

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: P130078

Luminaire Tested: **HL618TAT - HLM6940 - HL6NFL - 456W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130078
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6940 - HL6NFL - 456W
Description: HALO ALLSLOPE 6" 30W, White Coilex Baffle, White Metal Trim Ring using 25 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2305.4 lumens
Efficiency: N/A
Efficacy: 83.5 lumens/watt
Spacing Criteria (0/90/45): 1.91 / 0.72 / 1.18
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

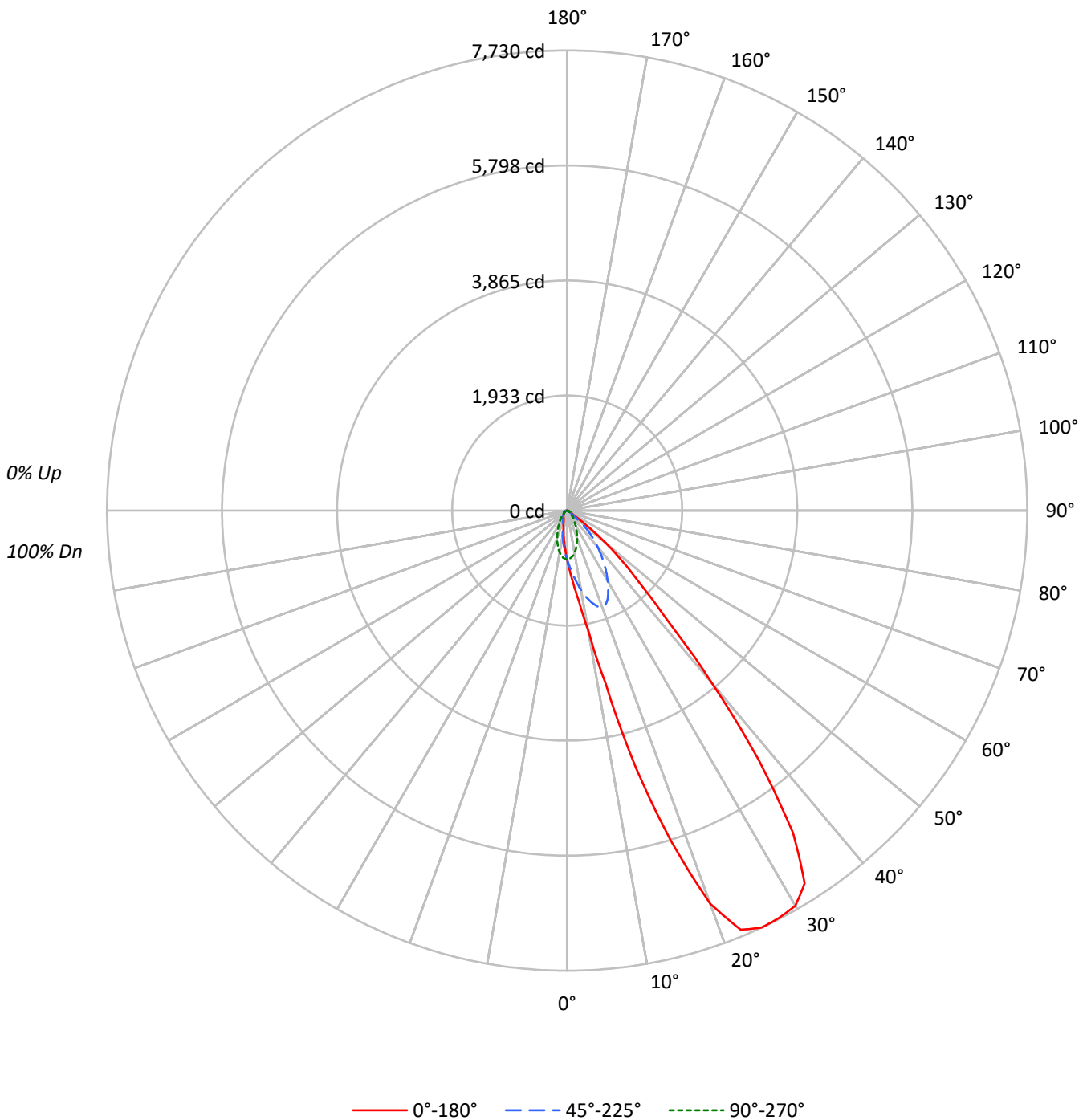
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P130078

