

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: P85559

Luminaire Tested: **ML706840-495WW06-H750ICAT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P85559
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML706840-495WW06-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 4000K
CL-L221-C14L2-B
Ballast/Driver: (1)ELECTRONIC DRIVER
RLD011

Summary

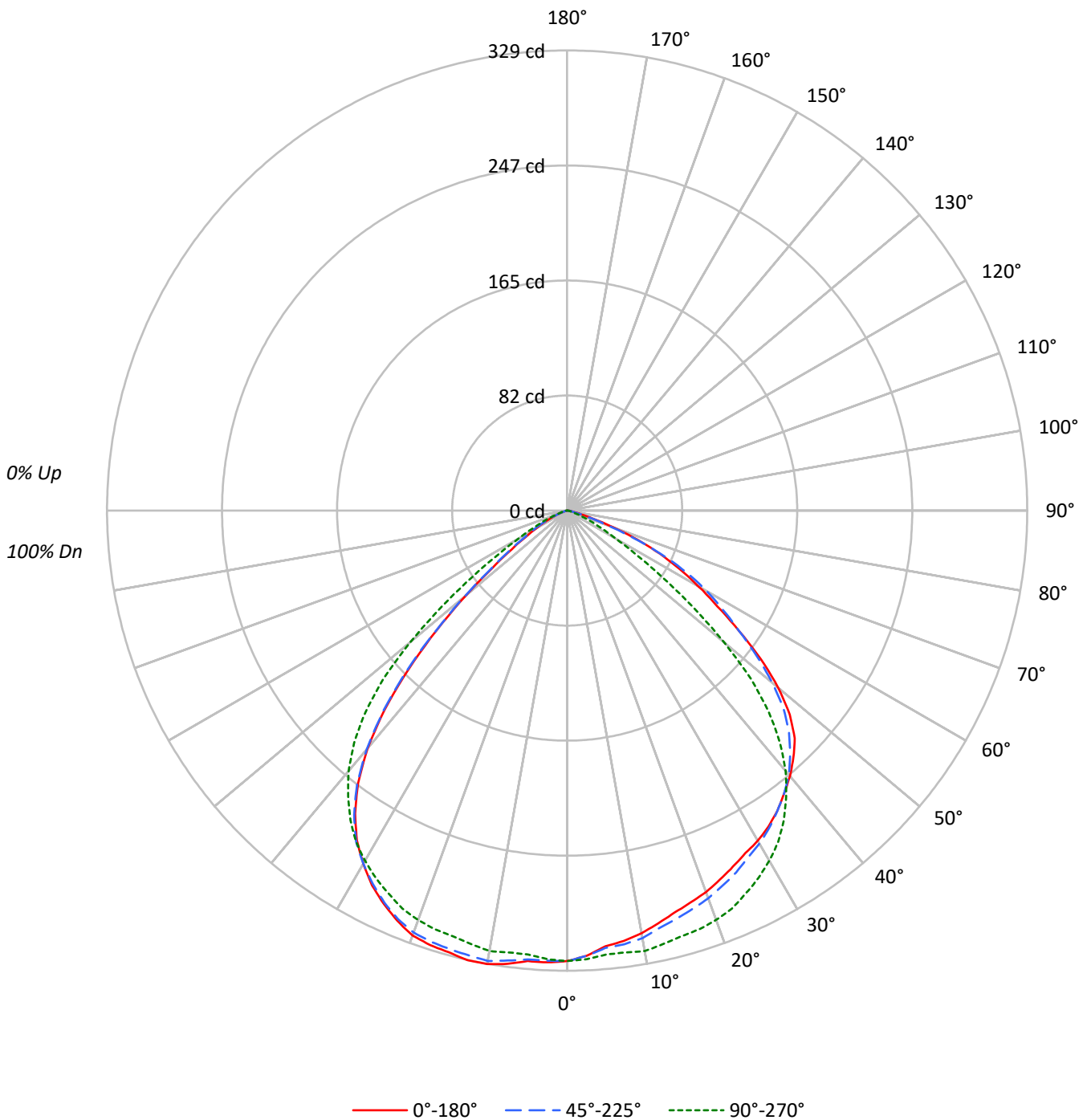
Lumens per Lamp: 705 (1 lamp)
Luminaire Lumens: 707.4 lumens
Efficiency: 100.3%
Efficacy: 50.5 lumens/watt
Spacing Criteria (0/90/45): 1.29 / 1.32 / 1.33
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

