

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: P130069

Luminaire Tested: **HL618TAT - HLM6935 - HL6NFL - 455SN**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130069
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33469)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6935 - HL6NFL - 455SN
Description: HALO ALLSLOPE 6" 30W, Satin Nickel Reflector, Satin Nickel Metal Trim Ring using 25 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2103.3 lumens
Efficiency: N/A
Efficacy: 76.2 lumens/watt
Spacing Criteria (0/90/45): 1.85 / 0.72 / 1.15
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

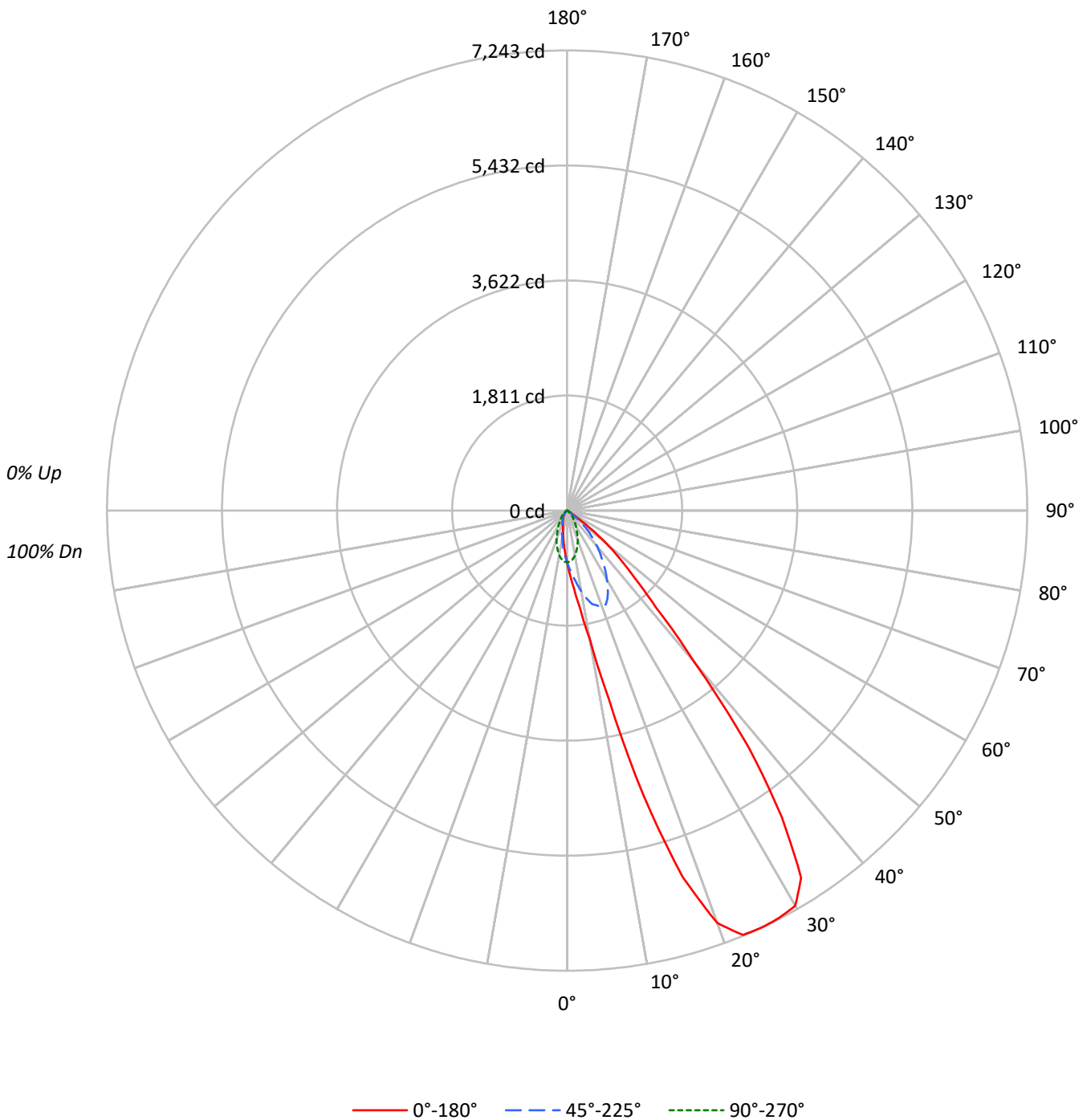
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P130069

