

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: P130054

Luminaire Tested: **HL618TAT - HLM6940 - HL6FL - 73PS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P130054  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33459)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HL618TAT - HLM6940 - HL6FL - 73PS  
Description: HALO ALLSLOPE 6" 30W, Fresnel Glass Lens, White Polymer Trim Ring  
"Dead Front", Wet Location - Showerlight using 40 Degree Optic at a 6-12  
Pitch  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

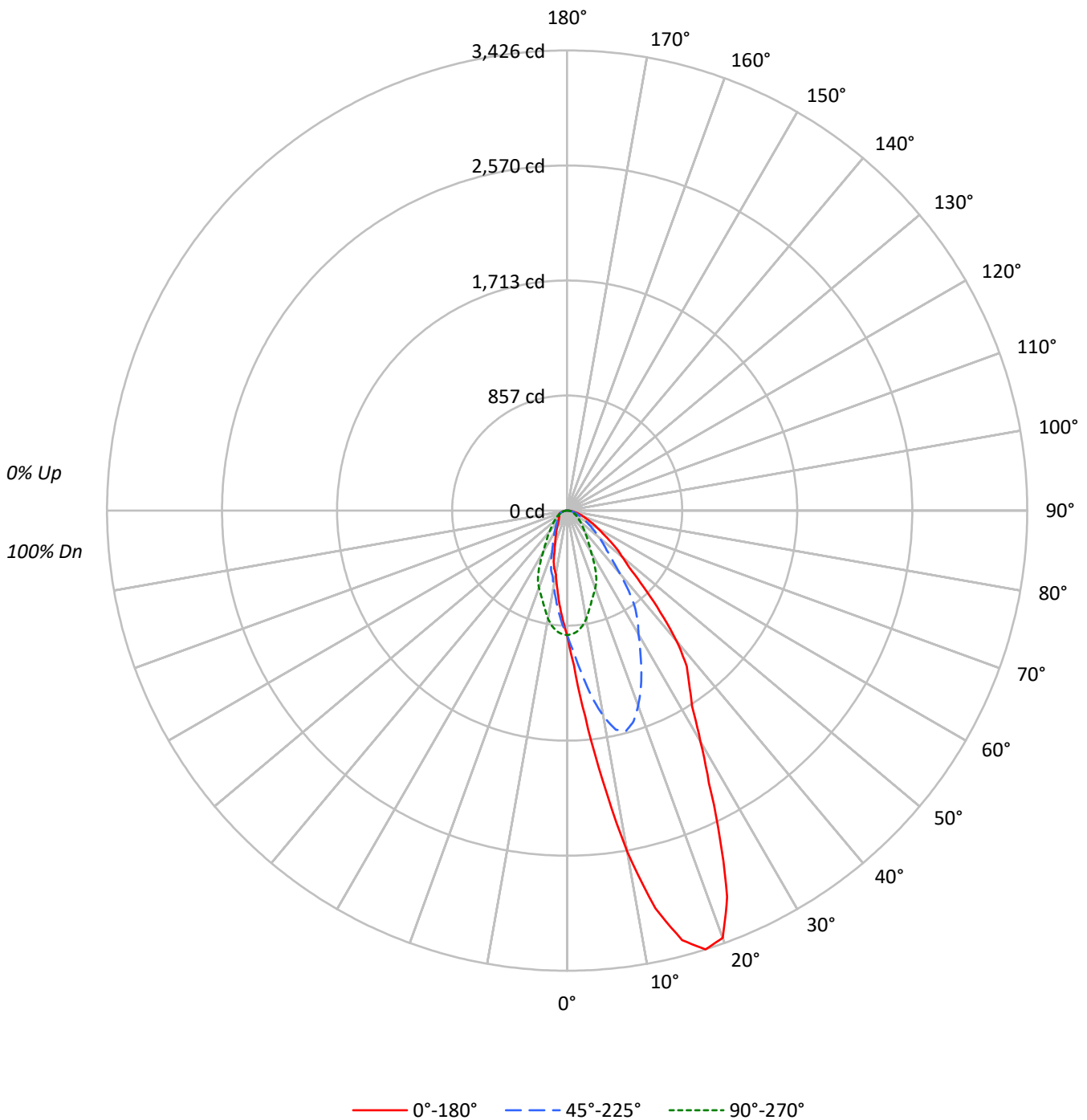
Lumens per Lamp: N/A  
Luminaire Lumens: 1689.0 lumens  
Efficiency: N/A  
Efficacy: 61.2 lumens/watt  
Spacing Criteria (0/90/45): 1.41 / 0.8 / 1.07  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct  
  