Input Watts (W): 14
Input Voltage (V): NR
Input Current (Ain): 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



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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	50	30	10	0		
RCR																										
0	119	119	119	119	117	117	117	117	111	111	111	107	107	107	102	102	102	100					100			
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89					89			
2	104	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78					78			
3	96	87	80	75	93	85	79	74	83	77	73	80	75	71	77	74	70	68					68			
4	89	78	71	65	86	77	70	64	75	68	64	72	67	63	70	66	62	60					60			
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53					53			
6	76	64	56	51	74	63	56	50	62	55	50	60	54	49	59	53	49	47					47			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42					42			
8	66	54	46	41	65	53	46	40	52	45	40	51	45	40	50	44	40	38					38			
9	62	50	42	37	61	49	42	37	48	41	37	47	41	36	46	40	36	34					34			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	43	37	33	31					31			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	19226	19226	19226
5°	18311	18656	18932
10°	17763	18516	19060
15°	17157	18178	18859
20°	16814	18042	18725
25°	16455	17703	18184
30°	16290	17276	17419
35°	16097	16601	16238
40°	15788	15489	14132
45°	15346	13612	10704
50°	13901	10318	6658
55°	11308	6231	3651
60°	8879	3278	2126
65°	6586	1808	1170
70°	3571	837	474
75°	1227	405	139
80°	480	165	165
85°	407	204	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	30.4	4.3	4.3
10°-20°	88.8	12.6	12.6
20°-30°	137.4	19.4	19.5
30°-40°	164.9	23.3	23.4
40°-50°	149.2	21.1	21.2
50°-60°	89.0	12.6	12.6
60°-70°	39.7	5.6	5.6
70°-80°	6.9	1.0	1.0
80°-90°	1.0	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°	256.7	36.3	36.4
0°-40°	421.6	59.6	59.8
0°-60°	659.8	93.3	93.6
0°-90°	707.4	100.0	100.3
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°	707.4	100.0	100.3

