

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: P130122

Luminaire Tested: **HL618TAT - HLM6940 - HL6WFL - 456P**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130122
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33490)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6940 - HL6WFL - 456P
Description: HALO ALLSLOPE 6" 30W, Black Coilex Baffle, White Metal Trim Ring using 55 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: 2241.7 lumens
Efficiency: N/A
Efficacy: 81.2 lumens/watt
Spacing Criteria (0/90/45): 1.36 / 0.77 / 1.12
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

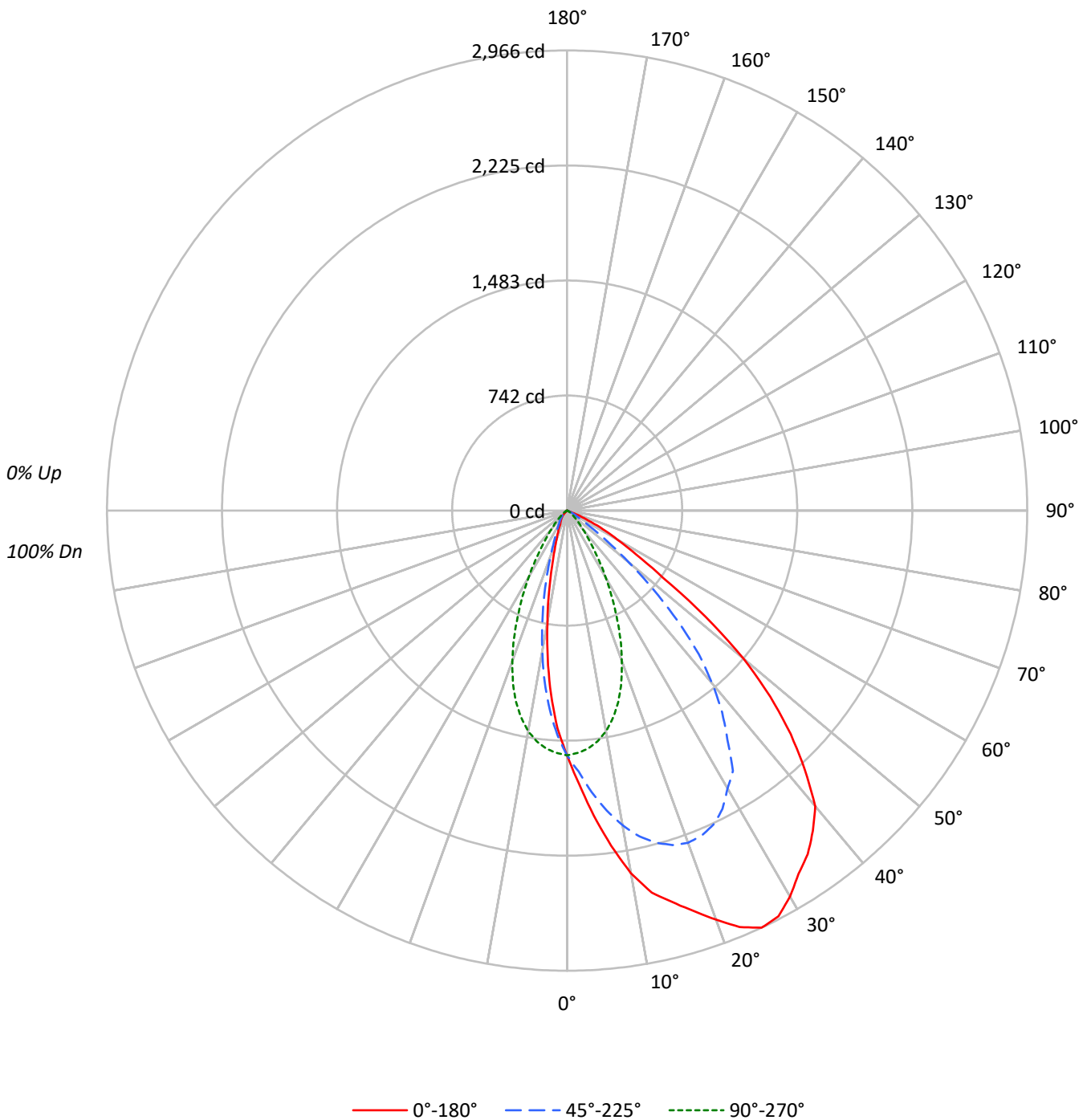
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P130122