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SN

Luminous Intensity Polar Plot





TEST NUMBER: P130069

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SN

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	113	109	107	104	110	107	105	102	103	101	99	99	98	96	96	95	94	92					92			
2	106	100	96	92	104	99	94	91	95	92	89	92	89	87	89	87	85	83					83			
3	99	92	86	82	97	91	85	81	88	83	80	85	82	78	83	80	77	75					75			
4	93	84	78	73	91	83	77	73	81	76	72	79	75	71	77	73	70	68					68			
5	87	78	71	66	86	77	70	66	75	69	65	73	68	64	71	67	64	62					62			
6	82	72	65	60	80	71	64	59	69	63	59	68	62	59	66	62	58	56					56			
7	77	66	59	54	75	65	59	54	64	58	54	63	57	53	62	57	53	52					52			
8	72	61	54	50	71	61	54	49	59	53	49	58	53	49	57	52	49	47					47			
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43					43			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40					40			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	48511	48511	48511
5°	71844	46155	32207
10°	119121	41317	21208
15°	267884	34873	14965
20°	400052	28114	11092
25°	424454	21266	8679
30°	429177	15967	6986
35°	361900	12036	5474
40°	199038	8939	4256
45°	100387	6236	2968
50°	57713	4161	1883
55°	13858	2859	1011
60°	4464	2003	728
65°	2906	1206	504
70°	1574	565	333
75°	521	382	255
80°	151	302	151
85°	0	373	0



TEST NUMBER: P130069

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SN

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.4	3.9
10°-20°	345.8	16.4
20°-30°	686.2	32.6
30°-40°	617.6	29.4
40°-50°	280.2	13.3
50°-60°	69.8	3.3
60°-70°	16.7	0.8
70°-80°	4.1	0.2
80°-90°	1.5	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1113.4	52.9
0°-40°	1731.0	82.3
0°-60°	2081.0	98.9
0°-90°	2103.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2103.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	813	813	813	813	813	
5°	1227	1038	788	625	550	142
15°	4644	1525	604	318	259	1367
25°	7243	1507	363	176	148	3329
35°	5890	978	196	109	89	3494
45°	1505	494	94	57	44	1271
55°	184	68	38	22	13	253
65°	32	26	13	8	6	33
75°	4	3	3	3	2	6
85°	0	2	2	1	0	0
90°	0	0	0	0	0	