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	322	322	322	322	322	
5°	313	314	319	322	323	30
15°	297	302	315	324	327	84
25°	281	286	302	309	310	130
35°	262	262	270	266	264	164
45°	230	224	204	163	160	175
55°	150	150	83	51	48	135
65°	73	76	20	14	13	72
75°	11	8	4	1	1	15
85°	2	1	1	0	0	2
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°	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1
2.5°	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6
5°	312.7	312.7	312.7	312.7	312.7	313.9	313.9	313.9	313.9	313.9	315.1
7.5°	310.3	310.3	310.3	310.3	310.3	310.3	311.5	311.5	311.5	312.7	312.7
10°	306.8	306.8	306.8	306.8	308.0	308.0	308.0	309.2	309.2	310.3	311.5
12.5°	302.1	302.1	302.1	302.1	302.1	303.3	303.3	304.4	305.6	305.6	306.8
15°	297.4	297.4	297.4	297.4	298.5	298.5	299.7	299.7	300.9	302.1	303.3
17.5°	293.8	293.8	293.8	293.8	295.0	295.0	296.2	297.4	297.4	298.5	300.9
20°	290.3	290.3	290.3	290.3	291.5	291.5	292.6	293.8	295.0	295.0	297.4
22.5°	285.6	285.6	285.6	286.7	286.7	286.7	287.9	287.9	289.1	290.3	292.6
25°	280.8	280.8	280.8	280.8	282.0	282.0	282.0	283.2	284.4	285.6	286.7
27.5°	276.1	276.1	276.1	276.1	277.3	277.3	277.3	278.5	279.7	279.7	282.0
30°	272.6	272.6	272.6	272.6	272.6	272.6	273.8	273.8	274.9	274.9	276.1
32.5°	267.9	267.9	267.9	267.9	267.9	267.9	267.9	267.9	269.0	269.0	270.2
35°	262.0	262.0	262.0	260.8	260.8	262.0	262.0	262.0	262.0	262.0	263.1
37.5°	254.9	254.9	254.9	254.9	254.9	254.9	254.9	254.9	254.9	254.9	254.9
40°	247.8	247.8	247.8	247.8	247.8	247.8	246.6	246.6	246.6	246.6	246.6
42.5°	239.5	239.5	239.5	239.5	239.5	238.4	238.4	237.2	237.2	236.0	236.0
45°	230.1	230.1	230.1	228.9	228.9	227.7	227.7	226.6	225.4	224.2	224.2
47.5°	215.9	215.9	215.9	214.8	214.8	213.6	213.6	212.4	211.2	210.0	208.9
50°	197.1	197.1	197.1	197.1	197.1	195.9	194.7	193.5	192.3	191.2	190.0
52.5°	174.6	174.6	174.6	174.6	174.6	174.6	173.5	173.5	172.3	171.1	168.7
55°	149.9	149.9	151.0	152.2	152.2	152.2	152.2	152.2	151.0	149.9	148.7
57.5°	127.4	127.4	128.6	131.0	131.0	132.2	132.2	132.2	132.2	132.2	131.0
60°	108.6	108.6	109.7	112.1	113.3	113.3	114.5	114.5	114.5	115.6	115.6
62.5°	90.9	92.0	92.0	93.2	94.4	95.6	95.6	95.6	95.6	96.8	96.8
65°	73.2	73.2	74.3	74.3	74.3	74.3	74.3	74.3	74.3	75.5	75.5
67.5°	54.3	54.3	54.3	54.3	53.1	53.1	51.9	51.9	51.9	51.9	51.9
70°	35.4	35.4	34.2	34.2	33.0	33.0	31.9	31.9	30.7	30.7	30.7
72.5°	20.1	20.1	20.1	18.9	18.9	17.7	17.7	16.5	16.5	16.5	15.3
75°	10.6	10.6	10.6	10.6	9.4	9.4	9.4	9.4	8.3	8.3	8.3
77.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	4.7	4.7	4.7	4.7
80°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
85°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.2	1.2	1.2
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1
2.5°	318.6	318.6	319.8	319.8	319.8	319.8	319.8	321.0	321.0	321.0	321.0
5°	315.1	315.1	316.2	316.2	316.2	317.4	317.4	318.6	318.6	319.8	319.8
7.5°	313.9	313.9	315.1	316.2	316.2	317.4	317.4	318.6	319.8	319.8	321.0
10°	311.5	312.7	313.9	315.1	316.2	317.4	318.6	319.8	319.8	321.0	322.1
12.5°	308.0	309.2	310.3	311.5	313.9	315.1	316.2	317.4	318.6	319.8	321.0
15°	304.4	305.6	308.0	309.2	310.3	312.7	313.9	315.1	317.4	318.6	319.8
17.5°	302.1	303.3	305.6	306.8	309.2	311.5	312.7	313.9	316.2	317.4	318.6
20°	298.5	300.9	302.1	304.4	306.8	308.0	310.3	311.5	313.9	315.1	316.2
22.5°	293.8	296.2	297.4	299.7	302.1	304.4	305.6	308.0	309.2	311.5	311.5
25°	287.9	290.3	292.6	295.0	296.2	298.5	300.9	302.1	303.3	304.4	305.6
27.5°	283.2	284.4	286.7	289.1	290.3	292.6	295.0	296.2	297.4	298.5	299.7
30°	277.3	279.7	280.8	283.2	285.6	286.7	287.9	289.1	290.3	291.5	291.5
32.5°	271.4	272.6	274.9	276.1	277.3	279.7	280.8	280.8	282.0	282.0	282.0
35°	264.3	265.5	265.5	266.7	267.9	269.0	270.2	270.2	270.2	269.0	269.0
37.5°	254.9	256.1	256.1	257.2	257.2	258.4	258.4	257.2	256.1	254.9	252.5
40°	246.6	246.6	246.6	246.6	246.6	245.4	244.3	243.1	240.7	237.2	233.6
42.5°	236.0	234.8	234.8	233.6	232.5	230.1	227.7	225.4	221.8	217.1	211.2
45°	223.0	221.8	220.7	218.3	214.8	211.2	207.7	204.1	199.4	192.3	182.9
47.5°	207.7	205.3	203.0	199.4	193.5	188.8	182.9	178.2	171.1	162.8	152.2
50°	188.8	186.4	181.7	177.0	168.7	160.5	153.4	146.3	139.2	131.0	120.4
52.5°	167.6	165.2	159.3	152.2	141.6	129.8	120.4	113.3	106.2	99.1	89.7
55°	147.5	145.1	139.2	129.8	115.6	101.5	89.7	82.6	76.7	70.8	64.9
57.5°	129.8	127.4	121.5	109.7	94.4	77.9	64.9	57.8	53.1	48.4	46.0
60°	114.5	112.1	106.2	94.4	76.7	59.0	47.2	40.1	36.6	34.2	31.9
62.5°	96.8	94.4	89.7	77.9	61.4	44.8	34.2	28.3	26.0	23.6	23.6
65°	75.5	74.3	69.6	61.4	47.2	33.0	24.8	20.1	17.7	16.5	16.5
67.5°	51.9	50.7	48.4	42.5	33.0	23.6	16.5	13.0	11.8	10.6	10.6
70°	30.7	30.7	29.5	26.0	20.1	14.2	10.6	8.3	7.1	7.1	5.9
72.5°	15.3	15.3	15.3	14.2	10.6	8.3	5.9	4.7	4.7	3.5	3.5
75°	8.3	7.1	7.1	7.1	5.9	4.7	3.5	3.5	2.4	2.4	2.4
77.5°	4.7	4.7	3.5	3.5	3.5	2.4	2.4	2.4	1.2	1.2	1.2
80°	3.5	2.4	2.4	2.4	2.4	2.4	1.2	1.2	1.2	1.2	1.2
82.5°	2.4	2.4	2.4	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2
85°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0
87.5°	1.2	1.2	1.2	1.2	1.2	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