CATALOG NUMBER: HL618TAT - HLM6940 - HL6NFL - 456W

Luminous Intensity Polar Plot





TEST NUMBER: P130078

CATALOG NUMBER: HL618TAT - HLM6940 - HL6NFL - 456W

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	112	109	106	103	110	107	104	101	103	100	98	99	97	95	95	94	93					91				
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84					82				
3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	82	78	75					74				
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68					66				
5	86	76	69	64	84	75	69	64	73	67	63	71	66	62	70	65	62					60				
6	81	70	63	58	79	69	62	57	67	61	57	66	61	57	65	60	56					54				
7	76	65	57	52	74	64	57	52	62	56	52	61	56	51	60	55	51					50				
8	71	60	52	48	70	59	52	47	58	52	47	57	51	47	56	51	47					45				
9	67	55	48	43	65	55	48	43	54	48	43	53	47	43	52	47	43					41				
10	63	51	44	40	62	51	44	40	50	44	40	49	43	40	48	43	39					38				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	49006	49006	49006
5°	72389	46348	31568
10°	118629	41594	20149
15°	258585	34977	13476
20°	407188	28352	10043
25°	452963	21840	8227
30°	458171	16636	7332
35°	406411	12681	6592
40°	241625	9697	5785
45°	114466	6689	5115
50°	58898	5240	4739
55°	11927	4451	4624
60°	5404	3761	4922
65°	3824	3185	4984
70°	2260	2734	4761
75°	1227	2594	4365
80°	974	2098	3716
85°	594	1408	2409



TEST NUMBER: P130078

CATALOG NUMBER: HL618TAT - HLM6940 - HL6NFL - 456W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	82.2	3.6
10°-20°	345.8	15.0
20°-30°	718.3	31.2
30°-40°	682.9	29.6
40°-50°	315.2	13.7
50°-60°	85.2	3.7
60°-70°	41.8	1.8
70°-80°	24.9	1.1
80°-90°	9.2	0.4
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°	1146.3	49.7
0°-40°	1829.2	79.3
0°-60°	2229.6	96.7
0°-90°	2305.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2305.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	821	821	821	821	821	
5°	1236	1073	792	610	539	143
15°	4482	1600	606	292	234	1340
25°	7730	1618	373	166	140	3525
35°	6615	1071	206	119	107	3886
45°	1716	543	100	78	77	1471
55°	158	74	59	58	61	242
65°	42	37	35	48	55	42
75°	11	14	22	33	38	13
85°	4	5	8	13	14	4
90°	0	0	0	0	0	



