

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: P130084

Luminaire Tested: **HL618TAT - HLM6930 - HL6NFL - 70PS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130084
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 - HLM6930 - 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1074.3 lumens
Efficiency: N/A
Efficacy: 38.9 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

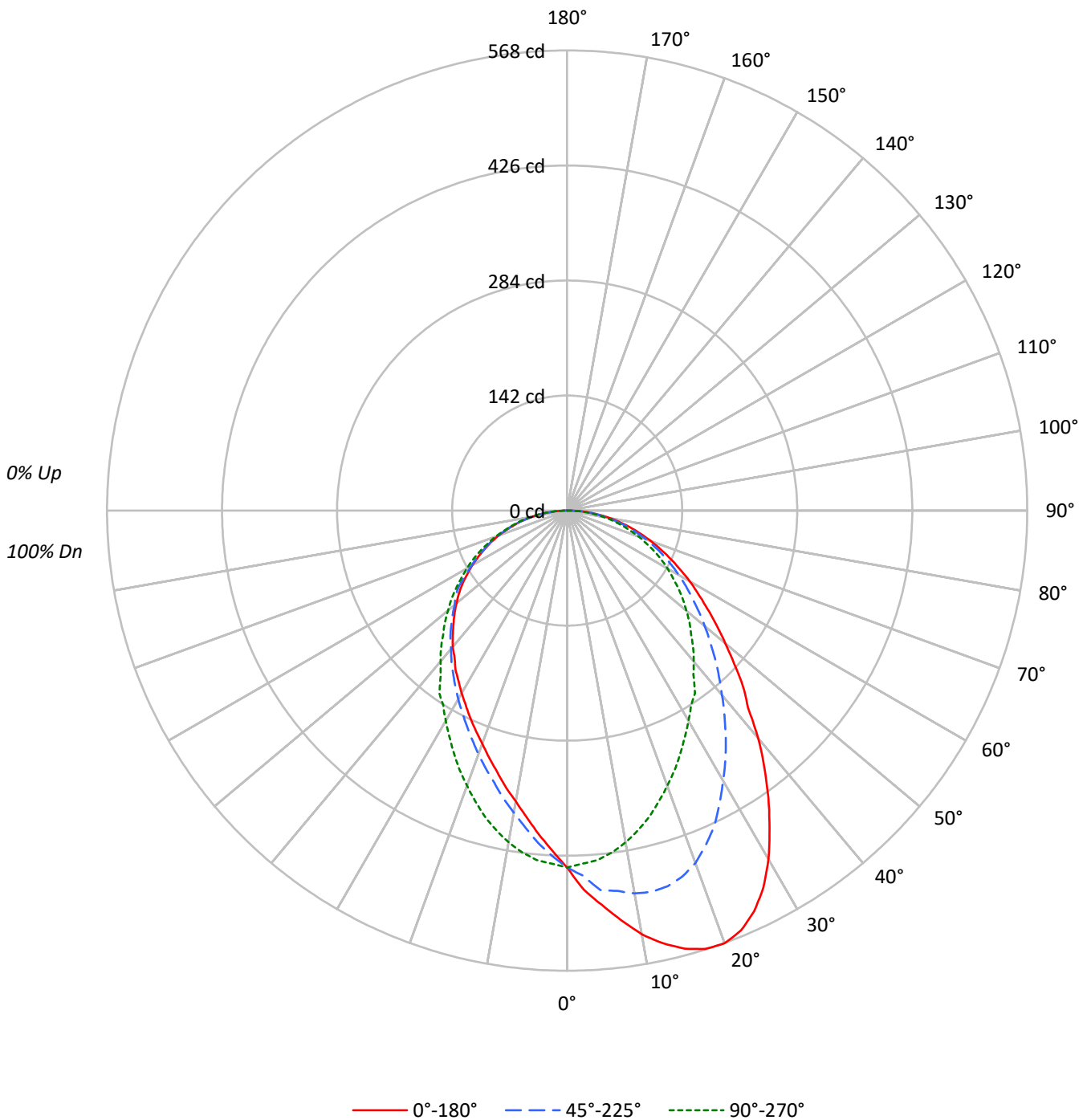
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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		93	91	88		90	88	86	84
2	99	91	84	78	96	89	83	77	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	67	60	55		65	59	54		63	58	53	51
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57	51	47	45
6	71	58	49	43	69	57	49	43	55	48	42		53	47	42		52	46	41	39
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	38	34		44	38	33	31
9	58	44	36	31	56	44	36	31	43	36	31		42	35	30		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°	26294	26294	26294
5°	28599	25355	23482
10°	30750	24080	21116
15°	32300	22579	19257
20°	32922	20938	17729
25°	31996	19373	16560
30°	29699	17909	15549
35°	26603	16908	14745
40°	23377	15495	13998
45°	20482	14439	13232
50°	17978	13541	12561
55°	15933	12629	11904
60°	14299	11683	11070
65°	12668	10653	10077
70°	11076	9472	9039
75°	9391	8025	7654
80°	7308	6294	5855
85°	4699	3800	3444



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.7	3.9
10°-20°	117.4	10.9
20°-30°	168.7	15.7
30°-40°	187.0	17.4
40°-50°	179.9	16.7
50°-60°	157.1	14.6
60°-70°	121.1	11.3
70°-80°	75.6	7.0
80°-90°	25.9	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°	327.8	30.5
0°-40°	514.7	47.9
0°-60°	851.7	79.3
0°-90°	1074.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1074.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	440	440	440	440	440	
5°	488	470	433	412	401	48
15°	560	480	391	348	334	158
25°	546	430	331	293	283	249
35°	433	341	275	245	240	270
45°	307	258	216	203	198	237
55°	211	189	167	163	158	190
65°	141	131	118	113	112	140
75°	81	77	69	67	66	86
85°	28	27	22	21	20	30
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°	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5
