

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: P85566

Luminaire Tested: **ML712830TUNVD010-495WW06-H750ICAT**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P85566  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: ML712830TUNVD010-495WW06-H750ICAT  
Description: HALO 6 INCH LED DOWNLIGHT WITH 1200 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 3000K  
CL-L241-C26L2-A  
Ballast/Driver: (1)ELECTRONIC DRIVER  
RHPS314D-CLO

**Summary**

Lumens per Lamp: 1290 (1 lamp)  
Luminaire Lumens: 1296.8 lumens  
Efficiency: 100.5%  
Efficacy: 53.4 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.31 / 1.32  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct

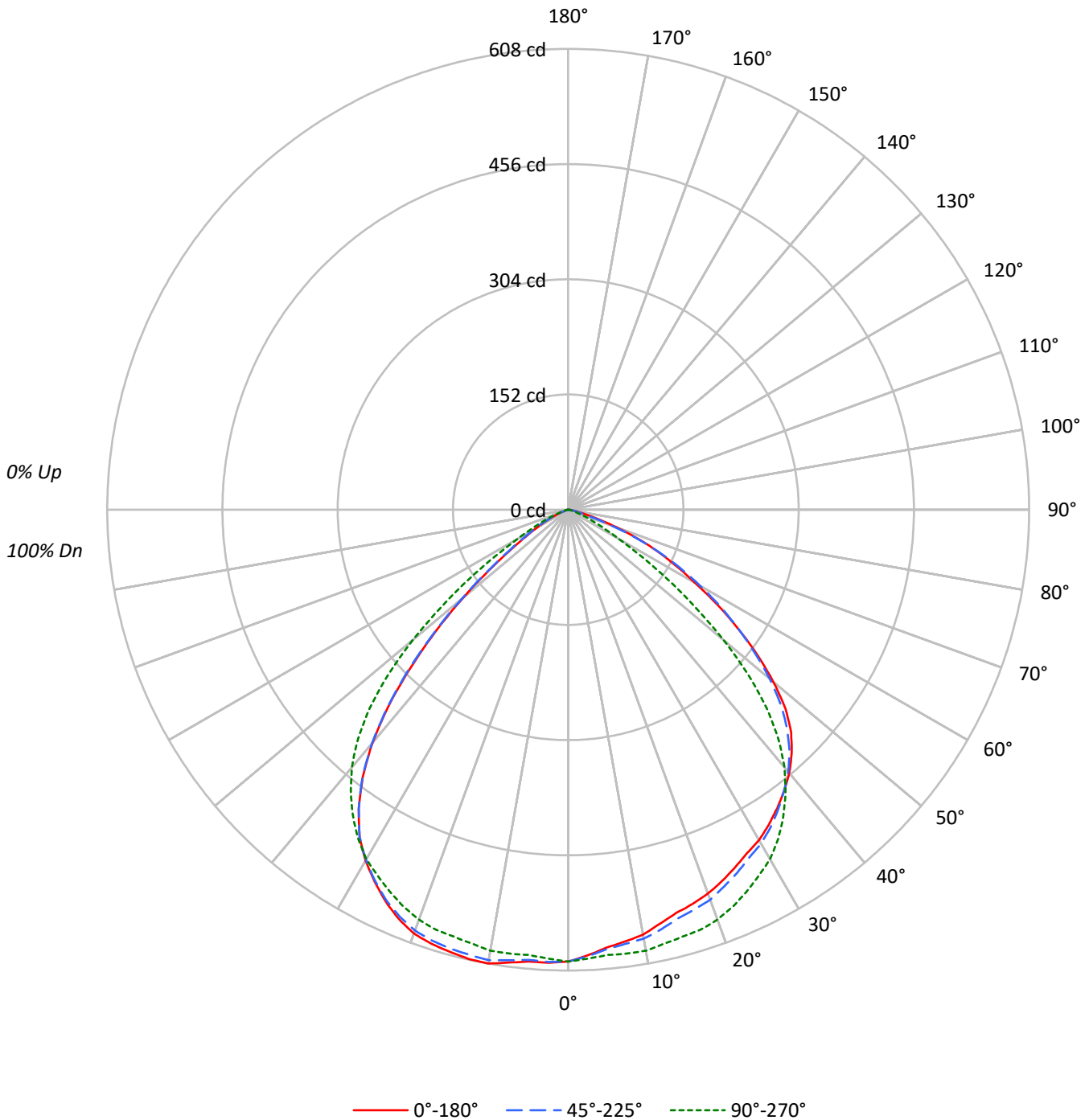
Input Watts (W): 24.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 0.2041  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: 6 HR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: ML712830TUNVD010-495WW06-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	0
RCR																		
0	120	120	120	120	117	117	117	117	112	112	112	107	107	107	103	103	103	101
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89
2	104	97	91	87	101	95	90	86	92	88	84	89	85	82	86	83	80	78
3	96	87	80	75	94	86	79	74	83	77	73	80	76	72	78	74	71	69
4	89	78	71	65	87	77	70	65	75	69	64	73	67	63	71	66	62	60
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53
6	76	64	56	51	75	64	56	51	62	55	50	60	54	50	59	53	49	47
7	71	59	51	45	70	58	51	45	57	50	45	55	49	45	54	48	44	42
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38
9	62	50	42	37	61	49	42	37	48	41	37	47	41	37	46	40	36	35
10	58	46	39	34	57	45	38	34	45	38	33	44	38	33	43	37	33	32

