

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: P85569

Luminaire Tested: **ML712830TUNVD010-495PWW06-H750ICAT**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P85569  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: ML712830TUNVD010-495PWW06-H750ICAT  
Description: HALO 6 INCH LED DOWNLIGHT WITH 1200 Lmn MODULE, DIFFUSE LENS AND WHITE 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: 1276 (1 lamp)  
Luminaire Lumens: 1282.0 lumens  
Efficiency: 100.5%  
Efficacy: 52.8 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.23 / 1.28  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct

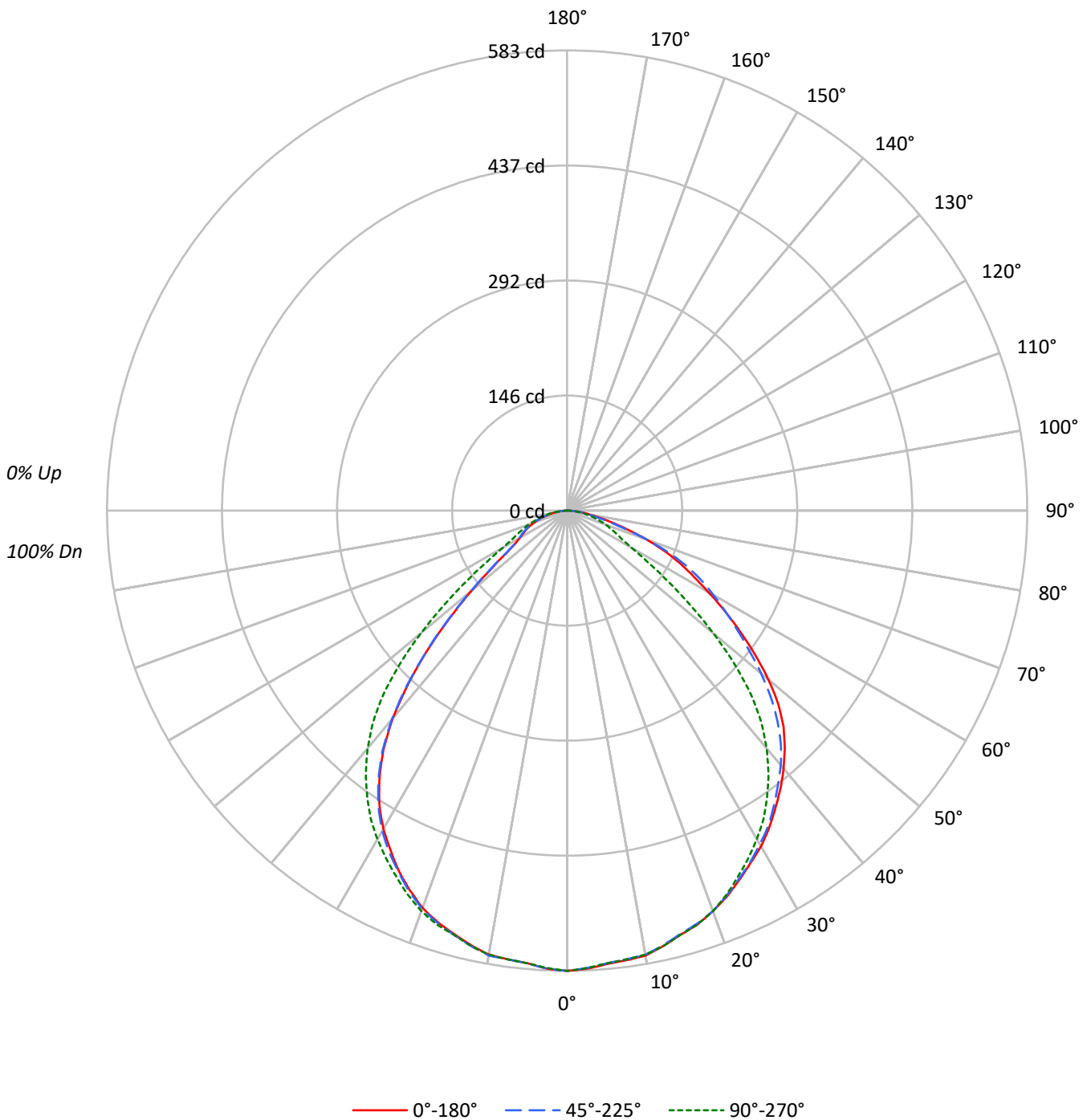
Input Watts (W): 24.3  
Input Voltage (V): NR  
Input Current (Ain): 0.2037  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: 6 HR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	120	120	120	120	117	117	117	117	112	112	112	107	107	107	103	103	103	100
1	111	107	103	100	108	105	101	98	100	98	95	96	94	92	93	91	89	87
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	83	80	77	75
3	94	85	77	72	92	83	76	71	80	74	70	78	73	69	75	71	67	65
4	87	76	68	62	85	75	67	62	72	66	61	70	64	60	68	63	59	57
5	80	69	60	54	78	68	60	54	65	59	53	64	58	53	62	57	52	50
6	75	62	54	48	73	61	54	48	60	53	47	58	52	47	56	51	47	45
7	70	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40
8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	34	33
10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

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

	0°	90°	180°
0°	34812	34812	34812
5°	33770	33706	33706
10°	33141	33078	33078
15°	32087	32087	32023
20°	31277	31277	31028
25°	30250	29998	29558
30°	29365	28719	27817
35°	28268	27137	25478
40°	27181	25046	21880
45°	25857	21969	16713
50°	23458	17061	11122
55°	20203	11648	7091
60°	16866	7595	5649
65°	14188	6118	5146
70°	10784	5225	4469
75°	6878	4122	3497
80°	4004	2962	2372
85°	2205	1459	1103



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	54.9	4.3	4.3
10°-20°	157.1	12.3	12.3
20°-30°	235.3	18.4	18.4
30°-40°	272.7	21.3	21.4
40°-50°	243.4	19.0	19.1
50°-60°	159.9	12.5	12.5
60°-70°	101.7	7.9	8.0
70°-80°	46.2	3.6	3.6
80°-90°	10.8	0.8	0.8
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°	447.2	34.9	35.0
0°-40°	719.9	56.2	56.4
