

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: P85550

Luminaire Tested: **ML709835ICAT120D-495WW06-H750ICAT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P85550
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML709835ICAT120D-495WW06-H750ICAT
Description: HALO 6 INCH LED DOWNLIGHT WITH 900 Lmn MODULE, DIFFUSE LENS AND SEMISPECULAR 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
(1)CL-L241-C26L2-A
Ballast/Driver: (1)ELECTRONIC DRIVER
(1)RHPS311BL-CLO

Summary

Lumens per Lamp: 777 (1 lamp)
Luminaire Lumens: 777.2 lumens
Efficiency: 100.0%
Efficacy: 55.5 lumens/watt
Spacing Criteria (0/90/45): 1.29 / 1.31 / 1.33
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

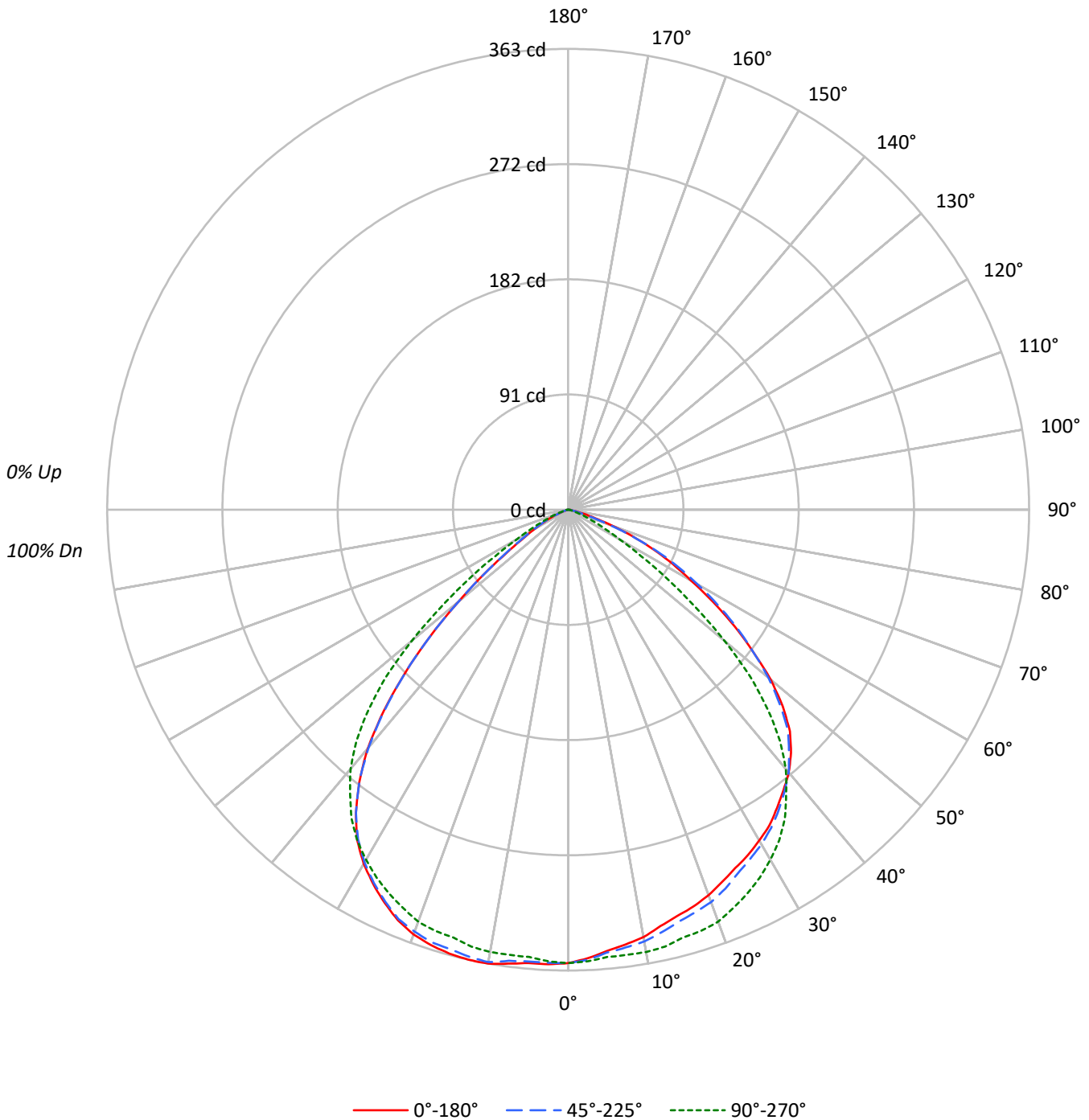
Input Watts (W): 14.01
Input Voltage (V): NR
Input Current (A_{in}): 0.12081
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	108	104	101	109	105	102	100	101	99	97	98	96	94	94	92	91	89					89			
2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	83	80	78					78			
3	96	87	80	75	93	85	79	74	82	77	73	80	75	71	77	74	70	68					68			
4	88	78	71	65	86	77	70	64	74	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	50	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	41	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	35					35			
10	58	46	38	34	57	45	38	33	44	38	33	43	37	33	43	37	33	31					31			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	21322	21322	21322
5°	20437	20712	20987
10°	19796	20479	21023
15°	19118	20133	20878
20°	18714	20006	20619
25°	18248	19555	20035
30°	17975	19027	19242
35°	17614	18265	17903
40°	17216	16993	15648
45°	16460	14813	12072
50°	14670	11355	7956
55°	12055	7272	4436
60°	9124	3842	2502
65°	6658	2006	1377
70°	3672	948	474
75°	1494	405	139
80°	480	165	165
85°	407	204	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	33.8	4.3	4.3
10°-20°	98.4	12.7	12.7
20°-30°	151.9	19.5	19.5
30°-40°	181.2	23.3	23.3
40°-50°	163.8	21.1	21.1
50°-60°	98.1	12.6	12.6
60°-70°	41.4	5.3	5.3
70°-80°	7.5	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°	284.1	36.6	36.6
0°-40°	465.3	59.9	59.9
0°-60°	727.2	93.6	93.6
0°-90°	777.2	100.0	100.0
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°	777.2	100.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	357	357	357	357	357	
5°	349	350	354	357	358	33
15°	331	336	349	358	362	94
25°	311	316	334	341	342	144
35°	287	289	297	291	291	180
45°	247	244	222	181	181	188
55°	160	162	96	60	59	142
65°	74	76	22	16	15	73
75°	13	9	4	1	1	16
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°	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2
2.5°	353.7	353.7	353.7	353.7	353.7	353.7	353.7	353.7	354.8	354.8	354.8
5°	349.0	347.8	347.8	349.0	349.0	349.0	349.0	349.0	349.0	350.2	350.2
7.5°	345.4	345.4	345.4	345.4	345.4	346.6	346.6	346.6	347.8	347.8	347.8
10°	341.9	341.9	341.9	341.9	343.1	343.1	343.1	344.3	344.3	345.4	346.6
12.5°	336.0	336.0	336.0	336.0	337.2	337.2	338.4	338.4	339.6	340.8	341.9
15°	331.4	331.4	331.4	331.4	331.4	332.5	333.7	333.7	334.9	336.0	337.2
17.5°	327.8	327.8	327.8	327.8	327.8	329.0	330.2	330.2	331.4	332.5	333.7
20°	323.1	323.1	323.1	323.1	324.3	324.3	325.5	326.7	327.8	329.0	330.2
22.5°	317.2	317.2	317.2	318.4	318.4	319.6	319.6	320.8	322.0	323.1	324.3
25°	311.4	311.4	311.4	311.4	312.6	312.6	313.7	313.7	314.9	316.1	318.4
27.5°	306.7	305.5	305.5	306.7	306.7	306.7	307.8	307.8	309.0	310.2	311.4
30°	300.8	300.8	300.8	300.8	302.0	302.0	302.0	303.2	303.2	304.3	305.5
32.5°	294.9	294.9	294.9	294.9	294.9	294.9	296.1	296.1	296.1	297.3	298.4
