

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: P85557

Luminaire Tested: **ML706835-495WW06-H750ICAT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P85557
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML706835-495WW06-H750ICAT
Description: HALO 6 INCH LED DOWNLIGHT WITH 600 Lmn MODULE, DIFFUSE LENS AND SEMI-SPECULAR REFLECTOR WITH PLASTIC SPECULAR KICKER---ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING A 500 WATT, NIST TRACEABLE, OMNI-DIRECTIONAL LAB LUMEN STANDARD IN THE GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET----
Light Source: (1)SMT LED 3500K
CL-L221-C14L2-B
Ballast/Driver: (1)ELECTRONIC DRIVER
RLD011

Summary

Lumens per Lamp: 673 (1 lamp)
Luminaire Lumens: 671.4 lumens
Efficiency: 99.8%
Efficacy: 48.0 lumens/watt
Spacing Criteria (0/90/45): 1.29 / 1.32 / 1.33
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

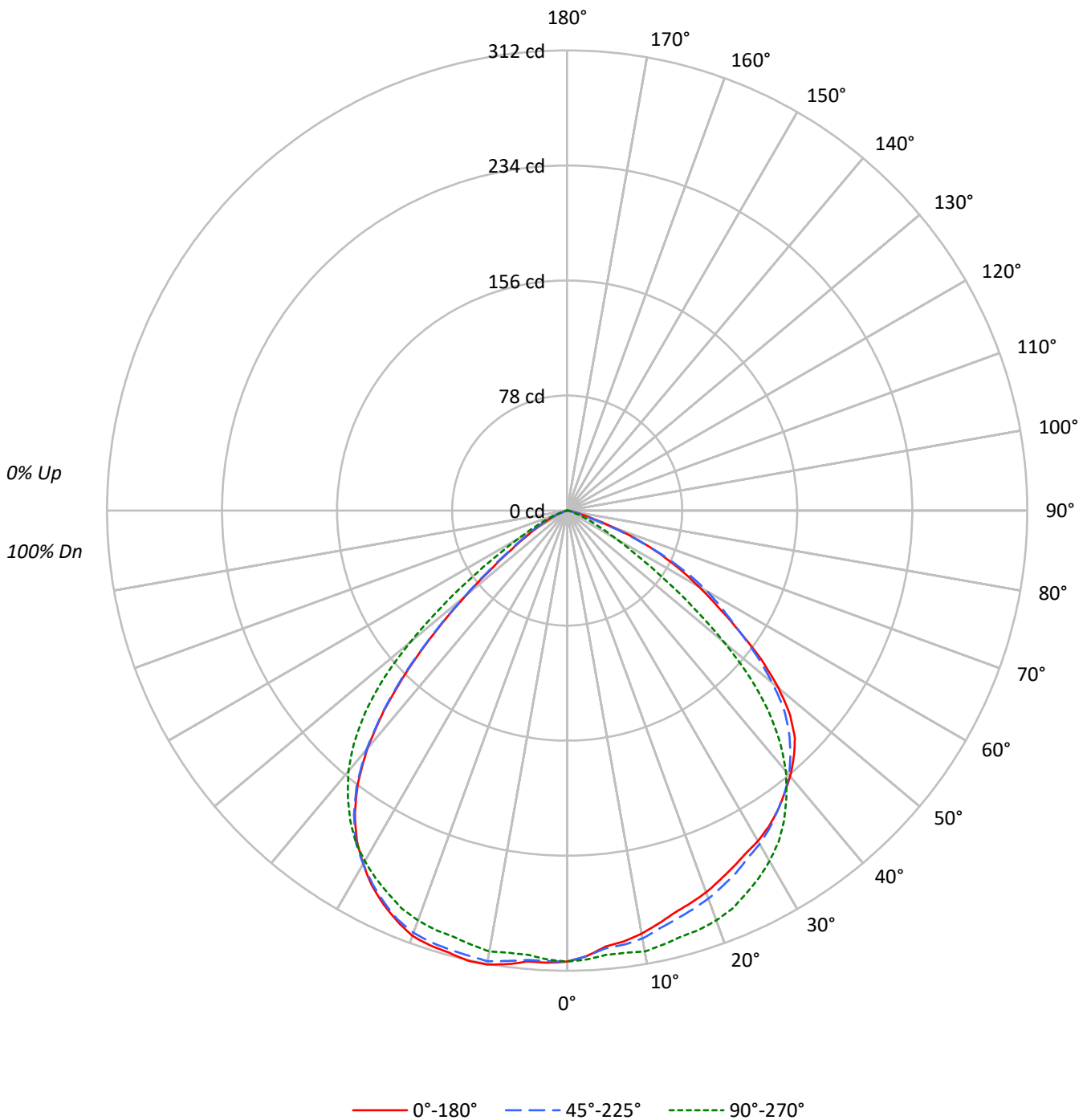
Input Watts (W): 14
Input Voltage (V): NR
Input Current (A_{in}): 0.123
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 6 HR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P85557