0°-60°	1123.2	87.6	88.0
0°-90°	1282.0	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°	1282.0	100.0	100.5

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	583	583	583	583	583	
5°	577	576	576	576	576	55
15°	556	555	556	556	555	157
25°	516	515	512	505	504	238
35°	460	457	442	417	415	288
45°	388	377	329	252	251	297
55°	268	262	154	95	94	240
65°	158	167	68	58	57	155
75°	59	53	36	32	30	66
85°	13	12	9	8	6	15
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°	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2
2.5°	581.0	580.0	580.0	580.0	580.0	580.0	580.0	580.0	580.0	580.0	580.0
5°	576.7	575.6	575.6	575.6	575.6	575.6	575.6	575.6	575.6	575.6	575.6
7.5°	574.6	574.6	574.6	573.5	573.5	574.6	574.6	573.5	574.6	573.5	573.5
10°	572.4	571.3	571.3	571.3	571.3	571.3	571.3	571.3	571.3	571.3	571.3
12.5°	564.8	563.8	563.8	563.8	563.8	563.8	563.8	563.8	563.8	563.8	563.8
15°	556.2	555.1	555.1	555.1	555.1	555.1	555.1	555.1	555.1	555.1	555.1
17.5°	549.7	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6
20°	540.0	540.0	540.0	540.0	540.0	540.0	540.0	540.0	540.0	540.0	540.0
22.5°	529.2	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1	528.1
25°	516.2	515.2	515.2	515.2	515.2	515.2	515.2	515.2	515.2	515.2	515.2
27.5°	503.3	503.3	503.3	502.2	503.3	502.2	502.2	502.2	501.1	502.2	501.1
30°	491.4	490.3	490.3	490.3	490.3	490.3	489.2	489.2	489.2	488.2	488.2
32.5°	476.3	476.3	476.3	475.2	475.2	475.2	474.1	475.2	474.1	474.1	473.0
35°	460.1	460.1	460.1	459.0	459.0	459.0	457.9	457.9	456.8	456.8	455.8
37.5°	443.9	442.8	442.8	442.8	441.7	441.7	440.6	440.6	439.6	438.5	437.4
40°	426.6	426.6	425.5	425.5	425.5	424.4	423.4	422.3	421.2	421.2	419.0
42.5°	408.2	407.2	407.2	407.2	406.1	405.0	403.9	402.8	401.8	400.7	398.5
45°	387.7	386.6	386.6	385.6	384.5	383.4	382.3	380.2	379.1	376.9	374.8
47.5°	362.9	361.8	361.8	360.7	359.6	358.6	356.4	354.2	352.1	349.9	347.8
50°	332.6	332.6	331.6	330.5	329.4	321.8	327.2	325.1	322.9	320.8	317.5
52.5°	300.2	300.2	299.2	299.2	299.2	298.1	295.9	294.8	292.7	290.5	287.3
55°	267.8	267.8	267.8	267.8	267.8	267.8	266.8	265.7	264.6	262.4	261.4
57.5°	236.5	236.5	236.5	237.6	237.6	238.7	238.7	238.7	237.6	237.6	236.5
60°	206.3	206.3	207.4	208.4	209.5	210.6	211.7	212.8	213.8	213.8	214.9