CATALOG NUMBER: HL618TAT - HLM6940 - HL6WFL - 456P

Luminous Intensity Polar Plot





TEST NUMBER: P130122

CATALOG NUMBER: HL618TAT - HLM6940 - HL6WFL - 456P

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91
2	105	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74
4	92	83	77	72	90	82	76	71	80	74	70	78	73	69	76	72	69	67
5	86	76	69	64	85	75	69	64	73	68	63	72	67	63	70	66	62	60
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	57	55
7	76	65	58	53	74	64	57	53	63	57	52	61	56	52	60	55	52	50
8	71	60	53	48	70	60	53	48	58	52	48	57	52	48	56	51	47	46
9	67	56	49	44	66	55	49	44	54	48	44	53	48	44	52	47	44	42
10	63	52	45	41	62	52	45	41	51	45	41	50	44	41	49	44	40	39

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	94180	94180	94180
5°	115510	90190	69718
10°	137428	83588	42376
15°	150666	73525	21979
20°	162523	59739	11688
25°	173832	44138	7126
30°	171647	29580	5020
35°	166079	17633	4006
40°	158503	10303	2956
45°	135908	6102	1674
50°	104473	3801	797
55°	57009	2361	189
60°	30535	1226	204
65°	13640	450	225
70°	2149	252	131
75°	151	289	151
80°	0	343	0
85°	0	424	0



TEST NUMBER: P130122

CATALOG NUMBER: HL618TAT - HLM6940 - HL6WFL - 456P

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.4	6.6
10°-20°	392.1	17.5
20°-30°	538.1	24.0
30°-40°	560.9	25.0
40°-50°	414.2	18.5
50°-60°	155.2	6.9
60°-70°	30.3	1.4
70°-80°	2.4	0.1
80°-90°	1.2	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°	1077.6	48.1
0°-40°	1638.6	73.1
0°-60°	2207.9	98.5
0°-90°	2241.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2241.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1578	1578	1578	1578	1578	
5°	1973	1822	1540	1288	1191	200
15°	2612	2216	1274	572	381	745
25°	2966	2233	753	178	122	1350
35°	2703	1801	287	84	65	1685
45°	2038	1010	92	39	25	1551
55°	756	179	31	8	2	738
65°	152	28	5	2	2	166
75°	1	1	2	1	1	4
85°	0	1	2	1	0	0
90°	0	0	0	0	0	