TEST NUMBER: P130078

CATALOG NUMBER: HL618TAT - HLM6940 - HL6NFL - 456W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0
2.5°	1009.7	975.5	986.1	987.3	969.6	977.9	964.9	957.8	937.8	940.1	921.2
5°	1236.2	1194.9	1206.7	1198.4	1170.1	1167.8	1137.1	1120.6	1088.7	1073.4	1030.9
7.5°	1558.2	1502.8	1511.0	1492.2	1434.4	1407.2	1343.5	1311.7	1240.9	1210.2	1145.4
10°	2048.9	1964.0	1966.3	1910.9	1808.3	1731.6	1620.7	1539.3	1421.4	1354.1	1251.5
12.5°	2972.5	2773.2	2683.5	2542.0	2346.2	2155.1	1965.2	1803.6	1617.2	1488.6	1343.5
15°	4482.4	4123.8	3998.7	3642.5	3212.0	2769.6	2365.0	2071.3	1802.4	1599.5	1413.1
17.5°	5840.0	5533.3	5384.7	4975.4	4339.6	3640.1	2889.9	2370.9	1954.5	1688.0	1449.7
20°	7030.2	6793.1	6514.7	5991.0	5230.2	4449.3	3384.2	2605.7	2056.0	1724.5	1447.3
22.5°	7621.2	7487.9	7276.7	6733.0	5853.0	4925.9	3712.1	2715.4	2071.3	1700.9	1401.3
25°	7729.7	7669.5	7553.9	7056.2	6130.2	5075.7	3749.8	2724.8	1999.4	1618.4	1322.3
27.5°	7713.2	7667.2	7570.5	7047.9	6046.5	4902.3	3541.1	2483.0	1869.6	1495.7	1224.4
30°	7667.2	7614.1	7426.6	6758.9	5653.7	4458.8	3082.2	2211.7	1691.5	1357.7	1118.2
32.5°	7425.4	7348.7	6986.6	6112.5	4976.6	3740.4	2544.3	1906.2	1482.7	1219.7	1007.3
35°	6615.0	6685.8	5987.5	5109.9	4014.1	2915.9	2065.4	1621.9	1279.8	1071.0	891.8
37.5°	5289.2	5203.1	4766.6	3950.4	2945.4	2228.2	1712.7	1375.4	1115.9	936.6	773.8
40°	3792.3	3804.1	3361.8	2715.4	2129.1	1744.6	1396.6	1151.3	951.9	795.0	651.1
42.5°	2453.5	2426.4	2201.1	1906.2	1638.4	1371.8	1130.0	963.7	792.7	665.3	546.1
45°	1716.3	1693.9	1600.7	1420.2	1248.0	1095.8	924.8	797.4	652.3	542.6	436.4
47.5°	1264.5	1259.8	1193.7	1089.9	969.6	848.1	727.8	620.5	493.1	392.8	304.3
50°	835.1	831.6	792.7	717.2	634.6	550.9	460.0	369.2	286.6	225.3	169.9
52.5°	416.4	401.1	395.2	348.0	311.4	261.9	217.0	165.1	134.5	110.9	93.2
55°	158.1	164.0	154.5	138.0	125.0	109.7	99.1	87.3	79.0	74.3	70.8
57.5°	83.7	86.1	83.7	80.2	76.7	74.3	70.8	68.4	64.9	63.7	61.3
60°	66.1	66.1	66.1	63.7	63.7	61.3	59.0	57.8	55.4	54.3	51.9
62.5°	51.9	51.9	53.1	51.9	50.7	50.7	48.4	48.4	46.0	44.8	43.6
65°	42.5	41.3	42.5	41.3	41.3	40.1	38.9	38.9	36.6	36.6	35.4
67.5°	31.8	30.7	31.8	31.8	30.7	31.8	29.5	29.5	28.3	29.5	28.3
70°	22.4	23.6	23.6	23.6	23.6	23.6	22.4	22.4	22.4	22.4	22.4
72.5°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
75°	10.6	10.6	10.6	11.8	11.8	11.8	11.8	13.0	13.0	14.2	14.2
77.5°	8.3	8.3	8.3	9.4	9.4	9.4	10.6	10.6	10.6	11.8	11.8
80°	7.1	7.1	7.1	7.1	7.1	8.3	8.3	8.3	9.4	9.4	10.6
82.5°	4.7	4.7	4.7	5.9	5.9	5.9	5.9	7.1	7.1	7.1	7.1
85°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.7	4.7	4.7	4.7
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	2.4	2.4	2.4	2.4	2.4
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: P130078