CATALOG NUMBER: ML706835-495WW06-H750ICAT

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	111	107	104	101	108	105	102	99	101	99	96	97	95	93	94	92	91	89					89			
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	80	78					78			
3	95	86	80	74	93	85	79	74	82	77	72	79	75	71	77	73	70	68					68			
4	88	78	70	65	86	77	70	64	74	68	63	72	67	62	70	65	62	60					60			
5	82	70	62	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53					53			
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47					47			
7	71	58	50	45	69	58	50	45	56	49	44	55	49	44	53	48	44	42					42			
8	66	53	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38					38			
9	62	49	42	37	60	49	41	36	48	41	36	47	40	36	46	40	36	34					34			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31					31			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	18253	18253	18253
5°	17380	17708	17971
10°	16860	17572	18093
15°	16280	17249	17895
20°	15957	17127	17776
25°	15623	16801	17264
30°	15459	16397	16529
35°	15273	15759	15415
40°	14986	14699	13418
45°	14566	12925	10157
50°	13189	9796	6319
55°	10727	5914	3463
60°	8421	3115	2011
65°	6244	1709	1107
70°	3389	787	454
75°	1170	394	127
80°	466	151	151
85°	373	187	0



TEST NUMBER: P85557

CATALOG NUMBER: ML706835-495WW06-H750ICAT

ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	28.9	4.3	4.3
10°-20°	84.3	12.6	12.5
20°-30°	130.5	19.4	19.4
30°-40°	156.5	23.3	23.3
40°-50°	141.6	21.1	21.0
50°-60°	84.5	12.6	12.6
60°-70°	37.7	5.6	5.6
70°-80°	6.5	1.0	1.0
80°-90°	0.9	0.1	0.1
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	243.6	36.3	36.2
0°-40°	400.2	59.6	59.5
0°-60°	626.3	93.3	93.1
0°-90°	671.4	100.0	99.8
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	671.4	100.0	99.8

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	306	306	306	306	306	
5°	297	298	302	306	307	28
15°	282	287	299	308	310	80
25°	267	271	287	293	295	123
35°	249	249	256	252	251	155
45°	218	213	194	155	152	166
55°	142	142	78	48	46	128
65°	69	72	19	13	12	68
75°	10	8	3	1	1	14
85°	2	1	1	0	0	2
90°	0	0	0	0	0	