62.5°	180.4	181.4	182.5	183.6	184.7	185.8	187.9	189.0	190.1	192.2	193.3
65°	157.7	157.7	158.8	159.8	160.9	162.0	163.1	164.2	166.3	167.4	169.6
67.5°	132.8	132.8	132.8	132.8	133.9	133.9	135.0	136.1	138.2	139.3	140.4
70°	106.9	106.9	105.8	105.8	105.8	105.8	105.8	105.8	105.8	106.9	108.0
72.5°	81.0	81.0	79.9	79.9	78.8	77.8	76.7	76.7	75.6	76.7	76.7
75°	59.4	59.4	58.3	57.2	56.2	56.2	55.1	54.0	52.9	52.9	52.9
77.5°	42.1	42.1	42.1	41.0	40.0	40.0	38.9	37.8	37.8	36.7	35.6
80°	29.2	29.2	29.2	29.2	28.1	27.0	27.0	27.0	25.9	25.9	24.8
82.5°	20.5	20.5	19.4	19.4	19.4	19.4	19.4	18.4	18.4	18.4	17.3
85°	13.0	13.0	13.0	13.0	13.0	13.0	11.9	11.9	11.9	11.9	10.8
87.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4
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°	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2
2.5°	580.0	580.0	580.0	580.0	581.0	580.0	580.0	580.0	580.0	580.0	581.0
5°	575.6	575.6	575.6	574.6	575.6	575.6	575.6	575.6	575.6	575.6	575.6
7.5°	574.6	573.5	574.6	573.5	573.5	574.6	573.5	573.5	573.5	573.5	573.5
10°	571.3	571.3	571.3	571.3	571.3	571.3	571.3	571.3	571.3	571.3	571.3
12.5°	563.8	563.8	563.8	564.8	563.8	564.8	564.8	564.8	564.8	564.8	564.8
15°	556.2	556.2	556.2	556.2	556.2	556.2	556.2	556.2	556.2	556.2	556.2
17.5°	549.7	549.7	549.7	548.6	548.6	549.7	549.7	549.7	548.6	548.6	548.6
20°	540.0	540.0	540.0	541.1	540.0	540.0	540.0	540.0	540.0	538.9	538.9
22.5°	528.1	528.1	528.1	528.1	528.1	528.1	527.0	527.0	527.0	526.0	526.0
25°	515.2	514.1	515.2	514.1	514.1	513.0	513.0	511.9	510.8	510.8	509.8
27.5°	502.2	501.1	501.1	500.0	499.0	499.0	497.9	496.8	495.7	494.6	493.6
30°	488.2	488.2	487.1	486.0	484.9	483.8	482.8	480.6	479.5	477.4	476.3
32.5°	473.0	472.0	470.9	469.8	468.7	467.6	465.5	463.3	460.1	457.9	455.8
35°	455.8	453.6	452.5	451.4	449.3	447.1	445.0	441.7	438.5	435.2	430.9
37.5°	436.3	435.2	434.2	430.9	428.8	425.5	422.3	419.0	413.6	408.2	402.8
40°	418.0	415.8	413.6	410.4	407.2	402.8	398.5	393.1	387.7	379.1	370.4
42.5°	397.4	394.2	391.0	386.6	382.3	376.9	371.5	364.0	355.3	344.5	332.6
45°	372.6	369.4	365.0	359.6	353.2	345.6	338.0	329.4	318.6	304.6	290.5
47.5°	345.6	341.3	335.9	328.3	318.6	308.9	299.2	287.3	275.4	261.4	245.2
50°	314.3	310.0	302.4	292.7	280.8	267.8	254.9	241.9	229.0	213.8	199.8
52.5°	285.1	279.7	271.1	257.0	241.9	225.7	209.5	196.6	183.6	169.6	156.6