CATALOG NUMBER: HL618TAT - HLM6940 - HL6NFL - 456W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0
2.5°	898.8	894.1	883.5	877.6	856.4	852.8	826.9	812.7	798.6	785.6	773.8
5°	990.8	972.0	944.8	920.1	885.9	862.3	822.2	791.5	763.2	740.8	716.0
7.5°	1082.8	1022.7	992.0	949.6	896.5	857.5	803.3	762.0	720.7	687.7	652.3
10°	1153.6	1087.6	999.1	960.2	891.8	838.7	771.4	718.4	666.5	627.5	586.2
12.5°	1212.6	1115.9	1033.3	955.4	871.7	802.1	727.8	667.6	608.7	566.2	519.0
15°	1246.8	1124.1	1021.5	930.7	835.1	758.5	672.4	606.3	548.5	500.1	455.3
17.5°	1251.5	1108.8	992.0	888.2	785.6	701.8	616.9	549.7	487.2	436.4	394.0
20°	1225.6	1072.2	946.0	835.1	725.4	640.5	555.6	489.5	427.0	378.6	338.5
22.5°	1171.3	1016.8	885.9	771.4	666.5	575.6	495.4	429.4	371.6	329.1	291.4
25°	1101.7	946.0	816.3	701.8	599.2	513.1	434.1	372.7	320.8	284.3	252.4
27.5°	1018.0	867.0	738.4	629.9	523.7	449.4	375.1	323.2	284.3	246.5	219.4
30°	928.3	780.9	659.4	553.2	458.9	389.3	324.4	278.4	241.8	213.5	195.8
32.5°	830.4	691.2	581.5	484.8	397.5	331.5	278.4	239.5	211.1	188.7	174.6
35°	734.9	600.4	500.1	412.8	338.5	281.9	238.3	206.4	182.8	166.3	153.3
37.5°	632.2	514.3	427.0	346.8	284.3	241.8	202.9	178.1	160.4	146.3	136.8
40°	530.8	430.5	351.5	287.8	239.5	202.9	174.6	152.2	138.0	127.4	118.0
42.5°	434.1	356.2	287.8	234.7	195.8	166.3	142.7	125.0	114.4	106.2	100.3
45°	348.0	276.0	219.4	178.1	149.8	127.4	110.9	100.3	94.4	90.8	88.5
47.5°	234.7	184.0	151.0	121.5	106.2	95.5	88.5	84.9	82.6	80.2	77.9
50°	134.5	109.7	96.7	87.3	82.6	80.2	76.7	74.3	73.1	70.8	69.6
52.5°	82.6	79.0	76.7	74.3	72.0	69.6	67.2	64.9	63.7	62.5	62.5
55°	69.6	67.2	66.1	63.7	62.5	60.2	59.0	59.0	57.8	56.6	56.6
57.5°	59.0	57.8	56.6	55.4	54.3	53.1	51.9	51.9	50.7	50.7	50.7
60°	50.7	49.5	48.4	47.2	47.2	47.2	46.0	46.0	46.0	46.0	46.0
62.5°	42.5	41.3	41.3	40.1	40.1	40.1	40.1	40.1	41.3	41.3	41.3
65°	35.4	34.2	34.2	34.2	34.2	35.4	35.4	35.4	35.4	36.6	37.7
67.5°	28.3	28.3	28.3	28.3	28.3	29.5	29.5	30.7	31.8	33.0	35.4
70°	22.4	22.4	23.6	23.6	24.8	26.0	26.0	27.1	29.5	30.7	31.8
72.5°	17.7	17.7	20.1	20.1	21.2	22.4	23.6	24.8	26.0	27.1	29.5
75°	15.3	15.3	16.5	17.7	18.9	20.1	21.2	22.4	23.6	24.8	26.0
77.5°	13.0	14.2	14.2	15.3	16.5	16.5	17.7	18.9	20.1	21.2	21.2
80°	10.6	10.6	11.8	13.0	13.0	14.2	14.2	15.3	16.5	16.5	17.7
82.5°	8.3	8.3	9.4	9.4	9.4	10.6	10.6	11.8	11.8	13.0	14.2
85°	5.9	5.9	5.9	7.1	7.1	7.1	7.1	8.3	8.3	9.4	9.4
87.5°	2.4	3.5	3.5	3.5	3.5	4.7	4.7	4.7	4.7	4.7	5.9
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: P130078