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	35588	35588	35588
5°	33963	34531	35035
10°	32956	34207	35202
15°	31775	33644	34827
20°	31213	33339	34468
25°	30507	32594	33414
30°	30076	31815	31946
35°	29527	30387	29595
40°	28901	28283	25601
45°	27731	24703	19521
50°	24910	18817	12723
55°	20610	12055	7008
60°	15803	6271	3883
65°	11660	3302	2042
70°	6759	1523	767
75°	2629	625	255
80°	1042	302	151
85°	543	187	0



TEST NUMBER: P85566

CATALOG NUMBER: ML712830TUNVD010-495WW06-H750ICAT

**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	56.3	4.3	4.4
10°-20°	164.1	12.7	12.7
20°-30°	253.1	19.5	19.6
30°-40°	301.7	23.3	23.4
40°-50°	271.8	21.0	21.1
50°-60°	163.9	12.6	12.7
60°-70°	70.6	5.4	5.5
70°-80°	13.5	1.0	1.0
80°-90°	1.8	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°	473.6	36.5	36.7
0°-40°	775.2	59.8	60.1
0°-60°	1210.9	93.4	93.9
0°-90°	1296.8	100.0	100.5
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°	1296.8	100.0	100.5

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	596	596	596	596	596	
5°	580	582	590	596	598	55
15°	551	558	583	599	604	156
25°	521	528	556	568	570	241
35°	481	483	495	482	482	301
45°	416	408	370	296	293	317
55°	273	274	160	97	93	244
65°	130	132	37	25	23	128
75°	23	17	5	3	2	30
85°	3	3	1	0	0	4
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°	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2
2.5°	588.6	588.6	588.6	588.6	588.6	588.6	588.6	588.6	589.7	589.7	589.7
5°	580.0	578.9	578.9	578.9	578.9	580.0	580.0	581.0	581.0	582.1	583.2
7.5°	574.6	573.5	574.6	574.6	574.6	575.6	575.6	576.7	577.8	577.8	578.9
10°	569.2	568.1	568.1	569.2	569.2	570.2	571.3	572.4	573.5	574.6	575.6
12.5°	559.4	558.4	559.4	559.4	560.5	561.6	562.7	563.8	564.8	567.0	569.2
15°	550.8	550.8	550.8	550.8	551.9	553.0	554.0	556.2	557.3	558.4	561.6
17.5°	545.4	544.3	544.3	544.3	546.5	546.5	548.6	549.7	551.9	553.0	556.2