TEST NUMBER: P130069

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SN

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7
2.5°	1004.2	954.1	976.4	955.2	957.4	955.2	939.6	950.8	927.4	917.4	904.0
5°	1226.9	1163.4	1189.0	1153.4	1140.0	1136.7	1101.1	1093.3	1059.9	1037.6	1005.3
7.5°	1543.0	1480.7	1489.6	1446.2	1399.4	1377.2	1315.9	1279.2	1212.4	1156.7	1104.4
10°	2057.4	1948.3	1980.6	1859.2	1764.6	1683.3	1579.8	1497.4	1385.0	1292.6	1203.5
12.5°	3040.4	2791.1	2746.5	2527.2	2330.2	2113.1	1898.2	1755.7	1566.4	1418.4	1288.1
15°	4643.6	4278.4	4189.4	3737.4	3257.5	2754.3	2310.1	2031.8	1733.4	1525.2	1349.3
17.5°	6045.3	5669.0	5554.3	4950.9	4442.1	3672.8	2850.1	2320.1	1884.8	1564.2	1378.3
20°	6907.0	6711.0	6696.6	5922.8	5196.9	4393.1	3328.8	2545.0	1929.4	1622.1	1364.9
22.5°	7229.8	7117.4	7060.6	6495.0	5748.0	4776.1	3584.9	2638.5	1980.6	1594.3	1313.7
25°	7243.2	7187.5	7212.0	6676.5	5906.1	4857.4	3570.4	2556.2	1890.4	1507.4	1229.1
27.5°	7227.6	7170.8	7183.1	6605.3	5769.2	4630.3	3311.0	2340.2	1744.6	1386.1	1131.1
30°	7182.0	7101.8	6980.5	6261.3	5333.9	4094.8	2813.3	2050.7	1563.1	1252.5	1033.2
32.5°	6853.5	6762.2	6470.6	5577.7	4562.3	3322.1	2291.2	1754.6	1367.1	1114.4	925.2
35°	5890.5	5840.4	5447.4	4527.8	3555.9	2535.0	1883.7	1498.5	1187.9	977.5	814.9
37.5°	4678.1	4628.0	4186.0	3397.8	2550.6	1967.2	1549.7	1269.2	1022.0	853.9	711.4
40°	3123.9	3184.1	2903.5	2341.3	1899.3	1534.1	1265.8	1073.2	871.7	724.8	601.2
42.5°	2070.8	2078.5	1971.7	1688.9	1442.8	1220.2	1029.8	888.4	725.9	605.6	495.4
45°	1505.2	1503.0	1442.8	1262.5	1124.4	976.4	842.8	729.2	600.1	494.3	399.7
47.5°	1136.7	1138.9	1103.3	988.6	908.5	788.2	680.2	582.3	474.3	384.1	303.9
50°	818.3	825.0	798.2	717.0	650.2	560.0	469.8	395.2	315.1	250.5	190.4
52.5°	456.5	473.2	450.9	405.2	357.4	300.6	247.2	208.2	160.3	126.9	100.2
55°	183.7	195.9	189.3	167.0	148.1	124.7	110.2	93.5	76.8	67.9	62.3
57.5°	79.0	77.9	77.9	71.3	67.9	63.5	59.0	57.9	53.4	52.3	50.1
60°	54.6	54.6	54.6	52.3	51.2	50.1	47.9	46.8	44.5	42.3	40.1
62.5°	42.3	42.3	42.3	41.2	40.1	40.1	37.9	37.9	35.6	33.4	31.2
65°	32.3	32.3	33.4	32.3	31.2	31.2	30.1	28.9	26.7	25.6	23.4
67.5°	23.4	23.4	23.4	23.4	23.4	22.3	21.2	20.0	18.9	17.8	17.8
70°	15.6	15.6	15.6	15.6	15.6	14.5	14.5	13.4	13.4	12.2	11.1
72.5°	10.0	10.0	10.0	8.9	8.9	8.9	8.9	7.8	7.8	6.7	6.7
75°	4.5	4.5	4.5	4.5	4.5	3.3	4.5	3.3	3.3	3.3	3.3
77.5°	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2	2.2	2.2
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2
82.5°	1.1	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2
85°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
87.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	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