Input Watts (W): 27.6  
Input Voltage (V): NR  
Input Current (Ain): 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



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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	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89					89			
2	103	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	80	79					79			
3	96	88	81	76	94	86	80	76	84	79	74	81	77	73	79	75	72	70					70			
4	90	80	73	68	88	79	72	67	77	71	66	74	70	65	72	68	65	63					63			
5	84	74	66	61	82	72	66	60	71	64	60	69	63	59	67	62	59	57					57			
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	53	52					52			
7	74	63	55	50	73	62	55	50	60	54	50	59	53	49	58	53	49	47					47			
8	70	58	51	46	68	58	51	46	56	50	46	55	49	45	54	49	45	43					43			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	45	42	40					40			
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39	37					37			

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

	0°	90°	180°
0°	55369	55369	55369
5°	90055	52754	39995
10°	149477	47326	27977
15°	190991	40376	22285
20°	196105	35487	15082
25°	157817	29664	11638
30°	118600	21417	9191
35°	97385	16367	7366
40°	80937	13036	6250
45°	53462	10658	5816
50°	37577	8879	5466
55°	28501	7582	5847
60°	21583	6728	5641
65°	16456	5884	5776
70°	12700	4882	5498
75°	10097	4203	4771
80°	6979	3483	3647
85°	4937	2256	2460



