	906.9	806.5
25°	1703.5	1652.9	1629.2	1548.0	1403.2	1313.6	1181.1	1050.1	938.3	827.2	739.9
27.5°	1445.4	1403.2	1391.0	1328.9	1222.5	1142.0	1038.6	936.0	839.5	745.3	673.3
30°	1255.4	1217.1	1209.4	1155.8	1067.0	979.7	916.1	832.6	754.5	672.5	612.0
32.5°	1094.5	1070.8	1058.5	1009.5	939.8	890.0	826.5	756.8	690.1	617.4	560.7
35°	1002.6	975.1	964.3	924.5	858.6	814.2	756.8	693.2	626.6	556.1	498.6
37.5°	924.5	899.2	886.2	849.4	786.6	736.1	678.6	612.8	544.6	475.7	422.0
40°	803.5	778.2	772.8	734.6	677.1	629.6	576.0	510.9	445.0	384.5	341.6
42.5°	649.5	633.4	628.1	603.6	546.9	507.8	456.5	404.4	360.8	312.5	278.0
45°	507.1	491.7	481.8	461.1	422.8	402.9	362.3	326.3	294.9	263.5	241.3
47.5°	396.0	390.6	389.9	373.0	346.2	330.9	302.6	277.3	252.8	228.3	209.1
50°	337.0	327.1	326.3	318.6	298.7	286.5	262.0	239.7	221.4	199.9	181.5
52.5°	294.1	286.5	282.6	271.1	250.5	242.0	221.4	204.5	188.4	170.0	156.3
55°	239.0	235.1	232.1	224.4	208.3	199.1	186.1	170.8	157.8	143.2	132.5
57.5°	197.6	193.0	192.3	186.9	174.6	168.5	157.8	144.0	134.0	121.8	112.6
60°	167.0	163.1	160.9	156.3	146.3	141.7	133.3	121.8	114.1	102.6	96.5
62.5°	139.4	136.3	134.0	130.2	123.3	118.7	112.6	104.2	96.5	88.1	82.0
65°	115.7	113.4	111.8	108.8	102.6	99.6	94.2	88.1	81.2	74.3	69.7
67.5°	95.7	95.0	94.2	90.4	85.8	84.3	78.9	73.5	68.9	62.8	58.2
70°	79.7	78.9	78.1	75.8	72.0	69.7	65.9	61.3	57.4	52.1	49.0
72.5°	64.3	64.3	63.6	62.0	58.2	56.7	52.9	49.8	46.7	42.9	40.6
75°	55.1	54.4	53.6	51.3	49.0	47.5	45.2	42.1	39.1	36.0	33.7
77.5°	42.9	42.1	42.1	41.4	39.1	38.3	36.0	33.7	32.2	30.6	29.1
80°	32.2	31.4	31.4	30.6	29.1	28.3	27.6	25.3	24.5	22.2	21.4
82.5°	27.6	26.8	26.0	25.3	23.7	23.7	21.4	19.9	18.4	16.9	16.1
85°	18.4	17.6	17.6	17.6	16.9	16.9	15.3	14.6	14.6	13.0	12.3
87.5°	11.5	10.7	10.7	10.7	10.0	10.0	10.0	8.4	8.4	7.7	7.7
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°	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7
2.5°	651.1	641.9	633.4	624.3	610.5	609.7	592.8	581.4	569.9	575.2	559.1
5°	723.1	698.6	676.3	654.9	630.4	617.4	590.6	569.9	551.5	550.0	529.3
7.5°	778.2	735.3	700.1	667.9	631.9	612.0	577.5	548.4	523.9	514.7	488.7
10°	821.1	757.5	706.2	663.3	618.9	590.6	546.9	517.0	486.4	473.4	445.0
12.5°	840.3	758.3	697.8	651.1	594.4	560.7	517.0	478.0	446.6	432.8	407.5
15°	832.6	743.7	680.9	625.8	568.3	526.2	478.7	442.7	420.5	399.1	372.3
17.5°	805.0	716.9	652.6	593.6	535.4	494.8	449.6	413.6	384.5	368.4	342.4
20°	763.7	684.8	618.9	561.4	503.2	465.7	419.0	387.6	358.5	340.1	309.4
22.5°	716.2	638.8	577.5	523.9	468.8	433.5	393.7	360.0	326.3	308.7	275.0