TEST NUMBER: P130122

CATALOG NUMBER: HL618TAT - HLM6940 - HL6WFL - 456P

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8
2.5°	1763.3	1735.7	1724.5	1745.8	1745.8	1750.8	1740.7	1720.7	1728.2	1683.1	1700.6
5°	1972.6	1950.0	1950.0	1948.8	1937.5	1941.3	1923.7	1886.1	1877.3	1822.2	1826.0
7.5°	2179.4	2155.6	2153.1	2154.3	2124.2	2125.5	2096.7	2041.5	2022.7	1948.8	1935.0
10°	2373.6	2346.1	2344.8	2332.3	2306.0	2293.4	2252.1	2183.1	2156.8	2060.3	2024.0
12.5°	2522.8	2501.5	2485.2	2491.4	2450.1	2440.1	2381.1	2304.7	2262.1	2150.6	2096.7
15°	2611.7	2582.9	2589.2	2581.7	2565.4	2552.8	2496.4	2402.5	2344.8	2215.7	2146.8
17.5°	2704.5	2678.2	2661.9	2650.6	2623.0	2616.8	2572.9	2473.9	2403.7	2260.8	2174.4
20°	2806.0	2777.2	2760.9	2723.3	2683.2	2661.9	2616.8	2520.3	2436.3	2278.4	2171.9
22.5°	2905.0	2864.9	2832.3	2778.4	2727.0	2693.2	2643.1	2541.6	2440.1	2267.1	2144.3
25°	2966.4	2923.8	2868.7	2803.5	2745.8	2708.2	2656.9	2539.1	2423.8	2233.3	2090.4
27.5°	2948.9	2906.3	2856.1	2791.0	2739.6	2705.7	2643.1	2561.6	2377.4	2168.1	2005.2
30°	2872.4	2838.6	2801.0	2749.6	2707.0	2688.2	2592.9	2440.1	2287.2	2067.8	1861.1
32.5°	2775.9	2753.4	2730.8	2693.2	2664.4	2636.8	2507.7	2341.0	2168.1	1988.9	1767.1
35°	2703.2	2656.9	2651.8	2634.3	2598.0	2521.5	2386.2	2215.7	2030.2	1800.9	1621.7
37.5°	2601.7	2580.4	2570.4	2542.8	2466.4	2381.1	2230.8	2046.5	1869.8	1640.5	1452.5
40°	2487.7	2461.4	2438.8	2384.9	2299.7	2205.7	2037.8	1853.5	1678.1	1455.0	1267.0
42.5°	2268.4	2258.3	2210.7	2169.4	2086.6	1982.6	1817.2	1635.5	1458.8	1255.7	1049.0
45°	2037.8	2016.5	1968.8	1930.0	1833.5	1734.5	1585.3	1401.1	1218.1	1010.1	810.8
47.5°	1774.6	1762.1	1733.2	1670.6	1572.8	1472.6	1312.1	1130.4	946.2	753.2	596.5
50°	1481.3	1472.6	1433.7	1371.0	1275.8	1178.0	1008.9	838.4	674.2	518.8	394.8
52.5°	1124.2	1096.6	1069.0	1002.6	923.6	828.4	681.8	548.9	432.4	324.6	228.1
55°	755.7	735.6	703.1	665.5	604.1	523.9	422.3	340.9	266.9	179.2	125.3
57.5°	525.1	508.8	487.5	448.7	401.0	348.4	287.0	218.1	161.7	106.5	79.0
60°	373.5	368.5	353.4	323.3	284.5	239.4	180.5	132.8	92.7	66.4	53.9
62.5°	260.7	254.4	238.1	213.1	178.0	139.1	101.5	71.4	55.1	43.9	36.3
65°	151.6	145.4	134.1	114.0	90.2	68.9	52.6	40.1	33.8	27.6	23.8
67.5°	70.2	63.9	60.2	48.9	41.4	35.1	27.6	21.3	18.8	15.0	12.5
70°	21.3	20.1	20.1	17.5	16.3	13.8	11.3	8.8	8.8	7.5	6.3
72.5°	5.0	5.0	5.0	5.0	5.0	5.0	3.8	3.8	3.8	2.5	2.5
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
80°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
85°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
87.5°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
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: P130122