CATALOG NUMBER: HL618TAT - HLM6940 - HL6NFL - 456W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0
2.5°	766.7	743.1	751.4	726.6	730.2	719.5	711.3	706.6	697.1	680.6	683.0
5°	694.8	664.1	666.5	629.9	621.6	609.8	591.0	583.9	575.6	561.5	552.0
7.5°	628.7	586.2	580.3	546.1	528.4	515.5	490.7	480.1	462.4	454.1	443.5
10°	553.2	510.8	499.0	458.9	442.3	425.8	401.1	389.3	376.3	364.5	356.2
12.5°	484.8	441.2	422.3	386.9	370.4	352.7	327.9	320.8	307.9	298.4	290.2
15°	419.9	377.5	356.2	325.6	311.4	292.5	278.4	267.8	256.0	246.5	240.6
17.5°	360.9	322.0	306.7	277.2	263.0	246.5	234.7	224.1	215.9	208.8	202.9
20°	309.0	274.8	260.7	235.9	224.1	213.5	200.5	194.6	192.3	181.7	176.9
22.5°	265.4	237.1	225.3	205.2	195.8	187.6	176.9	171.0	166.3	160.4	156.9
25°	230.0	206.4	198.2	180.5	174.6	166.3	159.2	154.5	149.8	146.3	142.7
27.5°	202.9	182.8	175.8	161.6	156.9	151.0	145.1	141.5	138.0	134.5	132.1
30°	180.5	164.0	159.2	147.4	143.9	139.2	134.5	132.1	129.8	126.2	123.9
32.5°	161.6	147.4	143.9	135.7	133.3	129.8	126.2	123.9	120.3	118.0	115.6
35°	143.9	134.5	132.1	123.9	122.7	119.1	115.6	113.2	110.9	108.5	107.3
37.5°	128.6	120.3	119.1	112.1	109.7	107.3	103.8	102.6	101.4	100.3	99.1
40°	112.1	105.0	103.8	97.9	97.9	96.7	94.4	93.2	92.0	92.0	89.6
42.5°	94.4	92.0	92.0	88.5	88.5	87.3	84.9	84.9	82.6	82.6	81.4
45°	86.1	82.6	82.6	79.0	79.0	77.9	76.7	76.7	76.7	76.7	75.5
47.5°	76.7	73.1	74.3	72.0	72.0	72.0	72.0	72.0	70.8	70.8	70.8
50°	68.4	66.1	68.4	66.1	67.2	67.2	66.1	67.2	67.2	66.1	66.1
52.5°	62.5	61.3	62.5	61.3	62.5	62.5	61.3	62.5	62.5	62.5	62.5
55°	56.6	55.4	57.8	56.6	57.8	57.8	57.8	59.0	59.0	60.2	59.0
57.5°	51.9	50.7	53.1	51.9	53.1	54.3	54.3	55.4	56.6	57.8	57.8
60°	47.2	47.2	48.4	48.4	50.7	51.9	53.1	54.3	55.4	57.8	57.8
62.5°	42.5	43.6	46.0	44.8	48.4	50.7	51.9	53.1	54.3	55.4	55.4
65°	40.1	40.1	43.6	44.8	47.2	48.4	49.5	50.7	51.9	53.1	53.1
67.5°	37.7	37.7	41.3	41.3	44.8	44.8	46.0	48.4	48.4	49.5	49.5
70°	34.2	35.4	37.7	38.9	40.1	41.3	42.5	43.6	44.8	46.0	46.0
72.5°	30.7	31.8	34.2	34.2	36.6	37.7	38.9	40.1	40.1	41.3	41.3
75°	27.1	27.1	29.5	30.7	31.8	33.0	34.2	35.4	35.4	36.6	36.6
77.5°	22.4	23.6	24.8	26.0	27.1	28.3	29.5	30.7	30.7	31.8	31.8
80°	18.9	18.9	20.1	21.2	22.4	23.6	23.6	24.8	24.8	26.0	26.0
82.5°	14.2	15.3	15.3	16.5	17.7	17.7	18.9	18.9	20.1	20.1	20.1
85°	10.6	10.6	10.6	11.8	11.8	13.0	13.0	13.0	14.2	14.2	14.2
87.5°	5.9	5.9	5.9	7.1	7.1	7.1	7.1	7.1	8.3	8.3	8.3
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: P130078

CATALOG NUMBER: HL618TAT - HLM6940 - HL6NFL - 456W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	821.0	821.0	821.0	821.0
2.5°	684.1	675.9	685.3	675.9
5°	552.0	539.1	548.5	539.1
7.5°	444.7	435.3	434.1	430.5
10°	353.9	344.4	343.3	348.0
12.5°	289.0	280.7	280.7	281.9
15°	238.3	231.2	233.6	233.6
17.5°	201.7	200.5	198.2	198.2
20°	178.1	172.2	172.2	173.4
22.5°	158.1	153.3	153.3	154.5
25°	145.1	139.2	140.4	140.4
27.5°	132.1	129.8	130.9	130.9
30°	123.9	121.5	122.7	122.7
32.5°	116.8	113.2	114.4	115.6
35°	108.5	106.2	107.3	107.3
37.5°	100.3	97.9	99.1	100.3
40°	90.8	89.6	89.6	90.8
42.5°	81.4	80.2	81.4	82.6
45°	76.7	75.5	75.5	76.7
47.5°	72.0	70.8	70.8	72.0
50°	67.2	66.1	67.2	67.2
52.5°	62.5	62.5	62.5	63.7
55°	60.2	60.2	61.3	61.3
57.5°	60.2	60.2	60.2	61.3
60°	59.0	59.0	60.2	60.2
62.5°	56.6	57.8	57.8	57.8
65°	54.3	53.1	55.4	55.4
67.5°	50.7	50.7	50.7	51.9
70°	47.2	47.2	47.2	47.2
72.5°	42.5	42.5	42.5	42.5
75°	37.7	37.7	37.7	37.7
77.5°	31.8	31.8	31.8	33.0
80°	26.0	26.0	26.0	27.1
82.5°	20.1	20.1	20.1	20.1
85°	14.2	14.2	14.2	14.2
87.5°	8.3	8.3	8.3	8.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)