20°	538.9	537.8	537.8	538.9	540.0	541.1	542.2	543.2	545.4	547.6	549.7
22.5°	530.3	528.1	529.2	530.3	530.3	531.4	532.4	534.6	535.7	537.8	541.1
25°	520.6	519.5	519.5	519.5	520.6	521.6	522.7	523.8	526.0	528.1	530.3
27.5°	510.8	509.8	509.8	510.8	510.8	511.9	513.0	514.1	515.2	517.3	520.6
30°	503.3	502.2	502.2	502.2	503.3	503.3	503.3	505.4	506.5	508.7	509.8
32.5°	492.5	492.5	491.4	492.5	492.5	492.5	493.6	494.6	495.7	496.8	497.9
35°	480.6	479.5	479.5	479.5	479.5	480.6	480.6	480.6	481.7	482.8	483.8
37.5°	467.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	467.6	467.6
40°	453.6	452.5	452.5	452.5	452.5	451.4	451.4	451.4	451.4	451.4	451.4
42.5°	436.3	436.3	436.3	435.2	435.2	434.2	434.2	433.1	432.0	432.0	430.9
45°	415.8	414.7	414.7	414.7	413.6	412.6	412.6	410.4	410.4	408.2	408.2
47.5°	388.8	387.7	387.7	386.6	386.6	385.6	384.5	383.4	382.3	380.2	379.1
50°	353.2	353.2	353.2	353.2	352.1	352.1	351.0	348.8	348.8	346.7	344.5
52.5°	314.3	314.3	314.3	314.3	314.3	314.3	314.3	313.2	312.1	310.0	308.9
55°	273.2	273.2	274.3	275.4	276.5	276.5	276.5	275.4	275.4	274.3	273.2
57.5°	233.3	233.3	233.3	235.4	236.5	237.6	237.6	238.7	238.7	237.6	236.5
60°	193.3	193.3	194.4	196.6	198.7	199.8	199.8	200.9	200.9	200.9	200.9
62.5°	159.8	159.8	160.9	163.1	164.2	165.2	165.2	166.3	166.3	166.3	166.3
65°	129.6	129.6	129.6	130.7	130.7	130.7	131.8	131.8	131.8	131.8	131.8
67.5°	98.3	98.3	98.3	97.2	97.2	97.2	96.1	95.0	95.0	95.0	95.0
70°	67.0	67.0	67.0	65.9	64.8	63.7	62.6	60.5	60.5	59.4	60.5
72.5°	41.0	41.0	40.0	38.9	37.8	36.7	35.6	34.6	33.5	32.4	32.4
75°	22.7	22.7	22.7	21.6	20.5	20.5	19.4	18.4	17.3	17.3	16.2
77.5°	13.0	13.0	11.9	11.9	11.9	10.8	10.8	10.8	9.7	9.7	8.6
80°	7.6	7.6	7.6	7.6	7.6	6.5	6.5	6.5	6.5	6.5	6.5
82.5°	5.4	5.4	5.4	5.4	5.4	4.3	4.3	4.3	4.3	4.3	4.3
85°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	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: P85566