CATALOG NUMBER: HL618TAT - HLM6940 - HL6WFL - 456P

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8
2.5°	1658.0	1674.3	1654.3	1628.0	1630.5	1604.1	1582.8	1564.0	1559.0	1536.5	1523.9
5°	1783.4	1758.3	1721.9	1678.1	1659.3	1615.4	1577.8	1540.2	1517.7	1478.8	1451.2
7.5°	1876.1	1832.2	1773.3	1709.4	1671.8	1611.7	1556.5	1500.1	1462.5	1406.1	1364.8
10°	1947.5	1883.6	1805.9	1721.9	1666.8	1589.1	1537.7	1443.7	1387.3	1314.6	1258.2
12.5°	2000.2	1916.2	1818.4	1716.9	1644.2	1549.0	1460.0	1367.3	1295.8	1210.6	1129.2
15°	2030.2	1927.5	1808.4	1689.4	1596.6	1491.4	1382.3	1274.5	1181.8	1080.3	992.6
17.5°	2036.5	1911.2	1773.3	1643.0	1535.2	1411.1	1304.6	1161.8	1050.2	938.7	835.9
20°	2016.5	1888.6	1721.9	1579.1	1455.0	1313.4	1195.6	1031.4	911.1	794.6	696.8
22.5°	1972.6	1812.2	1653.0	1495.1	1349.7	1190.6	1037.7	897.3	773.2	655.4	557.7
25°	1896.1	1732.0	1560.3	1389.8	1233.2	1054.0	893.6	753.2	631.6	525.1	429.9
27.5°	1804.7	1626.7	1447.5	1299.6	1085.3	912.4	751.9	620.4	505.1	399.8	325.8
30°	1691.9	1510.1	1318.4	1111.6	929.9	769.5	624.1	495.0	391.0	309.5	249.4
32.5°	1560.3	1359.8	1164.3	960.0	785.8	636.6	495.0	383.5	295.8	236.9	198.0
35°	1408.6	1201.9	995.1	803.3	645.4	498.8	381.0	287.0	230.6	189.2	160.4
37.5°	1240.7	1025.1	823.4	651.7	508.8	381.0	279.5	216.8	175.5	145.4	122.8
40°	1043.9	839.7	661.7	502.5	363.4	266.9	201.8	161.7	134.1	115.3	100.3
42.5°	828.4	652.9	497.5	354.7	246.9	188.0	149.1	122.8	105.3	90.2	80.2
45°	621.6	471.2	338.4	238.1	174.2	135.3	109.0	91.5	79.0	68.9	62.7
47.5°	443.6	312.1	213.1	149.1	115.3	91.5	77.7	66.4	58.9	55.1	50.1
50°	277.0	186.7	124.1	94.0	77.7	65.2	58.9	53.9	47.6	42.6	38.9
52.5°	147.9	102.8	77.7	66.4	58.9	52.6	46.4	41.4	36.3	33.8	28.8
55°	85.2	71.4	58.9	52.6	46.4	40.1	35.1	31.3	28.8	25.1	21.3
57.5°	62.7	53.9	45.1	38.9	35.1	30.1	26.3	23.8	20.1	16.3	13.8
60°	43.9	37.6	33.8	30.1	25.1	21.3	18.8	15.0	12.5	10.0	8.8
62.5°	31.3	26.3	22.6	18.8	16.3	13.8	11.3	8.8	7.5	6.3	5.0
65°	18.8	16.3	13.8	11.3	10.0	7.5	6.3	5.0	3.8	3.8	2.5
67.5°	10.0	8.8	7.5	6.3	5.0	3.8	2.5	2.5	2.5	2.5	2.5
70°	5.0	3.8	3.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
72.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
75°	1.3	1.3	1.3	1.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	1.3	1.3	1.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	1.3	1.3	1.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	1.3	1.3	1.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	1.3	1.3	1.3	1.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5
87.5°	1.3	1.3	1.3	1.3	2.5	2.5	2.5	2.5	2.5	2.5	1.3
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: P130122