TEST NUMBER: P85557

CATALOG NUMBER: ML706835-495WW06-H750ICAT

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8
2.5°	302.4	302.4	302.4	302.4	302.4	302.4	302.4	302.4	302.4	302.4	302.4
5°	296.8	296.8	296.8	296.8	296.8	297.9	297.9	297.9	297.9	297.9	299.0
7.5°	294.6	294.6	294.6	294.6	294.6	294.6	295.7	295.7	295.7	296.8	296.8
10°	291.2	291.2	291.2	291.2	292.3	292.3	292.3	293.4	293.4	294.6	295.7
12.5°	286.7	286.7	286.7	286.7	286.7	287.8	287.8	289.0	290.1	290.1	291.2
15°	282.2	282.2	282.2	282.2	283.4	283.4	284.5	284.5	285.6	286.7	287.8
17.5°	278.9	278.9	278.9	278.9	280.0	280.0	281.1	282.2	282.2	283.4	285.6
20°	275.5	275.5	275.5	275.5	276.6	276.6	277.8	278.9	280.0	280.0	282.2
22.5°	271.0	271.0	271.0	272.2	272.2	272.2	273.3	273.3	274.4	275.5	277.8
25°	266.6	266.6	266.6	266.6	267.7	267.7	267.7	268.8	269.9	271.0	272.2
27.5°	262.1	262.1	262.1	262.1	263.2	263.2	263.2	264.3	265.4	265.4	267.7
30°	258.7	258.7	258.7	258.7	258.7	258.7	259.8	259.8	261.0	261.0	262.1
32.5°	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	255.4	255.4	256.5
35°	248.6	248.6	248.6	247.5	247.5	248.6	248.6	248.6	248.6	248.6	249.8
37.5°	241.9	241.9	241.9	241.9	241.9	241.9	241.9	241.9	241.9	241.9	241.9
40°	235.2	235.2	235.2	235.2	235.2	235.2	234.1	234.1	234.1	234.1	234.1
42.5°	227.4	227.4	227.4	227.4	227.4	226.2	226.2	225.1	225.1	224.0	224.0
45°	218.4	218.4	218.4	217.3	217.3	216.2	216.2	215.0	213.9	212.8	212.8
47.5°	205.0	205.0	205.0	203.8	203.8	202.7	202.7	201.6	200.5	199.4	198.2
50°	187.0	187.0	187.0	187.0	187.0	185.9	184.8	183.7	182.6	181.4	180.3
52.5°	165.8	165.8	165.8	165.8	165.8	165.8	164.6	164.6	163.5	162.4	160.2
55°	142.2	142.2	143.4	144.5	144.5	144.5	144.5	144.5	143.4	142.2	141.1
57.5°	121.0	121.0	122.1	124.3	124.3	125.4	125.4	125.4	125.4	125.4	124.3
60°	103.0	103.0	104.2	106.4	107.5	107.5	108.6	108.6	108.6	109.8	109.8
62.5°	86.2	87.4	87.4	88.5	89.6	90.7	90.7	90.7	90.7	91.8	91.8
65°	69.4	69.4	70.6	70.6	70.6	70.6	70.6	70.6	70.6	71.7	71.7
67.5°	51.5	51.5	51.5	51.5	50.4	50.4	49.3	49.3	49.3	49.3	49.3
70°	33.6	33.6	32.5	32.5	31.4	31.4	30.2	30.2	29.1	29.1	29.1
72.5°	19.0	19.0	19.0	17.9	17.9	16.8	16.8	15.7	15.7	15.7	14.6
75°	10.1	10.1	10.1	10.1	9.0	9.0	9.0	9.0	7.8	7.8	7.8
77.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.5	4.5	4.5	4.5
80°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
82.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
85°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P85557