35°	286.7	286.7	286.7	286.7	287.9	287.9	287.9	287.9	287.9	289.0	289.0
37.5°	278.5	278.5	278.5	278.5	278.5	278.5	278.5	278.5	278.5	279.7	279.7
40°	270.2	270.2	270.2	270.2	270.2	270.2	270.2	269.1	269.1	270.2	270.2
42.5°	259.7	259.7	259.7	259.7	259.7	258.5	258.5	258.5	258.5	257.3	257.3
45°	246.8	246.8	246.8	245.6	245.6	245.6	245.6	244.4	244.4	244.4	243.2
47.5°	229.1	229.1	229.1	229.1	229.1	228.0	228.0	228.0	226.8	225.6	225.6
50°	208.0	208.0	208.0	208.0	208.0	208.0	206.8	206.8	206.8	205.6	204.5
52.5°	183.3	183.3	184.5	184.5	184.5	184.5	184.5	184.5	184.5	183.3	183.3
55°	159.8	159.8	159.8	161.0	161.0	162.2	162.2	162.2	162.2	162.2	162.2
57.5°	135.1	135.1	136.3	137.5	137.5	138.6	138.6	139.8	139.8	139.8	139.8
60°	111.6	112.8	112.8	114.0	115.2	116.3	116.3	117.5	117.5	117.5	117.5
62.5°	92.8	92.8	94.0	94.0	95.2	95.2	96.4	96.4	96.4	97.5	97.5
65°	74.0	74.0	74.0	75.2	75.2	75.2	75.2	75.2	75.2	76.4	76.4
67.5°	55.2	55.2	55.2	55.2	55.2	54.0	54.0	54.0	54.0	54.0	54.0
70°	36.4	36.4	36.4	36.4	35.2	35.2	34.1	34.1	32.9	32.9	32.9
72.5°	22.3	22.3	21.2	21.2	21.2	20.0	20.0	18.8	17.6	17.6	17.6
75°	12.9	12.9	11.8	11.8	11.8	10.6	10.6	10.6	9.4	9.4	9.4
77.5°	7.0	7.0	7.0	7.0	5.9	5.9	5.9	5.9	5.9	5.9	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	2.4	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°	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2
2.5°	354.8	354.8	354.8	354.8	356.0	356.0	356.0	356.0	356.0	356.0	357.2
5°	350.2	351.3	351.3	351.3	352.5	352.5	352.5	353.7	353.7	354.8	354.8
7.5°	349.0	349.0	350.2	351.3	351.3	352.5	353.7	353.7	354.8	354.8	356.0
10°	347.8	347.8	349.0	350.2	351.3	352.5	352.5	353.7	354.8	356.0	357.2
12.5°	343.1	344.3	345.4	346.6	347.8	349.0	350.2	352.5	353.7	353.7	356.0
15°	338.4	339.6	341.9	343.1	344.3	346.6	347.8	349.0	351.3	352.5	353.7
17.5°	336.0	337.2	338.4	340.8	343.1	344.3	346.6	347.8	349.0	351.3	352.5
20°	332.5	333.7	336.0	337.2	339.6	341.9	343.1	345.4	346.6	347.8	350.2
22.5°	326.7	327.8	330.2	332.5	334.9	336.0	338.4	339.6	341.9	343.1	344.3
25°	319.6	322.0	324.3	326.7	327.8	330.2	332.5	333.7	334.9	336.0	337.2
27.5°	313.7	314.9	317.2	319.6	322.0	323.1	325.5	326.7	327.8	329.0	330.2
30°	306.7	309.0	310.2	312.6	314.9	316.1	317.2	318.4	319.6	320.8	320.8
32.5°	299.6	300.8	303.2	304.3	305.5	307.8	307.8	309.0	310.2	310.2	310.2
35°	290.2	291.4	292.6	293.8	294.9	296.1	296.1	297.3	297.3	296.1	294.9
37.5°	280.8	280.8	282.0	283.2	283.2	283.2	283.2	282.0	280.8	279.7	277.3
40°	270.2	270.2	270.2	270.2	270.2	269.1	267.9	266.7	263.2	260.8	256.2
42.5°	257.3	257.3	256.2	255.0	253.8	251.4	249.1	246.8	242.0	237.4	231.5
45°	243.2	242.0	239.7	237.4	235.0	231.5	226.8	222.1	216.2	209.2	202.1
47.5°	224.4	223.2	219.7	216.2	210.3	205.6	199.8	193.9	186.8	178.6	170.4
50°	203.3	200.9	197.4	191.5	183.3	176.2	168.0	161.0	152.8	144.5	136.3
52.5°	182.1	178.6	172.7	165.7	155.1	145.7	135.1	126.9	119.8	111.6	103.4
55°	161.0	156.3	150.4	141.0	129.2	116.3	104.6	96.4	89.3	82.2	75.2
57.5°	138.6	135.1	128.1	117.5	103.4	89.3	77.6	68.2	62.3	57.6	52.9
60°	117.5	114.0	106.9	95.2	82.2	68.2	55.2	47.0	42.3	38.8	36.4
62.5°	96.4	94.0	87.0	77.6	64.6	50.5	40.0	32.9	28.2	27.0	25.8
65°	76.4	74.0	68.2	59.9	48.2	37.6	28.2	22.3	20.0	18.8	17.6
67.5°	54.0	52.9	49.4	42.3	34.1	25.8	18.8	15.3	12.9	11.8	11.8
70°	32.9	32.9	30.6	27.0	21.2	16.4	11.8	9.4	8.2	7.0	7.0
72.5°	17.6	17.6	16.4	15.3	11.8	9.4	7.0	4.7	4.7	4.7	3.5
75°	8.2	8.2	8.2	7.0	5.9	4.7	3.5	3.5	2.4	2.4	2.4
77.5°	4.7	4.7	4.7	3.5	3.5	3.5	2.4	2.4	2.4	1.2	1.2
80°	3.5	3.5	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	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