55°	258.1	252.7	241.9	225.7	206.3	186.8	168.5	154.4	142.6	131.8	121.0
57.5°	235.4	230.0	217.1	198.7	176.0	153.4	133.9	119.9	109.1	101.5	94.0
60°	213.8	208.4	196.6	177.1	152.3	128.5	106.9	92.9	85.3	79.9	76.7
62.5°	193.3	189.0	177.1	158.8	135.0	111.2	90.7	77.8	71.3	68.0	67.0
65°	169.6	166.3	156.6	139.3	117.7	96.1	78.8	68.0	63.7	61.6	60.5
67.5°	141.5	139.3	130.7	116.6	99.4	81.0	68.0	59.4	56.2	55.1	54.0
70°	109.1	109.1	102.6	92.9	79.9	67.0	57.2	51.8	49.7	48.6	47.5
72.5°	77.8	77.8	74.5	69.1	60.5	52.9	46.4	43.2	42.1	41.0	41.0
75°	51.8	51.8	50.8	48.6	44.3	40.0	36.7	35.6	34.6	34.6	33.5
77.5°	35.6	34.6	34.6	33.5	32.4	30.2	29.2	28.1	28.1	27.0	27.0
80°	24.8	23.8	23.8	23.8	22.7	22.7	21.6	21.6	20.5	20.5	20.5
82.5°	17.3	17.3	16.2	16.2	16.2	15.1	15.1	15.1	15.1	14.0	14.0
85°	10.8	10.8	10.8	9.7	9.7	9.7	9.7	8.6	8.6	8.6	8.6
87.5°	5.4	5.4	4.3	4.3	4.3	4.3	4.3	4.3	3.2	3.2	3.2
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2
2.5°	581.0	581.0	581.0	581.0	581.0	581.0	581.0	581.0	581.0	581.0	581.0
5°	575.6	574.6	575.6	575.6	575.6	575.6	575.6	575.6	575.6	575.6	575.6
7.5°	573.5	573.5	573.5	573.5	573.5	573.5	573.5	573.5	573.5	573.5	573.5
10°	571.3	571.3	571.3	571.3	572.4	572.4	571.3	571.3	572.4	571.3	571.3
12.5°	564.8	564.8	564.8	564.8	564.8	564.8	564.8	563.8	564.8	564.8	563.8
15°	556.2	556.2	556.2	556.2	556.2	556.2	556.2	555.1	555.1	555.1	555.1
17.5°	548.6	548.6	547.6	547.6	547.6	547.6	547.6	546.5	547.6	546.5	546.5
20°	538.9	537.8	537.8	536.8	536.8	536.8	536.8	536.8	536.8	535.7	535.7
22.5°	524.9	524.9	523.8	522.7	522.7	522.7	522.7	521.6	521.6	521.6	521.6
25°	508.7	508.7	507.6	506.5	506.5	505.4	505.4	504.4	504.4	504.4	504.4
27.5°	491.4	490.3	490.3	489.2	488.2	488.2	487.1	486.0	486.0	486.0	486.0
30°	474.1	472.0	470.9	469.8	468.7	468.7	467.6	466.6	466.6	466.6	466.6
32.5°	452.5	450.4	448.2	447.1	446.0	445.0	445.0	443.9	443.9	443.9	443.9
35°	426.6	423.4	421.2	419.0	418.0	416.9	416.9	415.8	415.8	415.8	414.7
37.5°	396.4	392.0	388.8	386.6	384.5	384.5	383.4	383.4	383.4	382.3	382.3
40°	361.8	355.3	351.0	347.8	345.6	345.6	345.6	344.5	344.5	343.4	343.4
42.5°	321.8	312.1	305.6	302.4	300.2	300.2	299.2	299.2	299.2	299.2	299.2
45°	277.6	265.7	258.1	254.9	252.7	251.6	251.6	250.6	250.6	250.6	250.6