2.5°	468.2	457.5	459.7	460.7	459.7	453.3	453.3	455.4	454.3	451.1	454.3
5°	488.4	477.8	479.9	478.8	477.8	471.4	469.3	470.3	469.3	470.3	466.1
7.5°	509.8	499.1	500.2	499.1	495.9	487.4	484.2	483.1	481.0	473.5	472.5
10°	531.1	517.2	517.2	517.2	513.0	501.2	497.0	493.8	489.5	479.9	476.7
12.5°	547.1	534.3	533.2	532.2	525.8	521.5	505.5	500.2	493.8	482.0	476.7
15°	559.9	546.0	546.0	541.8	534.3	518.3	510.8	502.3	493.8	479.9	472.5
17.5°	567.4	554.6	552.4	547.1	537.5	520.4	509.8	499.1	488.4	473.5	465.0
20°	568.4	555.6	563.1	546.0	534.3	515.1	502.3	490.6	478.8	462.9	451.1
22.5°	561.0	548.2	555.6	536.4	524.7	504.4	490.6	476.7	463.9	446.9	436.2
25°	546.0	534.3	529.0	521.5	508.7	488.4	473.5	458.6	445.8	429.8	418.1
27.5°	524.7	513.0	506.6	499.1	487.4	467.1	452.2	437.3	424.5	407.4	396.7
30°	497.0	485.2	479.9	473.5	461.8	441.5	427.7	413.8	402.1	385.0	376.5
32.5°	465.0	457.5	450.1	444.7	435.1	415.9	402.1	389.3	378.6	363.7	355.1
35°	433.0	425.5	409.5	413.8	404.2	388.2	373.3	363.7	354.1	341.3	332.7
37.5°	399.9	392.5	386.1	381.8	366.9	359.4	346.6	338.1	329.5	318.9	311.4
40°	366.9	360.5	355.1	351.9	345.5	331.7	322.1	314.6	306.1	297.5	291.1
42.5°	330.6	329.5	326.3	323.1	317.8	306.1	297.5	291.1	284.8	277.3	272.0
45°	307.1	301.8	298.6	295.4	291.1	280.5	275.2	269.8	264.5	258.1	252.8
47.5°	279.4	275.2	273.0	270.9	266.6	257.0	252.8	248.5	244.2	238.9	235.7
50°	254.9	251.7	248.5	246.4	244.2	236.8	233.6	234.6	226.1	221.8	219.7
52.5°	232.5	229.3	227.2	225.0	222.9	217.6	214.4	211.2	209.0	204.8	202.6
55°	211.2	208.0	205.8	204.8	206.9	198.4	196.2	194.1	192.0	188.8	188.8
57.5°	192.0	188.8	187.7	187.7	185.6	181.3	179.2	178.1	176.0	173.8	172.8
60°	174.9	171.7	169.6	170.6	168.5	164.2	167.4	161.0	161.0	158.9	157.8
62.5°	156.8	154.6	153.6	153.6	151.4	149.3	148.2	147.2	146.1	145.0	144.0
65°	140.8	138.6	137.6	137.6	136.5	133.3	132.2	132.2	131.2	131.2	130.1
67.5°	124.8	122.6	122.6	122.6	121.6	119.4	118.4	118.4	117.3	117.3	116.2
70°	109.8	107.7	106.6	107.7	106.6	105.6	103.4	103.4	103.4	103.4	102.4
72.5°	94.9	93.9	92.8	93.9	92.8	90.7	89.6	91.7	89.6	89.6	88.5
75°	81.1	80.0	78.9	80.0	77.9	77.9	76.8	76.8	75.7	76.8	75.7