CATALOG NUMBER: ML712830TUNVD010-495WW06-H750ICAT

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2
2.5°	589.7	590.8	590.8	591.8	591.8	591.8	592.9	592.9	594.0	594.0	595.1
5°	583.2	584.3	584.3	585.4	586.4	587.5	588.6	589.7	590.8	590.8	591.8
7.5°	581.0	582.1	583.2	584.3	586.4	587.5	588.6	590.8	591.8	592.9	594.0
10°	577.8	580.0	581.0	583.2	585.4	587.5	588.6	590.8	592.9	594.0	596.2
12.5°	570.2	573.5	575.6	577.8	580.0	583.2	584.3	586.4	589.7	591.8	594.0
15°	563.8	565.9	569.2	571.3	574.6	577.8	580.0	583.2	585.4	587.5	589.7
17.5°	559.4	561.6	564.8	568.1	571.3	574.6	577.8	581.0	583.2	585.4	587.5
20°	553.0	556.2	559.4	562.7	565.9	569.2	573.5	575.6	578.9	581.0	583.2
22.5°	543.2	546.5	550.8	554.0	557.3	561.6	564.8	567.0	570.2	572.4	574.6
25°	533.5	536.8	540.0	543.2	547.6	550.8	554.0	556.2	559.4	561.6	562.7
27.5°	522.7	526.0	529.2	532.4	535.7	538.9	542.2	544.3	546.5	548.6	549.7
30°	511.9	515.2	518.4	521.6	524.9	527.0	530.3	532.4	533.5	534.6	534.6
32.5°	500.0	503.3	505.4	508.7	510.8	513.0	515.2	515.2	516.2	516.2	516.2
35°	484.9	487.1	489.2	491.4	493.6	494.6	494.6	494.6	494.6	492.5	490.3
37.5°	468.7	469.8	470.9	472.0	473.0	473.0	473.0	470.9	468.7	465.5	461.2
40°	451.4	451.4	451.4	451.4	450.4	449.3	447.1	443.9	438.5	433.1	425.5
42.5°	430.9	429.8	428.8	426.6	423.4	420.1	415.8	410.4	402.8	393.1	382.3
45°	406.1	403.9	401.8	397.4	392.0	384.5	378.0	370.4	359.6	347.8	333.7
47.5°	375.8	372.6	368.3	360.7	352.1	342.4	332.6	321.8	308.9	294.8	280.8
50°	341.3	338.0	330.5	320.8	307.8	293.8	280.8	266.8	253.8	239.8	224.6
52.5°	305.6	300.2	290.5	277.6	260.3	243.0	226.8	211.7	198.7	184.7	170.6
55°	270.0	264.6	252.7	235.4	214.9	193.3	175.0	159.8	146.9	135.0	124.2
57.5°	234.4	229.0	216.0	197.6	173.9	150.1	128.5	113.4	102.6	94.0	87.5
60°	198.7	193.3	181.4	162.0	138.2	113.4	91.8	76.7	69.1	63.7	60.5
62.5°	166.3	160.9	150.1	131.8	109.1	85.3	65.9	52.9	47.5	44.3	43.2
65°	131.8	128.5	118.8	102.6	83.2	62.6	46.4	36.7	32.4	30.2	29.2
67.5°	95.0	92.9	86.4	74.5	59.4	43.2	31.3	24.8	21.6	19.4	18.4
70°	59.4	59.4	56.2	48.6	37.8	27.0	19.4	15.1	13.0	11.9	10.8
72.5°	32.4	32.4	31.3	27.0	21.6	15.1	10.8	8.6	7.6	6.5	6.5
75°	15.1	15.1	15.1	14.0	11.9	8.6	6.5	5.4	4.3	4.3	4.3
77.5°	8.6	8.6	7.6	7.6	6.5	5.4	4.3	3.2	3.2	3.2	2.2
80°	5.4	5.4	5.4	4.3	4.3	3.2	3.2	2.2	2.2	2.2	2.2
82.5°	4.3	4.3	3.2	3.2	3.2	2.2	2.2	2.2	1.1	1.1	1.1
85°	3.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	0.0
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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: P85566