25°	653.4	589.0	532.3	483.3	433.5	399.8	354.6	320.2	282.6	262.0	230.6
27.5°	600.5	540.0	490.2	445.0	392.9	355.4	308.7	271.9	238.2	218.3	193.8
30°	550.7	494.8	438.9	394.5	340.8	300.3	260.4	226.7	199.1	186.1	169.3
32.5°	504.0	439.7	388.3	338.6	288.0	248.9	217.5	193.8	173.9	163.9	149.4
35°	435.8	373.0	327.8	278.8	236.7	212.2	186.9	168.5	152.4	143.2	131.0
37.5°	359.2	307.9	262.0	229.8	201.4	184.6	163.1	147.1	133.3	126.4	116.4
40°	288.8	250.5	220.6	199.1	176.9	160.9	141.7	129.4	118.7	111.8	103.4
42.5°	245.1	218.3	192.3	173.9	154.0	140.9	125.6	113.4	104.2	98.8	91.1
45°	214.5	193.0	170.8	154.0	136.3	124.9	111.1	101.1	93.4	88.1	82.0
47.5°	186.9	167.7	151.7	135.6	120.3	111.1	98.8	89.6	82.0	78.9	72.8
50°	163.9	146.3	131.0	118.0	105.7	97.3	87.3	79.7	74.3	72.0	67.4
52.5°	140.9	126.4	113.4	103.4	92.7	85.8	77.4	71.2	67.4	65.1	62.0
55°	118.7	108.0	97.3	88.9	80.4	75.8	68.9	63.6	60.5	59.7	55.9
57.5°	101.9	91.9	85.0	77.4	71.2	66.6	61.3	58.2	55.1	54.4	52.1
60°	87.3	78.9	72.8	67.4	62.0	59.0	55.1	52.1	49.0	49.0	47.5
62.5°	74.3	67.4	62.8	58.2	53.6	51.3	48.3	46.0	44.4	44.4	43.7
65°	64.3	57.4	53.6	50.6	47.5	46.0	42.9	41.4	39.8	39.8	39.1
67.5°	54.4	49.0	46.0	43.7	40.6	39.1	36.8	36.0	35.2	34.5	33.7
70°	46.0	42.1	39.1	36.8	34.5	33.7	31.4	30.6	29.9	30.6	29.9
72.5°	38.3	35.2	32.9	31.4	29.9	29.1	27.6	26.8	26.0	26.0	26.0
75°	31.4	29.1	27.6	26.0	25.3	24.5	23.7	23.0	22.2	23.0	22.2
77.5°	26.8	24.5	23.0	22.2	21.4	20.7	19.9	19.9	19.1	19.1	19.1
80°	20.7	19.1	18.4	16.9	16.9	16.1	16.1	16.1	15.3	16.1	16.1
82.5°	15.3	13.8	13.0	13.0	12.3	12.3	12.3	12.3	11.5	12.3	12.3
85°	11.5	10.7	10.0	9.2	9.2	9.2	9.2	8.4	8.4	8.4	8.4
87.5°	6.9	6.1	5.4	5.4	4.6	5.4	4.6	4.6	4.6	4.6	4.6
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°	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7	586.7
2.5°	549.2	544.6	544.6	527.0	523.9	534.6	522.4	513.2	518.6	511.7	514.7
5°	514.0	504.8	497.9	480.3	474.1	473.4	461.1	447.3	447.3	443.5	442.7
7.5°	468.8	455.0	444.3	425.9	417.4	414.4	400.6	386.0	384.5	377.6	375.3
10°	421.3	409.0	394.5	376.1	366.9	360.0	343.1	332.4	327.1	320.2	317.1
12.5°	379.9	367.7	353.1	330.9	320.9	317.1	303.3	295.7	294.1	289.5	288.0
15°	348.5	330.9	317.9	300.3	292.6	290.3	277.3	268.8	265.0	258.9	252.8
17.5°	319.4	301.0	289.5	271.9	262.0	252.8	236.7	225.2	215.2	212.2	206.8
20°	288.0	268.1	249.7	230.6	216.8	207.6	192.3	183.8	181.5	176.2	172.3
22.5°	242.0	228.3	208.3	191.5	180.8	176.2	167.0	160.1	157.8	153.2	150.9
25°	206.8	190.0	177.7	167.0	157.8	154.0	145.5	140.2	137.9	134.0	132.5
27.5°	177.7	165.4	156.3	146.3	138.6	135.6	128.7	123.3	121.0	117.2	115.7