TEST NUMBER: P130069

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SN

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7
2.5°	900.7	880.6	876.2	852.8	838.3	828.3	821.6	808.3	781.5	777.1	769.3
5°	988.6	947.4	928.5	889.5	859.5	836.1	814.9	788.2	747.0	729.2	714.7
7.5°	1068.8	983.1	968.6	912.9	868.4	828.3	793.8	755.9	704.7	681.3	655.7
10°	1135.6	1047.6	993.1	920.7	861.7	809.4	762.6	713.6	656.9	623.5	592.3
12.5°	1186.8	1073.2	996.4	908.5	836.1	771.5	719.2	659.1	601.2	562.2	528.8
15°	1213.5	1075.5	981.9	900.7	798.2	725.9	665.8	604.5	541.1	503.2	462.0
17.5°	1210.2	1053.2	948.5	838.3	747.0	670.2	606.8	548.9	483.2	436.4	398.6
20°	1179.0	1015.3	902.9	786.0	690.3	607.9	547.7	485.4	419.7	377.4	341.8
22.5°	1123.3	959.7	842.8	722.5	630.1	548.9	483.2	423.1	361.8	327.3	292.8
25°	1054.3	891.8	771.5	653.5	561.1	483.2	420.8	362.9	310.6	279.4	251.6
27.5°	971.9	813.8	694.7	587.8	496.5	420.8	360.7	312.8	266.1	241.6	217.1
30°	881.7	729.2	617.9	512.1	427.5	360.7	308.4	267.2	229.3	202.6	189.3
32.5°	784.9	642.4	542.2	443.1	365.2	307.3	262.7	228.2	197.1	179.2	164.8
35°	686.9	556.7	463.1	375.2	310.6	258.3	223.8	195.9	169.2	155.9	142.5
37.5°	590.1	472.0	389.7	315.1	259.4	219.3	190.4	165.9	144.7	134.7	124.7
40°	493.2	391.9	320.6	259.4	213.8	182.6	159.2	140.3	123.6	115.8	108.0
42.5°	401.9	319.5	260.5	218.2	178.1	152.5	133.6	118.0	103.5	96.9	90.2
45°	322.9	254.9	209.3	170.3	142.5	120.2	105.8	93.5	83.5	77.9	74.6
47.5°	239.4	187.0	150.3	122.5	102.4	88.0	80.2	72.4	66.8	64.6	61.2
50°	148.1	115.8	98.0	81.3	72.4	66.8	63.5	59.0	54.6	52.3	49.0
52.5°	84.6	71.3	65.7	61.2	57.9	55.7	52.3	49.0	43.4	41.2	39.0
55°	57.9	54.6	53.4	50.1	46.8	43.4	41.2	37.9	34.5	34.5	32.3
57.5°	47.9	44.5	43.4	39.0	36.7	34.5	33.4	31.2	28.9	26.7	25.6
60°	39.0	35.6	34.5	32.3	30.1	27.8	26.7	24.5	22.3	21.2	20.0
62.5°	30.1	27.8	26.7	25.6	23.4	21.2	20.0	18.9	16.7	15.6	14.5
65°	23.4	21.2	20.0	18.9	16.7	15.6	14.5	13.4	12.2	11.1	10.0
67.5°	16.7	14.5	14.5	13.4	12.2	11.1	10.0	8.9	7.8	7.8	6.7
70°	11.1	10.0	8.9	7.8	7.8	6.7	5.6	5.6	5.6	5.6	5.6
72.5°	6.7	5.6	5.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
75°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	2.2	2.2	3.3	3.3	3.3	3.3	3.3	3.3	2.2	3.3	3.3
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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	2.2	2.2	2.2
87.5°	2.2	2.2	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