CATALOG NUMBER: ML706835-495WW06-H750ICAT

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8
2.5°	302.4	302.4	303.5	303.5	303.5	303.5	303.5	304.6	304.6	304.6	304.6
5°	299.0	299.0	300.2	300.2	300.2	301.3	301.3	302.4	302.4	303.5	303.5
7.5°	297.9	297.9	299.0	300.2	300.2	301.3	301.3	302.4	303.5	303.5	304.6
10°	295.7	296.8	297.9	299.0	300.2	301.3	302.4	303.5	303.5	304.6	305.8
12.5°	292.3	293.4	294.6	295.7	297.9	299.0	300.2	301.3	302.4	303.5	304.6
15°	289.0	290.1	292.3	293.4	294.6	296.8	297.9	299.0	301.3	302.4	303.5
17.5°	286.7	287.8	290.1	291.2	293.4	295.7	296.8	297.9	300.2	301.3	302.4
20°	283.4	285.6	286.7	289.0	291.2	292.3	294.6	295.7	297.9	299.0	300.2
22.5°	278.9	281.1	282.2	284.5	286.7	289.0	290.1	292.3	293.4	295.7	295.7
25°	273.3	275.5	277.8	280.0	281.1	283.4	285.6	286.7	287.8	289.0	290.1
27.5°	268.8	269.9	272.2	274.4	275.5	277.8	280.0	281.1	282.2	283.4	284.5
30°	263.2	265.4	266.6	268.8	271.0	272.2	273.3	274.4	275.5	276.6	276.6
32.5°	257.6	258.7	261.0	262.1	263.2	265.4	266.6	266.6	267.7	267.7	267.7
35°	250.9	252.0	252.0	253.1	254.2	255.4	256.5	256.5	256.5	255.4	255.4
37.5°	241.9	243.0	243.0	244.2	244.2	245.3	245.3	244.2	243.0	241.9	239.7
40°	234.1	234.1	234.1	234.1	234.1	233.0	231.8	230.7	228.5	225.1	221.8
42.5°	224.0	222.9	222.9	221.8	220.6	218.4	216.2	213.9	210.6	206.1	200.5
45°	211.7	210.6	209.4	207.2	203.8	200.5	197.1	193.8	189.3	182.6	173.6
47.5°	197.1	194.9	192.6	189.3	183.7	179.2	173.6	169.1	162.4	154.6	144.5
50°	179.2	177.0	172.5	168.0	160.2	152.3	145.6	138.9	132.2	124.3	114.2
52.5°	159.0	156.8	151.2	144.5	134.4	123.2	114.2	107.5	100.8	94.1	85.1
55°	140.0	137.8	132.2	123.2	109.8	96.3	85.1	78.4	72.8	67.2	61.6
57.5°	123.2	121.0	115.4	104.2	89.6	73.9	61.6	54.9	50.4	45.9	43.7
60°	108.6	106.4	100.8	89.6	72.8	56.0	44.8	38.1	34.7	32.5	30.2
62.5°	91.8	89.6	85.1	73.9	58.2	42.6	32.5	26.9	24.6	22.4	22.4
65°	71.7	70.6	66.1	58.2	44.8	31.4	23.5	19.0	16.8	15.7	15.7
67.5°	49.3	48.2	45.9	40.3	31.4	22.4	15.7	12.3	11.2	10.1	10.1
70°	29.1	29.1	28.0	24.6	19.0	13.4	10.1	7.8	6.7	6.7	5.6
72.5°	14.6	14.6	14.6	13.4	10.1	7.8	5.6	4.5	4.5	3.4	3.4
75°	7.8	6.7	6.7	6.7	5.6	4.5	3.4	3.4	2.2	2.2	2.2
77.5°	4.5	4.5	3.4	3.4	3.4	2.2	2.2	2.2	1.1	1.1	1.1
80°	3.4	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1
82.5°	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0
87.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P85557