77.5°	67.2	66.1	66.1	66.1	65.1	64.0	62.9	64.0	62.9	62.9	62.9
80°	53.3	52.3	52.3	53.3	52.3	51.2	50.1	51.2	50.1	50.1	50.1
82.5°	40.5	39.5	39.5	40.5	39.5	38.4	37.3	38.4	38.4	37.3	38.4
85°	27.7	27.7	27.7	27.7	27.7	25.6	25.6	25.6	25.6	26.7	26.7
87.5°	16.0	16.0	16.0	16.0	16.0	14.9	13.9	14.9	14.9	14.9	14.9
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5
2.5°	457.5	450.1	449.0	444.7	442.6	444.7	444.7	436.2	440.5	434.1	436.2
5°	467.1	456.5	454.3	447.9	443.7	443.7	442.6	433.0	435.1	426.6	426.6
7.5°	472.5	461.8	455.4	447.9	441.5	441.5	436.2	425.5	426.6	417.0	415.9
10°	473.5	460.7	453.3	444.7	436.2	433.0	428.7	415.9	414.9	405.3	404.2
12.5°	472.5	456.5	447.9	437.3	428.7	423.4	417.0	404.2	403.1	392.5	389.3
15°	466.1	449.0	439.4	426.6	415.9	410.6	404.2	391.4	389.3	377.5	375.4
17.5°	456.5	437.3	427.7	414.9	403.1	396.7	390.3	376.5	374.3	372.2	360.5
20°	441.5	423.4	411.7	398.9	388.2	380.7	374.3	361.5	358.3	347.7	345.5
22.5°	425.5	408.5	396.7	383.9	373.3	363.7	358.3	346.6	343.4	332.7	330.6
25°	407.4	390.3	378.6	365.8	356.2	348.7	342.3	330.6	328.5	317.8	315.7
27.5°	387.1	371.1	360.5	348.7	339.1	332.7	326.3	314.6	313.5	303.9	301.8
30°	367.9	351.9	343.4	330.6	321.0	316.7	310.3	299.7	298.6	290.1	287.9
32.5°	346.6	332.7	323.1	313.5	305.0	300.7	295.4	284.8	283.7	276.2	274.1
35°	325.3	312.5	305.0	296.5	287.9	284.8	280.5	275.2	268.8	262.4	261.3
37.5°	306.1	294.3	287.9	279.4	272.0	268.8	264.5	256.0	254.9	249.6	249.6
40°	286.9	276.2	270.9	263.4	257.0	253.8	250.6	243.2	242.1	236.8	236.8
42.5°	267.7	259.2	253.8	252.8	242.1	238.9	236.8	230.4	229.3	224.0	225.0
45°	250.6	242.1	237.8	233.6	227.2	225.0	222.9	216.5	217.6	212.2	213.3
47.5°	233.6	226.1	222.9	218.6	213.3	211.2	210.1	204.8	204.8	199.4	200.5
50°	217.6	211.2	208.0	203.7	199.4	199.4	197.3	192.0	193.0	188.8	188.8
52.5°	202.6	196.2	194.1	189.8	186.6	186.6	185.6	180.2	180.2	177.0	177.0
55°	187.7	182.4	180.2	177.0	173.8	172.8	171.7	167.4	168.5	165.3	165.3
57.5°	171.7	167.4	166.4	163.2	161.0	160.0	158.9	154.6	155.7	153.6	153.6
60°	156.8	153.6	152.5	150.4	147.2	147.2	146.1	142.9	144.0	140.8	141.8
62.5°	142.9	137.6	138.6	139.7	135.4	135.4	134.4	131.2	131.2	129.0	130.1