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.6	5.8
10°-20°	327.7	19.4
20°-30°	400.0	23.7
30°-40°	332.9	19.7
40°-50°	223.2	13.2
50°-60°	143.9	8.5
60°-70°	92.1	5.5
70°-80°	52.1	3.1
80°-90°	18.4	1.1
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°	826.4	48.9
0°-40°	1159.3	68.6
0°-60°	1526.4	90.4
0°-90°	1689.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1689.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	928	928	928	928	928	
5°	1538	1212	901	748	683	179
15°	3311	1698	700	459	386	915
25°	2693	1308	506	243	199	1227
35°	1585	879	266	148	120	998
45°	802	417	160	100	87	642
55°	378	226	100	78	78	346
65°	183	118	65	64	64	185
75°	87	57	36	40	41	91
85°	29	21	13	14	14	32
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°	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6
2.5°	1152.8	1129.8	1132.2	1134.7	1105.6	1104.4	1093.5	1091.1	1063.2	1045.0	1043.8
5°	1537.9	1484.6	1487.0	1464.0	1426.5	1392.6	1353.8	1319.9	1261.8	1212.2	1179.5
7.5°	2021.1	1939.9	1959.3	1912.1	1821.3	1759.5	1672.3	1591.2	1485.8	1395.0	1310.2
10°	2581.7	2490.9	2492.1	2425.5	2281.4	2155.5	2019.9	1891.5	1701.4	1554.8	1421.6
12.5°	3032.2	2968.0	2942.6	2860.2	2672.5	2547.8	2352.9	2132.5	1891.5	1672.3	1494.3
15°	3310.7	3235.6	3218.7	3126.7	2935.3	2770.6	2529.7	2259.6	1969.0	1697.7	1490.7
17.5°	3425.8	3350.7	3332.5	3221.1	3000.7	2807.0	2523.6	2224.5	1916.9	1645.7	1436.2
20°	3385.8	3258.6	3258.6	3113.3	2849.3	2630.2	2360.1	2065.9	1789.8	1545.2	1365.9
22.5°	3112.1	3034.6	2986.2	2831.2	2576.9	2386.8	2116.7	1877.0	1644.5	1433.8	1275.1
25°	2693.1	2613.2	2575.7	2447.3	2218.4	2076.8	1867.3	1660.2	1483.4	1307.8	1169.8
27.5°	2285.0	2218.4	2199.1	2101.0	1932.7	1805.5	1642.0	1479.8	1327.2	1178.2	1064.4
30°	1984.7	1924.2	1912.1	1827.3	1686.8	1548.8	1448.3	1316.3	1192.8	1063.2	967.5
32.5°	1730.4	1692.9	1673.5	1596.0	1485.8	1407.1	1306.6	1196.4	1091.1	976.0	886.4
35°	1585.1	1541.5	1524.6	1461.6	1357.5	1287.2	1196.4	1095.9	990.6	879.1	788.3
37.5°	1461.6	1421.6	1401.1	1342.9	1243.6	1163.7	1072.9	968.8	861.0	752.0	667.2
40°	1270.3	1230.3	1221.8	1161.3	1070.5	995.4	910.6	807.7	703.6	607.9	540.1
42.5°	1026.9	1001.4	993.0	954.2	864.6	802.9	721.7	639.4	570.4	494.1	439.6
45°	801.6	777.4	761.7	729.0	668.4	637.0	572.8	515.9	466.2	416.6	381.4
47.5°	626.1	617.6	616.4	589.7	547.3	523.1	478.3	438.4	399.6	360.9	330.6
50°	532.8	517.1	515.9	503.8	472.3	452.9	414.1	379.0	350.0	316.1	287.0
52.5°	465.0	452.9	446.8	428.7	396.0	382.7	350.0	323.3	297.9	268.8	247.0
55°	377.8	371.8	366.9	354.8	329.4	314.8	294.3	270.0	249.5	226.4	209.5
57.5°	312.4	305.2	303.9	295.5	276.1	266.4	249.5	227.7	211.9	192.5	178.0
60°	264.0	257.9	254.3	247.0	231.3	224.0	210.7	192.5	180.4	162.3	152.6
62.5°	220.4	215.5	211.9	205.9	195.0	187.7	178.0	164.7	152.6	139.3	129.6
65°	182.9	179.2	176.8	172.0	162.3	157.4	148.9	139.3	128.4	117.5	110.2
67.5°	151.4	150.2	148.9	142.9	135.6	133.2	124.7	116.3	109.0	99.3	92.0
70°	125.9	124.7	123.5	119.9	113.8	110.2	104.1	96.9	90.8	82.3	77.5
72.5°	101.7	101.7	100.5	98.1	92.0	89.6	83.6	78.7	73.9	67.8	64.2
75°	87.2	86.0	84.8	81.1	77.5	75.1	71.4	66.6	61.8	56.9	53.3
77.5°	67.8	66.6	66.6	65.4	61.8	60.5	56.9	53.3	50.9	48.4	46.0
80°	50.9	49.6	49.6	48.4	46.0	44.8	43.6	40.0	38.8	35.1	33.9
82.5°	43.6	42.4	41.2	40.0	37.5	37.5	33.9	31.5	29.1	26.6	25.4
85°	29.1	27.9	27.9	27.9	26.6	26.6	24.2	23.0	23.0	20.6	19.4
87.5°	18.2	17.0	17.0	17.0	15.7	15.7	15.7	13.3	13.3	12.1	12.1
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°	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6
2.5°	1029.3	1014.8	1001.4	986.9	965.1	963.9	937.3	919.1	900.9	909.4	884.0
5°	1143.1	1104.4	1069.3	1035.4	996.6	976.0	933.6	900.9	871.9	869.5	836.8
7.5°	1230.3	1162.5	1106.8	1055.9	999.0	967.5	913.1	867.0	828.3	813.8	772.6
10°	1298.1	1197.6	1116.5	1048.7	978.4	933.6	864.6	817.4	768.9	748.4	703.6
12.5°	1328.4	1198.8	1103.2	1029.3	939.7	886.4	817.4	755.6	706.0	684.2	644.2
15°	1316.3	1175.8	1076.5	989.3	898.5	831.9	756.8	699.9	664.8	630.9	588.5
17.5°	1272.7	1133.4	1031.7	938.5	846.4	782.3	710.8	653.9	607.9	582.5	541.3
20°	1207.3	1082.6	978.4	887.6	795.6	736.3	662.4	612.7	566.7	537.7	489.2
22.5°	1132.2	1009.9	913.1	828.3	741.1	685.4	622.4	569.1	515.9	488.0	434.7