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1	322.1
2.5°	321.0	321.0	322.1	322.1	322.1	322.1	322.1	322.1	322.1	323.3	323.3
5°	319.8	321.0	321.0	321.0	322.1	322.1	322.1	322.1	323.3	323.3	323.3
7.5°	322.1	322.1	323.3	323.3	323.3	324.5	324.5	324.5	325.7	325.7	325.7
10°	323.3	323.3	324.5	325.7	325.7	326.9	326.9	328.0	328.0	328.0	328.0
12.5°	322.1	323.3	324.5	324.5	325.7	325.7	326.9	326.9	328.0	328.0	328.0
15°	321.0	322.1	322.1	323.3	324.5	324.5	325.7	325.7	325.7	326.9	326.9
17.5°	319.8	321.0	322.1	322.1	323.3	323.3	324.5	324.5	324.5	325.7	325.7
20°	317.4	318.6	319.8	319.8	321.0	321.0	322.1	322.1	322.1	322.1	322.1
22.5°	312.7	313.9	315.1	315.1	316.2	316.2	316.2	316.2	317.4	317.4	317.4
25°	306.8	308.0	308.0	308.0	309.2	309.2	309.2	309.2	310.3	310.3	310.3
27.5°	299.7	299.7	300.9	300.9	300.9	300.9	300.9	302.1	300.9	302.1	302.1
30°	291.5	291.5	291.5	291.5	291.5	291.5	292.6	292.6	292.6	292.6	291.5
32.5°	280.8	280.8	280.8	280.8	280.8	280.8	280.8	280.8	279.7	280.8	279.7
35°	267.9	266.7	266.7	265.5	265.5	265.5	265.5	265.5	264.3	264.3	264.3
37.5°	250.2	249.0	247.8	246.6	246.6	246.6	245.4	245.4	245.4	245.4	245.4
40°	230.1	227.7	225.4	224.2	224.2	223.0	223.0	223.0	223.0	223.0	221.8
42.5°	205.3	200.6	198.2	195.9	195.9	194.7	194.7	194.7	194.7	194.7	193.5
45°	175.8	168.7	165.2	164.0	162.8	162.8	161.7	161.7	161.7	161.7	161.7
47.5°	142.8	135.7	131.0	128.6	128.6	127.4	127.4	128.6	127.4	127.4	127.4
50°	109.7	102.7	99.1	97.9	96.8	95.6	95.6	95.6	95.6	95.6	94.4
52.5°	81.4	75.5	72.0	70.8	70.8	69.6	69.6	69.6	68.4	68.4	68.4
55°	59.0	55.5	53.1	51.9	51.9	50.7	50.7	50.7	49.6	49.6	49.6
57.5°	42.5	40.1	38.9	38.9	37.8	37.8	37.8	36.6	36.6	36.6	36.6
60°	30.7	30.7	29.5	29.5	28.3	28.3	28.3	28.3	27.1	27.1	27.1
62.5°	22.4	22.4	22.4	21.2	21.2	21.2	20.1	20.1	20.1	20.1	20.1
65°	16.5	15.3	15.3	15.3	14.2	14.2	14.2	14.2	14.2	13.0	13.0
67.5°	9.4	9.4	9.4	9.4	8.3	8.3	8.3	8.3	8.3	8.3	8.3
70°	5.9	5.9	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
72.5°	3.5	3.5	3.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
75°	2.4	2.4	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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: P85559