30°	154.7	145.5	137.9	127.9	122.6	118.7	113.4	108.0	106.5	104.2	101.9
32.5°	137.1	129.4	121.8	113.4	108.0	104.9	100.3	95.7	94.2	91.9	90.4
35°	121.8	114.1	108.0	98.8	95.7	93.4	88.9	84.3	83.5	81.2	79.7
37.5°	107.2	101.9	95.7	88.9	85.0	83.5	79.7	75.8	75.1	72.8	72.0
40°	95.0	90.4	85.8	78.1	76.6	75.8	72.0	68.2	68.2	66.6	65.9
42.5°	84.3	81.2	76.6	72.8	69.7	68.9	65.9	63.6	63.6	62.0	61.3
45°	75.8	73.5	70.5	66.6	64.3	63.6	61.3	59.0	59.0	58.2	58.2
47.5°	69.7	66.6	64.3	61.3	59.0	59.0	56.7	55.1	55.1	54.4	54.4
50°	63.6	62.0	59.7	57.4	55.1	55.1	52.9	51.3	52.1	52.1	51.3
52.5°	58.2	57.4	55.9	53.6	52.1	52.1	50.6	49.0	49.8	49.0	49.0
55°	53.6	53.6	52.1	50.6	49.0	49.0	47.5	46.7	47.5	48.3	48.3
57.5°	50.6	49.8	49.0	47.5	47.5	47.5	46.7	46.0	46.7	46.7	46.7
60°	46.0	46.7	46.0	45.2	44.4	45.2	44.4	42.9	43.7	43.7	44.4
62.5°	42.1	42.9	42.9	42.9	42.9	42.9	42.9	42.1	43.7	44.4	44.4
65°	38.3	39.1	39.1	39.1	39.1	40.6	39.8	39.1	39.8	40.6	40.6
67.5°	33.7	34.5	34.5	34.5	34.5	35.2	35.2	34.5	35.2	36.0	36.8
70°	29.1	30.6	30.6	30.6	31.4	32.2	32.2	31.4	32.9	33.7	35.2
72.5°	25.3	26.0	26.8	26.8	27.6	29.1	29.1	29.1	29.9	29.9	29.9
75°	22.2	23.0	23.0	23.7	23.7	25.3	25.3	25.3	26.0	26.0	26.0
77.5°	19.1	19.1	19.9	19.9	20.7	21.4	21.4	21.4	22.2	22.2	22.2
80°	15.3	16.1	16.1	16.9	16.9	16.9	16.9	16.9	17.6	17.6	18.4
82.5°	11.5	12.3	12.3	13.0	13.0	13.0	13.0	13.0	13.8	13.8	13.8
85°	8.4	8.4	8.4	9.2	8.4	9.2	9.2	9.2	9.2	9.2	9.2
87.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	3.8	4.6	3.8
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°	586.7	586.7	586.7	586.7
2.5°	513.2	508.6	504.8	505.5
5°	440.4	430.5	435.8	432.0
7.5°	373.8	368.4	365.4	362.3
10°	314.0	304.8	307.1	305.6
12.5°	284.2	281.1	281.1	279.6
15°	251.2	246.6	245.1	244.3
17.5°	199.9	196.9	196.1	195.3
20°	170.8	167.0	165.4	164.7
22.5°	148.6	145.5	144.8	143.2
25°	131.0	127.1	127.1	125.6
27.5°	113.4	111.8	111.1	110.3
30°	101.1	98.8	98.0	97.3
32.5°	91.1	87.3	86.6	85.8
35°	78.1	77.4	75.8	75.8
37.5°	71.2	69.7	69.7	68.9
40°	65.1	63.6	62.8	62.0
42.5°	61.3	59.7	59.0	59.0
45°	57.4	56.7	55.9	55.1
47.5°	54.4	53.6	52.9	52.1
50°	51.3	50.6	50.6	49.0
52.5°	49.8	49.8	49.8	49.0
55°	49.0	49.0	49.8	49.0
57.5°	46.7	46.7	46.0	45.2
60°	45.2	45.2	45.2	43.7
62.5°	44.4	43.7	44.4	43.7
65°	40.6	40.6	41.4	40.6
67.5°	38.3	38.3	38.3	37.5
70°	35.2	35.2	34.5	34.5
72.5°	30.6	30.6	30.6	30.6
75°	26.0	26.0	26.0	26.0
77.5°	22.2	21.4	21.4	21.4
80°	17.6	16.9	16.9	16.9
82.5°	13.8	13.8	13.8	13.0
85°	9.2	9.2	9.2	9.2
87.5°	3.8	3.8	3.8	3.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)