65°	129.0	124.8	125.8	124.8	122.6	122.6	121.6	118.4	119.4	117.3	117.3
67.5°	115.2	114.1	113.0	112.0	112.0	109.8	108.8	105.6	106.6	104.5	105.6
70°	102.4	100.2	100.2	98.1	96.0	97.0	96.0	93.9	94.9	92.8	93.9
72.5°	89.6	87.5	87.5	85.3	84.3	84.3	83.2	81.1	82.1	81.1	81.1
75°	76.8	74.7	73.6	73.6	72.5	71.5	71.5	69.3	70.4	68.3	69.3
77.5°	62.9	61.9	61.9	60.8	59.7	59.7	58.7	57.6	57.6	56.5	56.5
80°	50.1	50.1	49.1	48.0	48.0	48.0	46.9	45.9	45.9	44.8	44.8
82.5°	38.4	37.3	37.3	37.3	36.3	35.2	35.2	34.1	34.1	34.1	33.1
85°	26.7	25.6	25.6	24.5	24.5	24.5	23.5	22.4	22.4	22.4	22.4
87.5°	14.9	13.9	13.9	13.9	12.8	13.9	12.8	11.7	11.7	11.7	11.7
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5	440.5
2.5°	434.1	435.1	433.0	429.8	429.8	426.6	428.7	426.6	427.7	423.4	421.3
5°	424.5	424.5	420.2	415.9	414.9	411.7	411.7	409.5	409.5	405.3	402.1
7.5°	411.7	411.7	406.3	402.1	399.9	394.6	394.6	392.5	392.5	387.1	385.0
10°	398.9	397.8	390.3	387.1	383.9	378.6	378.6	376.5	375.4	370.1	369.0
12.5°	385.0	382.9	376.5	371.1	367.9	363.7	362.6	359.4	359.4	354.1	351.9
15°	370.1	367.9	361.5	356.2	353.0	347.7	346.6	344.5	343.4	338.1	337.0
17.5°	355.1	351.9	346.6	341.3	338.1	333.8	332.7	329.5	328.5	324.2	323.1
20°	340.2	338.1	331.7	326.3	324.2	319.9	317.8	314.6	314.6	310.3	308.2
22.5°	326.3	323.1	316.7	313.5	310.3	306.1	305.0	302.9	301.8	297.5	296.5
25°	312.5	309.3	303.9	299.7	302.9	293.3	291.1	290.1	289.0	284.8	283.7
27.5°	298.6	296.5	290.1	286.9	283.7	280.5	279.4	277.3	277.3	274.1	273.0
30°	283.7	283.7	277.3	275.2	272.0	268.8	268.8	265.6	265.6	262.4	261.3
32.5°	272.0	270.9	265.6	262.4	260.2	257.0	257.0	254.9	254.9	251.7	250.6
35°	259.2	258.1	252.8	250.6	248.5	245.3	246.4	244.2	243.2	241.0	241.0
37.5°	247.4	246.4	241.0	238.9	236.8	234.6	234.6	233.6	232.5	229.3	229.3
40°	234.6	236.8	229.3	228.2	225.0	222.9	224.0	221.8	221.8	219.7	219.7
42.5°	221.8	221.8	218.6	216.5	214.4	213.3	213.3	211.2	211.2	209.0	209.0
45°	211.2	211.2	206.9	210.1	203.7	202.6	202.6	200.5	200.5	198.4	198.4
47.5°	199.4	199.4	196.2	194.1	193.0	192.0	192.0	189.8	189.8	187.7	187.7
50°	188.8	188.8	185.6	183.4	182.4	181.3	181.3	179.2	179.2	177.0	178.1