CATALOG NUMBER: ML706840-495WW06-H750ICAT

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	322.1	322.1	322.1	322.1
2.5°	323.3	323.3	323.3	323.3
5°	323.3	323.3	323.3	323.3
7.5°	325.7	325.7	325.7	326.9
10°	329.2	329.2	329.2	329.2
12.5°	328.0	328.0	328.0	329.2
15°	326.9	326.9	326.9	326.9
17.5°	325.7	325.7	325.7	325.7
20°	323.3	323.3	323.3	323.3
22.5°	317.4	317.4	317.4	317.4
25°	310.3	310.3	310.3	310.3
27.5°	302.1	302.1	302.1	302.1
30°	292.6	292.6	292.6	291.5
32.5°	279.7	279.7	279.7	279.7
35°	264.3	264.3	264.3	264.3
37.5°	245.4	245.4	245.4	245.4
40°	221.8	221.8	221.8	221.8
42.5°	193.5	193.5	193.5	193.5
45°	161.7	160.5	160.5	160.5
47.5°	127.4	126.3	126.3	126.3
50°	94.4	94.4	94.4	94.4
52.5°	68.4	67.3	67.3	67.3
55°	48.4	48.4	48.4	48.4
57.5°	35.4	35.4	35.4	35.4
60°	27.1	26.0	26.0	26.0
62.5°	18.9	18.9	18.9	18.9
65°	13.0	13.0	13.0	13.0
67.5°	8.3	8.3	8.3	8.3
70°	4.7	4.7	4.7	4.7
72.5°	2.4	2.4	2.4	2.4
75°	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2
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)