CATALOG NUMBER: ML706835-495WW06-H750ICAT

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8	305.8
2.5°	304.6	304.6	305.8	305.8	305.8	305.8	305.8	305.8	305.8	306.9	306.9
5°	303.5	304.6	304.6	304.6	305.8	305.8	305.8	305.8	306.9	306.9	306.9
7.5°	305.8	305.8	306.9	306.9	306.9	308.0	308.0	308.0	309.1	309.1	309.1
10°	306.9	306.9	308.0	309.1	309.1	310.2	310.2	311.4	311.4	311.4	311.4
12.5°	305.8	306.9	308.0	308.0	309.1	309.1	310.2	310.2	311.4	311.4	311.4
15°	304.6	305.8	305.8	306.9	308.0	308.0	309.1	309.1	309.1	310.2	310.2
17.5°	303.5	304.6	305.8	305.8	306.9	306.9	308.0	308.0	308.0	309.1	309.1
20°	301.3	302.4	303.5	303.5	304.6	304.6	305.8	305.8	305.8	305.8	305.8
22.5°	296.8	297.9	299.0	299.0	300.2	300.2	300.2	300.2	301.3	301.3	301.3
25°	291.2	292.3	292.3	292.3	293.4	293.4	293.4	293.4	294.6	294.6	294.6
27.5°	284.5	284.5	285.6	285.6	285.6	285.6	285.6	286.7	285.6	286.7	286.7
30°	276.6	276.6	276.6	276.6	276.6	276.6	277.8	277.8	277.8	277.8	276.6
32.5°	266.6	266.6	266.6	266.6	266.6	266.6	266.6	266.6	265.4	266.6	265.4
35°	254.2	253.1	253.1	252.0	252.0	252.0	252.0	252.0	250.9	250.9	250.9
37.5°	237.4	236.3	235.2	234.1	234.1	234.1	233.0	233.0	233.0	233.0	233.0
40°	218.4	216.2	213.9	212.8	212.8	211.7	211.7	211.7	211.7	211.7	210.6
42.5°	194.9	190.4	188.2	185.9	185.9	184.8	184.8	184.8	184.8	184.8	183.7
45°	166.9	160.2	156.8	155.7	154.6	154.6	153.4	153.4	153.4	153.4	153.4
47.5°	135.5	128.8	124.3	122.1	122.1	121.0	121.0	122.1	121.0	121.0	121.0
50°	104.2	97.4	94.1	93.0	91.8	90.7	90.7	90.7	90.7	90.7	89.6
52.5°	77.3	71.7	68.3	67.2	67.2	66.1	66.1	66.1	65.0	65.0	65.0
55°	56.0	52.6	50.4	49.3	49.3	48.2	48.2	48.2	47.0	47.0	47.0
57.5°	40.3	38.1	37.0	37.0	35.8	35.8	35.8	34.7	34.7	34.7	34.7
60°	29.1	29.1	28.0	28.0	26.9	26.9	26.9	26.9	25.8	25.8	25.8
62.5°	21.3	21.3	21.3	20.2	20.2	20.2	19.0	19.0	19.0	19.0	19.0
65°	15.7	14.6	14.6	14.6	13.4	13.4	13.4	13.4	13.4	12.3	12.3
67.5°	9.0	9.0	9.0	9.0	7.8	7.8	7.8	7.8	7.8	7.8	7.8
70°	5.6	5.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
72.5°	3.4	3.4	3.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P85557

CATALOG NUMBER: ML706835-495WW06-H750ICAT

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	305.8	305.8	305.8	305.8
2.5°	306.9	306.9	306.9	306.9
5°	306.9	306.9	306.9	306.9
7.5°	309.1	309.1	309.1	310.2
10°	312.5	312.5	312.5	312.5
12.5°	311.4	311.4	311.4	312.5
15°	310.2	310.2	310.2	310.2
17.5°	309.1	309.1	309.1	309.1
20°	306.9	306.9	306.9	306.9
22.5°	301.3	301.3	301.3	301.3
25°	294.6	294.6	294.6	294.6
27.5°	286.7	286.7	286.7	286.7
30°	277.8	277.8	277.8	276.6
32.5°	265.4	265.4	265.4	265.4
35°	250.9	250.9	250.9	250.9
37.5°	233.0	233.0	233.0	233.0
40°	210.6	210.6	210.6	210.6
42.5°	183.7	183.7	183.7	183.7
45°	153.4	152.3	152.3	152.3
47.5°	121.0	119.8	119.8	119.8
50°	89.6	89.6	89.6	89.6
52.5°	65.0	63.8	63.8	63.8
55°	45.9	45.9	45.9	45.9
57.5°	33.6	33.6	33.6	33.6
60°	25.8	24.6	24.6	24.6
62.5°	17.9	17.9	17.9	17.9
65°	12.3	12.3	12.3	12.3
67.5°	7.8	7.8	7.8	7.8
70°	4.5	4.5	4.5	4.5
72.5°	2.2	2.2	2.2	2.2
75°	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)