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2
2.5°	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	358.4	358.4	358.4
5°	356.0	356.0	356.0	356.0	357.2	357.2	357.2	357.2	357.2	358.4	358.4
7.5°	357.2	357.2	357.2	358.4	358.4	358.4	359.6	359.6	359.6	360.7	360.7
10°	358.4	358.4	359.6	360.7	360.7	361.9	361.9	361.9	363.1	363.1	363.1
12.5°	357.2	357.2	358.4	359.6	359.6	360.7	360.7	361.9	361.9	361.9	363.1
15°	354.8	356.0	357.2	357.2	358.4	358.4	359.6	359.6	360.7	360.7	360.7
17.5°	353.7	353.7	354.8	356.0	356.0	357.2	357.2	358.4	358.4	359.6	359.6
20°	351.3	351.3	352.5	352.5	353.7	353.7	354.8	354.8	354.8	356.0	356.0
22.5°	345.4	346.6	346.6	347.8	347.8	349.0	349.0	349.0	349.0	350.2	350.2
25°	338.4	339.6	339.6	339.6	340.8	340.8	340.8	340.8	340.8	341.9	341.9
27.5°	330.2	330.2	330.2	331.4	331.4	331.4	331.4	331.4	331.4	332.5	332.5
30°	320.8	320.8	320.8	320.8	320.8	320.8	320.8	320.8	320.8	322.0	322.0
32.5°	309.0	309.0	309.0	307.8	307.8	307.8	307.8	307.8	307.8	307.8	307.8
35°	293.8	292.6	292.6	291.4	291.4	291.4	291.4	291.4	291.4	291.4	291.4
37.5°	275.0	272.6	271.4	270.2	270.2	270.2	270.2	270.2	270.2	270.2	270.2
40°	252.6	249.1	246.8	245.6	244.4	244.4	244.4	244.4	244.4	244.4	244.4
42.5°	225.6	220.9	217.4	215.0	215.0	213.8	215.0	215.0	215.0	215.0	215.0
45°	195.0	188.0	184.5	182.1	181.0	181.0	181.0	181.0	181.0	181.0	181.0
47.5°	162.2	155.1	150.4	148.0	146.9	146.9	146.9	146.9	146.9	146.9	146.9
50°	128.1	122.2	117.5	115.2	114.0	112.8	112.8	112.8	112.8	114.0	112.8
52.5°	96.4	90.5	87.0	84.6	84.6	83.4	83.4	83.4	83.4	83.4	83.4
55°	69.3	65.8	62.3	61.1	61.1	59.9	59.9	59.9	59.9	59.9	58.8
57.5°	49.4	47.0	44.6	44.6	43.5	43.5	43.5	42.3	42.3	42.3	42.3
60°	35.2	34.1	32.9	32.9	32.9	31.7	31.7	31.7	31.7	30.6	30.6
62.5°	25.8	24.7	24.7	23.5	23.5	23.5	23.5	22.3	22.3	22.3	22.3
65°	17.6	17.6	16.4	16.4	16.4	16.4	15.3	15.3	15.3	15.3	15.3
67.5°	10.6	10.6	10.6	10.6	9.4	9.4	9.4	9.4	9.4	9.4	9.4
70°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	4.7	4.7	4.7	4.7
72.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.4	2.4	2.4
75°	2.4	2.4	2.4	2.4	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: P85550