47.5°	231.1	218.2	210.6	206.3	205.2	204.1	203.0	203.0	203.0	202.0	202.0
50°	184.7	173.9	166.3	162.0	160.9	159.8	158.8	158.8	158.8	158.8	157.7
52.5°	143.6	133.9	127.4	125.3	123.1	123.1	122.0	122.0	122.0	121.0	121.0
55°	110.2	103.7	99.4	97.2	96.1	95.0	95.0	95.0	95.0	95.0	94.0
57.5°	87.5	83.2	81.0	79.9	79.9	78.8	78.8	78.8	78.8	77.8	77.8
60°	74.5	72.4	71.3	71.3	71.3	70.2	70.2	70.2	70.2	69.1	69.1
62.5°	65.9	65.9	64.8	64.8	64.8	64.8	63.7	63.7	63.7	63.7	62.6
65°	59.4	59.4	59.4	59.4	59.4	58.3	58.3	58.3	57.2	57.2	57.2
67.5°	54.0	54.0	52.9	52.9	52.9	52.9	51.8	51.8	51.8	51.8	50.8
70°	47.5	47.5	47.5	46.4	46.4	46.4	45.4	45.4	45.4	44.3	44.3
72.5°	41.0	40.0	40.0	40.0	38.9	38.9	38.9	37.8	37.8	37.8	37.8
75°	33.5	33.5	32.4	32.4	32.4	32.4	31.3	31.3	31.3	31.3	31.3
77.5°	27.0	25.9	25.9	25.9	24.8	24.8	24.8	24.8	23.8	23.8	23.8
80°	20.5	19.4	19.4	19.4	18.4	18.4	18.4	18.4	18.4	17.3	17.3
82.5°	14.0	13.0	13.0	13.0	13.0	11.9	11.9	11.9	11.9	11.9	11.9
85°	8.6	7.6	7.6	7.6	7.6	7.6	6.5	6.5	6.5	6.5	6.5
87.5°	3.2	3.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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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CATALOG NUMBER: ML712830TUNVD010-495PWW06-H750ICAT

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	583.2	583.2	583.2	583.2
2.5°	581.0	581.0	582.1	581.0
5°	575.6	575.6	575.6	575.6
7.5°	573.5	573.5	573.5	573.5
10°	571.3	571.3	571.3	571.3
12.5°	564.8	563.8	563.8	563.8
15°	555.1	555.1	555.1	555.1
17.5°	546.5	546.5	546.5	546.5
20°	535.7	535.7	535.7	535.7
22.5°	521.6	521.6	521.6	520.6
25°	504.4	504.4	504.4	504.4
27.5°	486.0	486.0	486.0	484.9
30°	466.6	466.6	465.5	465.5
32.5°	442.8	442.8	442.8	442.8
35°	415.8	414.7	414.7	414.7
37.5°	382.3	382.3	382.3	382.3
40°	343.4	344.5	343.4	343.4
42.5°	298.1	298.1	298.1	298.1
45°	250.6	250.6	249.5	250.6
47.5°	202.0	202.0	202.0	202.0
50°	157.7	157.7	157.7	157.7
52.5°	121.0	121.0	121.0	121.0
55°	94.0	94.0	94.0	94.0
57.5°	77.8	77.8	77.8	77.8
60°	69.1	69.1	69.1	69.1
62.5°	62.6	62.6	62.6	62.6
65°	57.2	57.2	57.2	57.2
67.5°	50.8	50.8	50.8	50.8
70°	44.3	44.3	44.3	44.3
72.5°	37.8	37.8	36.7	37.8
75°	30.2	30.2	30.2	30.2
77.5°	23.8	23.8	23.8	23.8
80°	17.3	17.3	17.3	17.3
82.5°	11.9	11.9	11.9	11.9
85°	6.5	6.5	6.5	6.5
87.5°	2.2	2.2	2.2	2.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)