25°	1032.9	931.2	841.6	764.1	685.4	632.1	560.7	506.2	446.8	414.1	364.5
27.5°	949.4	853.7	775.0	703.6	621.2	561.9	488.0	429.9	376.6	345.1	306.4
30°	870.7	782.3	693.9	623.6	538.9	474.7	411.7	358.4	314.8	294.3	267.6
32.5°	796.8	695.1	613.9	535.2	455.3	393.6	343.9	306.4	274.9	259.1	236.1
35°	689.0	589.7	518.3	440.8	374.2	335.4	295.5	266.4	241.0	226.4	207.1
37.5°	567.9	486.8	414.1	363.3	318.5	291.8	257.9	232.5	210.7	199.8	184.1
40°	456.5	396.0	348.8	314.8	279.7	254.3	224.0	204.6	187.7	176.8	163.5
42.5°	387.5	345.1	303.9	274.9	243.4	222.8	198.6	179.2	164.7	156.2	144.1
45°	339.1	305.2	270.0	243.4	215.5	197.4	175.6	159.8	147.7	139.3	129.6
47.5°	295.5	265.2	239.8	214.3	190.1	175.6	156.2	141.7	129.6	124.7	115.0
50°	259.1	231.3	207.1	186.5	167.1	153.8	138.0	125.9	117.5	113.8	106.6
52.5°	222.8	199.8	179.2	163.5	146.5	135.6	122.3	112.6	106.6	102.9	98.1
55°	187.7	170.7	153.8	140.5	127.1	119.9	109.0	100.5	95.7	94.5	88.4
57.5°	161.1	145.3	134.4	122.3	112.6	105.4	96.9	92.0	87.2	86.0	82.3
60°	138.0	124.7	115.0	106.6	98.1	93.2	87.2	82.3	77.5	77.5	75.1
62.5°	117.5	106.6	99.3	92.0	84.8	81.1	76.3	72.7	70.2	70.2	69.0
65°	101.7	90.8	84.8	79.9	75.1	72.7	67.8	65.4	63.0	63.0	61.8
67.5°	86.0	77.5	72.7	69.0	64.2	61.8	58.1	56.9	55.7	54.5	53.3
70°	72.7	66.6	61.8	58.1	54.5	53.3	49.6	48.4	47.2	48.4	47.2
72.5°	60.5	55.7	52.1	49.6	47.2	46.0	43.6	42.4	41.2	41.2	41.2
75°	49.6	46.0	43.6	41.2	40.0	38.8	37.5	36.3	35.1	36.3	35.1
77.5°	42.4	38.8	36.3	35.1	33.9	32.7	31.5	31.5	30.3	30.3	30.3
80°	32.7	30.3	29.1	26.6	26.6	25.4	25.4	25.4	24.2	25.4	25.4
82.5°	24.2	21.8	20.6	20.6	19.4	19.4	19.4	19.4	18.2	19.4	19.4
85°	18.2	17.0	15.7	14.5	14.5	14.5	14.5	13.3	13.3	13.3	13.3
87.5°	10.9	9.7	8.5	8.5	7.3	8.5	7.3	7.3	7.3	7.3	7.3
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°	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6	927.6
2.5°	868.2	861.0	861.0	833.1	828.3	845.2	825.9	811.3	819.8	808.9	813.8
5°	812.5	798.0	787.1	759.3	749.6	748.4	729.0	707.2	707.2	701.1	699.9
7.5°	741.1	719.3	702.3	673.3	660.0	655.1	633.3	610.3	607.9	597.0	593.4
10°	666.0	646.6	623.6	594.6	580.0	569.1	542.5	525.5	517.1	506.2	501.3
12.5°	600.6	581.3	558.2	523.1	507.4	501.3	479.5	467.4	465.0	457.7	455.3
15°	551.0	523.1	502.5	474.7	462.6	458.9	438.4	425.0	419.0	409.3	399.6
17.5°	505.0	475.9	457.7	429.9	414.1	399.6	374.2	356.0	340.3	335.4	327.0
20°	455.3	423.8	394.8	364.5	342.7	328.2	303.9	290.6	287.0	278.5	272.5
22.5°	382.7	360.9	329.4	302.7	285.8	278.5	264.0	253.1	249.5	242.2	238.6
25°	327.0	300.3	280.9	264.0	249.5	243.4	230.1	221.6	218.0	211.9	209.5
27.5°	280.9	261.6	247.0	231.3	219.2	214.3	203.4	195.0	191.3	185.3	182.9
30°	244.6	230.1	218.0	202.2	193.8	187.7	179.2	170.7	168.3	164.7	161.1
32.5°	216.8	204.6	192.5	179.2	170.7	165.9	158.6	151.4	148.9	145.3	142.9
35°	192.5	180.4	170.7	156.2	151.4	147.7	140.5	133.2	132.0	128.4	125.9
37.5°	169.5	161.1	151.4	140.5	134.4	132.0	125.9	119.9	118.7	115.0	113.8
40°	150.2	142.9	135.6	123.5	121.1	119.9	113.8	107.8	107.8	105.4	104.1
42.5°	133.2	128.4	121.1	115.0	110.2	109.0	104.1	100.5	100.5	98.1	96.9
45°	119.9	116.3	111.4	105.4	101.7	100.5	96.9	93.2	93.2	92.0	92.0
47.5°	110.2	105.4	101.7	96.9	93.2	93.2	89.6	87.2	87.2	86.0	86.0
50°	100.5	98.1	94.5	90.8	87.2	87.2	83.6	81.1	82.3	82.3	81.1
52.5°	92.0	90.8	88.4	84.8	82.3	82.3	79.9	77.5	78.7	77.5	77.5
55°	84.8	84.8	82.3	79.9	77.5	77.5	75.1	73.9	75.1	76.3	76.3
57.5°	79.9	78.7	77.5	75.1	75.1	75.1	73.9	72.7	73.9	73.9	73.9
60°	72.7	73.9	72.7	71.4	70.2	71.4	70.2	67.8	69.0	69.0	70.2
62.5°	66.6	67.8	67.8	67.8	67.8	67.8	67.8	66.6	69.0	70.2	70.2
65°	60.5	61.8	61.8	61.8	61.8	64.2	63.0	61.8	63.0	64.2	64.2
67.5°	53.3	54.5	54.5	54.5	54.5	55.7	55.7	54.5	55.7	56.9	58.1
70°	46.0	48.4	48.4	48.4	49.6	50.9	50.9	49.6	52.1	53.3	55.7
72.5°	40.0	41.2	42.4	42.4	43.6	46.0	46.0	46.0	47.2	47.2	47.2
75°	35.1	36.3	36.3	37.5	37.5	40.0	40.0	40.0	41.2	41.2	41.2
77.5°	30.3	30.3	31.5	31.5	32.7	33.9	33.9	33.9	35.1	35.1	35.1
80°	24.2	25.4	25.4	26.6	26.6	26.6	26.6	26.6	27.9	27.9	29.1
82.5°	18.2	19.4	19.4	20.6	20.6	20.6	20.6	20.6	21.8	21.8	21.8
85°	13.3	13.3	13.3	14.5	13.3	14.5	14.5	14.5	14.5	14.5	14.5
87.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.1	7.3	6.1
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: P130054