CATALOG NUMBER: ML709835ICAT120D-495WW06-H750ICAT

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	357.2	357.2	357.2	357.2
2.5°	358.4	358.4	358.4	358.4
5°	358.4	358.4	358.4	358.4
7.5°	360.7	360.7	360.7	360.7
10°	363.1	363.1	363.1	363.1
12.5°	363.1	363.1	363.1	363.1
15°	360.7	360.7	360.7	361.9
17.5°	359.6	359.6	359.6	359.6
20°	356.0	356.0	356.0	356.0
22.5°	350.2	350.2	350.2	350.2
25°	341.9	341.9	341.9	341.9
27.5°	332.5	332.5	332.5	332.5
30°	322.0	322.0	322.0	322.0
32.5°	307.8	307.8	307.8	309.0
35°	291.4	291.4	291.4	291.4
37.5°	270.2	270.2	270.2	270.2
40°	245.6	245.6	245.6	245.6
42.5°	215.0	211.5	215.0	215.0
45°	181.0	181.0	181.0	181.0
47.5°	146.9	146.9	146.9	146.9
50°	112.8	112.8	112.8	112.8
52.5°	83.4	83.4	83.4	83.4
55°	58.8	58.8	58.8	58.8
57.5°	42.3	42.3	41.1	41.1
60°	30.6	30.6	30.6	30.6
62.5°	22.3	22.3	22.3	22.3
65°	15.3	15.3	15.3	15.3
67.5°	9.4	9.4	9.4	9.4
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)