52.5°	177.0	176.0	173.8	172.8	171.7	173.8	170.6	169.6	168.5	167.4	167.4
55°	164.2	165.3	163.2	162.1	160.0	163.2	158.9	158.9	157.8	155.7	156.8
57.5°	155.7	153.6	151.4	150.4	149.3	148.2	148.2	147.2	147.2	145.0	146.1
60°	140.8	141.8	139.7	138.6	137.6	136.5	136.5	135.4	135.4	134.4	134.4
62.5°	129.0	130.1	128.0	126.9	125.8	124.8	124.8	123.7	123.7	122.6	122.6
65°	117.3	117.3	116.2	115.2	114.1	113.0	113.0	113.0	112.0	112.0	112.0
67.5°	105.6	105.6	104.5	103.4	102.4	102.4	101.3	100.2	100.2	100.2	100.2
70°	92.8	92.8	92.8	91.7	90.7	90.7	89.6	88.5	88.5	88.5	88.5
72.5°	81.1	81.1	81.1	80.0	78.9	78.9	77.9	76.8	76.8	76.8	76.8
75°	69.3	69.3	68.3	68.3	67.2	67.2	66.1	65.1	65.1	65.1	65.1
77.5°	57.6	57.6	57.6	56.5	55.5	55.5	54.4	53.3	53.3	54.4	53.3
80°	44.8	45.9	45.9	44.8	43.7	43.7	42.7	42.7	41.6	42.7	42.7
82.5°	34.1	34.1	34.1	33.1	33.1	32.0	33.1	30.9	30.9	30.9	30.9
85°	23.5	23.5	23.5	22.4	21.3	21.3	21.3	20.3	19.2	20.3	20.3
87.5°	12.8	11.7	11.7	11.7	11.7	10.7	10.7	10.7	9.6	10.7	10.7
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):

	165°	170°	175°	180°
0°	440.5	440.5	440.5	440.5
2.5°	424.5	424.5	426.6	420.2
5°	404.2	405.3	407.4	401.0
7.5°	386.1	387.1	388.2	381.8
10°	367.9	370.1	371.1	364.7
12.5°	349.8	353.0	355.1	349.8
15°	337.0	337.0	339.1	333.8
17.5°	322.1	323.1	324.2	319.9
20°	308.2	309.3	310.3	306.1
22.5°	295.4	297.5	297.5	294.3
25°	283.7	284.8	285.8	282.6
27.5°	272.0	273.0	274.1	270.9
30°	261.3	264.5	262.4	260.2
32.5°	250.6	251.7	251.7	249.6
35°	245.3	240.0	242.1	240.0
37.5°	228.2	229.3	230.4	228.2
40°	218.6	219.7	219.7	219.7
42.5°	209.0	208.0	210.1	209.0
45°	202.6	198.4	199.4	198.4
47.5°	187.7	187.7	188.8	188.8
50°	177.0	178.1	178.1	178.1
52.5°	166.4	167.4	168.5	168.5
55°	156.8	156.8	157.8	157.8
57.5°	145.0	145.0	146.1	146.1
60°	134.4	134.4	135.4	135.4
62.5°	122.6	122.6	123.7	123.7
65°	110.9	110.9	112.0	112.0
67.5°	100.2	100.2	100.2	101.3
70°	88.5	88.5	88.5	89.6
72.5°	76.8	76.8	77.9	77.9
75°	65.1	65.1	66.1	66.1
77.5°	53.3	53.3	54.4	55.5
80°	42.7	42.7	42.7	42.7
82.5°	30.9	30.9	32.0	33.1
85°	20.3	20.3	20.3	20.3
87.5°	10.7	10.7	10.7	11.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)