CATALOG NUMBER: HL618TAT - HLM6940 - HL6FL - 73PS

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	927.6	927.6	927.6	927.6
2.5°	811.3	804.1	798.0	799.2
5°	696.3	680.5	689.0	683.0
7.5°	590.9	582.5	577.6	572.8
10°	496.5	482.0	485.6	483.2
12.5°	449.3	444.4	444.4	442.0
15°	397.2	389.9	387.5	386.3
17.5°	316.1	311.2	310.0	308.8
20°	270.0	264.0	261.6	260.4
22.5°	234.9	230.1	228.9	226.4
25°	207.1	201.0	201.0	198.6
27.5°	179.2	176.8	175.6	174.4
30°	159.8	156.2	155.0	153.8
32.5°	144.1	138.0	136.8	135.6
35°	123.5	122.3	119.9	119.9
37.5°	112.6	110.2	110.2	109.0
40°	102.9	100.5	99.3	98.1
42.5°	96.9	94.5	93.2	93.2
45°	90.8	89.6	88.4	87.2
47.5°	86.0	84.8	83.6	82.3
50°	81.1	79.9	79.9	77.5
52.5°	78.7	78.7	78.7	77.5
55°	77.5	77.5	78.7	77.5
57.5°	73.9	73.9	72.7	71.4
60°	71.4	71.4	71.4	69.0
62.5°	70.2	69.0	70.2	69.0
65°	64.2	64.2	65.4	64.2
67.5°	60.5	60.5	60.5	59.3
70°	55.7	55.7	54.5	54.5
72.5°	48.4	48.4	48.4	48.4
75°	41.2	41.2	41.2	41.2
77.5°	35.1	33.9	33.9	33.9
80°	27.9	26.6	26.6	26.6
82.5°	21.8	21.8	21.8	20.6
85°	14.5	14.5	14.5	14.5
87.5°	6.1	6.1	6.1	6.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)