TEST NUMBER: P130069

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SN

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7	812.7
2.5°	755.9	752.6	737.0	733.7	719.2	729.2	715.9	694.7	691.4	696.9	684.7
5°	688.0	674.7	655.7	644.6	626.8	624.6	613.4	584.5	581.1	575.6	564.4
7.5°	621.2	605.6	577.8	556.7	542.2	533.3	519.9	493.2	483.2	477.6	463.1
10°	556.7	534.4	501.0	483.2	458.7	446.4	432.0	407.5	397.5	394.1	377.4
12.5°	491.0	462.0	428.6	410.8	385.2	374.1	360.7	340.7	331.8	324.0	316.2
15°	423.1	396.3	365.2	348.5	328.4	318.4	307.3	287.2	279.4	275.0	272.8
17.5°	364.1	338.4	309.5	297.3	278.3	268.3	260.5	244.9	238.2	233.8	229.3
20°	312.8	290.6	266.1	254.9	239.4	232.7	223.8	211.5	207.1	203.7	199.3
22.5°	267.2	248.3	229.3	220.4	208.2	202.6	194.8	185.9	181.5	178.1	174.8
25°	229.3	214.9	200.4	192.6	181.5	175.9	170.3	162.5	158.1	157.0	153.6
27.5°	199.3	188.1	175.9	168.1	159.2	154.8	150.3	143.6	141.4	139.2	135.8
30°	174.8	164.8	153.6	148.1	141.4	138.1	133.6	129.1	125.8	126.9	122.5
32.5°	152.5	144.7	135.8	132.5	125.8	123.6	120.2	114.7	111.3	110.2	108.0
35°	133.6	126.9	120.2	118.0	112.4	109.1	105.8	101.3	100.2	96.9	94.6
37.5°	116.9	111.3	105.8	103.5	99.1	94.6	92.4	86.8	84.6	83.5	82.4
40°	101.3	96.9	90.2	88.0	83.5	81.3	77.9	74.6	72.4	72.4	70.1
42.5°	84.6	81.3	75.7	74.6	70.1	69.0	65.7	63.5	61.2	60.1	59.0
45°	70.1	67.9	63.5	62.3	59.0	56.8	55.7	51.2	49.0	47.9	46.8
47.5°	57.9	55.7	50.1	49.0	47.9	44.5	42.3	41.2	39.0	37.9	37.9
50°	45.6	43.4	40.1	40.1	37.9	35.6	34.5	32.3	31.2	30.1	28.9
52.5°	36.7	35.6	32.3	32.3	30.1	28.9	26.7	25.6	23.4	23.4	22.3
55°	30.1	27.8	25.6	24.5	23.4	22.3	20.0	18.9	17.8	16.7	15.6
57.5°	23.4	22.3	20.0	18.9	17.8	16.7	14.5	13.4	12.2	12.2	11.1
60°	17.8	16.7	14.5	14.5	12.2	11.1	11.1	10.0	10.0	10.0	8.9
62.5°	13.4	12.2	11.1	10.0	8.9	8.9	8.9	8.9	7.8	7.8	7.8
65°	8.9	8.9	7.8	7.8	7.8	7.8	7.8	6.7	6.7	6.7	6.7
67.5°	6.7	6.7	6.7	6.7	6.7	5.6	5.6	5.6	5.6	5.6	5.6
70°	5.6	5.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.3
72.5°	4.5	4.5	4.5	4.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	3.3	3.3	3.3	3.3	3.3	3.3	2.2	2.2	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	2.2	1.1
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1
82.5°	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1
85°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1
87.5°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	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: P130069

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SN

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	812.7	812.7	812.7	812.7
2.5°	681.3	690.3	679.1	670.2
5°	565.6	570.0	558.9	550.0
7.5°	462.0	463.1	453.1	445.3
10°	380.8	379.6	371.8	366.3
12.5°	316.2	315.1	308.4	303.9
15°	265.0	266.1	261.6	259.4
17.5°	228.2	228.2	223.8	222.7
20°	197.1	198.2	194.8	191.5
22.5°	173.7	173.7	171.4	168.1
25°	152.5	152.5	150.3	148.1
27.5°	135.8	136.9	134.7	131.4
30°	121.4	121.4	119.1	116.9
32.5°	106.9	106.9	105.8	103.5
35°	92.4	93.5	91.3	89.1
37.5°	81.3	81.3	80.2	77.9
40°	69.0	70.1	69.0	66.8
42.5°	57.9	57.9	57.9	56.8
45°	45.6	46.8	45.6	44.5
47.5°	36.7	36.7	36.7	35.6
50°	27.8	28.9	27.8	26.7
52.5°	21.2	21.2	20.0	20.0
55°	15.6	14.5	14.5	13.4
57.5°	11.1	11.1	11.1	10.0
60°	8.9	8.9	8.9	8.9
62.5°	7.8	7.8	7.8	7.8
65°	6.7	6.7	6.7	5.6
67.5°	4.5	4.5	4.5	4.5
70°	3.3	3.3	3.3	3.3
72.5°	3.3	3.3	2.2	2.2
75°	2.2	2.2	2.2	2.2
77.5°	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1
82.5°	1.1	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)