CATALOG NUMBER: HL618TAT - HLM6940 - HL6WFL - 456P

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8	1577.8
2.5°	1518.9	1501.4	1497.6	1481.3	1483.8	1446.2	1441.2	1424.9	1428.7	1426.2	1427.4
5°	1404.9	1401.1	1376.1	1347.2	1334.7	1288.3	1272.0	1249.5	1238.2	1226.9	1224.4
7.5°	1322.2	1280.8	1234.4	1196.8	1170.5	1112.9	1077.8	1046.5	1030.2	1015.1	1003.8
10°	1198.1	1140.4	1080.3	1035.2	1003.8	923.6	883.5	838.4	819.6	790.8	780.8
12.5°	1057.7	985.0	922.4	857.2	794.6	738.2	703.1	665.5	629.1	606.6	584.0
15°	899.8	822.1	753.2	688.0	637.9	571.5	532.6	490.0	456.2	431.1	409.8
17.5°	748.2	666.7	601.6	538.9	473.7	424.8	383.5	343.4	323.3	300.8	289.5
20°	602.8	526.4	451.2	386.0	347.1	305.8	269.4	246.9	235.6	221.8	214.3
22.5°	473.7	396.0	338.4	285.7	251.9	225.6	209.3	191.7	183.0	172.9	166.7
25°	355.9	294.5	250.6	223.1	201.8	178.0	164.2	150.4	141.6	135.3	130.3
27.5°	268.2	228.1	196.8	175.5	159.2	141.6	130.3	120.3	114.0	109.0	104.0
30°	213.1	183.0	157.9	142.9	129.1	115.3	106.5	97.8	94.0	91.5	89.0
32.5°	170.4	147.9	127.8	116.6	105.3	95.2	90.2	85.2	82.7	80.2	79.0
35°	136.6	119.1	104.0	95.2	90.2	84.0	79.0	75.2	72.7	71.4	68.9
37.5°	109.0	96.5	89.0	82.7	79.0	72.7	68.9	65.2	62.7	61.4	60.2
40°	89.0	81.5	75.2	70.2	65.2	61.4	56.4	53.9	52.6	50.1	48.9
42.5°	71.4	65.2	60.2	56.4	53.9	50.1	46.4	43.9	41.4	40.1	37.6
45°	57.6	52.6	47.6	45.1	42.6	38.9	35.1	31.3	31.3	28.8	27.6
47.5°	46.4	41.4	37.6	35.1	31.3	28.8	26.3	23.8	22.6	21.3	20.1
50°	33.8	31.3	27.6	26.3	23.8	20.1	18.8	16.3	15.0	13.8	12.5
52.5°	26.3	23.8	20.1	17.5	16.3	13.8	12.5	10.0	8.8	7.5	7.5
55°	18.8	16.3	13.8	11.3	10.0	7.5	6.3	5.0	5.0	3.8	3.8
57.5°	12.5	10.0	8.8	6.3	5.0	5.0	3.8	2.5	2.5	2.5	1.3
60°	7.5	6.3	5.0	3.8	2.5	2.5	2.5	2.5	1.3	1.3	2.5
62.5°	3.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
65°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
67.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.3	1.3	2.5	1.3
70°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	1.3	1.3	1.3	1.3
72.5°	2.5	2.5	2.5	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3
75°	2.5	2.5	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	2.5	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.0
85°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	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: P130122

CATALOG NUMBER: HL618TAT - HLM6940 - HL6WFL - 456P

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1577.8	1577.8	1577.8	1577.8
2.5°	1389.8	1384.8	1401.1	1406.1
5°	1214.4	1176.8	1193.1	1190.6
7.5°	966.2	943.7	963.7	958.7
10°	743.2	721.9	735.6	731.9
12.5°	553.9	537.6	538.9	536.4
15°	388.5	379.7	374.7	381.0
17.5°	269.4	263.2	261.9	266.9
20°	203.0	196.8	196.8	201.8
22.5°	159.2	152.9	152.9	154.1
25°	122.8	121.6	119.1	121.6
27.5°	100.3	96.5	97.8	96.5
30°	85.2	82.7	84.0	84.0
32.5°	75.2	73.9	73.9	73.9
35°	66.4	65.2	65.2	65.2
37.5°	57.6	56.4	56.4	56.4
40°	46.4	45.1	45.1	46.4
42.5°	35.1	35.1	35.1	35.1
45°	26.3	25.1	25.1	25.1
47.5°	18.8	17.5	17.5	17.5
50°	11.3	10.0	10.0	11.3
52.5°	6.3	5.0	5.0	6.3
55°	2.5	2.5	2.5	2.5
57.5°	1.3	1.3	1.3	1.3
60°	1.3	1.3	1.3	2.5
62.5°	1.3	1.3	2.5	2.5
65°	1.3	1.3	2.5	2.5
67.5°	2.5	1.3	1.3	1.3
70°	1.3	1.3	1.3	1.3
72.5°	1.3	1.3	1.3	1.3
75°	1.3	1.3	1.3	1.3
77.5°	0.0	0.0	0.0	1.3
80°	0.0	0.0	0.0	0.0
82.5°	0.0	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)