CATALOG NUMBER: ML712830TUNVD010-495WW06-H750ICAT

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2
2.5°	595.1	595.1	596.2	596.2	597.2	597.2	597.2	597.2	597.2	598.3	598.3
5°	592.9	592.9	594.0	595.1	595.1	596.2	597.2	597.2	597.2	598.3	598.3
7.5°	595.1	596.2	597.2	598.3	599.4	599.4	600.5	600.5	601.6	601.6	602.6
10°	597.2	598.3	600.5	601.6	602.6	603.7	604.8	605.9	605.9	607.0	605.9
12.5°	595.1	597.2	598.3	599.4	601.6	601.6	602.6	603.7	604.8	605.9	605.9
15°	591.8	594.0	595.1	597.2	598.3	599.4	600.5	601.6	601.6	602.6	602.6
17.5°	589.7	591.8	592.9	594.0	595.1	596.2	597.2	598.3	598.3	599.4	599.4
20°	585.4	586.4	587.5	588.6	589.7	590.8	591.8	592.9	592.9	594.0	594.0
22.5°	575.6	577.8	577.8	578.9	580.0	581.0	581.0	582.1	582.1	583.2	583.2
25°	563.8	564.8	565.9	567.0	567.0	568.1	568.1	568.1	569.2	569.2	569.2
27.5°	550.8	550.8	550.8	550.8	551.9	551.9	551.9	551.9	551.9	553.0	553.0
30°	534.6	534.6	534.6	534.6	534.6	533.5	534.6	534.6	534.6	534.6	534.6
32.5°	515.2	514.1	513.0	511.9	511.9	511.9	510.8	510.8	510.8	510.8	510.8
35°	488.2	487.1	484.9	482.8	482.8	481.7	481.7	481.7	481.7	481.7	481.7
37.5°	456.8	452.5	450.4	448.2	447.1	446.0	446.0	446.0	446.0	445.0	445.0
40°	418.0	412.6	407.2	405.0	403.9	402.8	402.8	402.8	401.8	401.8	401.8
42.5°	372.6	364.0	357.5	354.2	352.1	352.1	351.0	351.0	351.0	351.0	351.0
45°	320.8	310.0	302.4	299.2	295.9	295.9	295.9	294.8	294.8	293.8	294.8
47.5°	265.7	253.8	245.2	241.9	239.8	238.7	237.6	237.6	237.6	236.5	236.5
50°	210.6	198.7	191.2	186.8	184.7	183.6	183.6	182.5	182.5	181.4	181.4
52.5°	157.7	148.0	141.5	138.2	136.1	135.0	135.0	133.9	133.9	132.8	132.8
55°	113.4	105.8	101.5	99.4	97.2	97.2	96.1	95.0	95.0	94.0	94.0
57.5°	81.0	75.6	73.4	71.3	70.2	70.2	69.1	68.0	68.0	67.0	67.0
60°	57.2	56.2	54.0	52.9	52.9	51.8	50.8	50.8	49.7	49.7	48.6
62.5°	42.1	41.0	40.0	38.9	37.8	37.8	36.7	36.7	35.6	35.6	35.6
65°	29.2	28.1	27.0	25.9	25.9	24.8	24.8	24.8	23.8	23.8	23.8
67.5°	18.4	17.3	16.2	16.2	15.1	15.1	15.1	14.0	14.0	14.0	14.0
70°	10.8	9.7	9.7	8.6	8.6	8.6	8.6	8.6	8.6	7.6	7.6
72.5°	6.5	5.4	5.4	5.4	5.4	4.3	4.3	4.3	4.3	4.3	4.3
75°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	2.2
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°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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: P85566

CATALOG NUMBER: ML712830TUNVD010-495WW06-H750ICAT

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	596.2	596.2	596.2	596.2
2.5°	598.3	598.3	598.3	598.3
5°	598.3	598.3	599.4	598.3
7.5°	602.6	602.6	602.6	602.6
10°	607.0	607.0	608.0	608.0
12.5°	605.9	607.0	607.0	607.0
15°	603.7	603.7	603.7	603.7
17.5°	600.5	600.5	600.5	600.5
20°	594.0	595.1	595.1	595.1
22.5°	583.2	583.2	584.3	584.3
25°	569.2	570.2	570.2	570.2
27.5°	553.0	553.0	553.0	553.0
30°	534.6	534.6	534.6	534.6
32.5°	510.8	510.8	510.8	511.9
35°	481.7	481.7	481.7	481.7
37.5°	445.0	445.0	445.0	445.0
40°	401.8	401.8	401.8	401.8
42.5°	349.9	349.9	349.9	349.9
45°	293.8	293.8	293.8	292.7
47.5°	235.4	236.5	235.4	235.4
50°	180.4	180.4	180.4	180.4
52.5°	131.8	131.8	131.8	131.8
55°	92.9	92.9	92.9	92.9
57.5°	65.9	65.9	65.9	65.9
60°	48.6	47.5	47.5	47.5
62.5°	34.6	34.6	34.6	34.6
65°	22.7	22.7	22.7	22.7
67.5°	14.0	14.0	14.0	14.0
70°	7.6	7.6	7.6	7.6
72.5°	4.3	4.3	4.3	4.3
75°	2.2	2.2	2.2	2.2
77.5°	1.1	1.1	2.2	2.2
80°	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1
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)