

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: P130041

Luminaire Tested: **HL618TAT - HLM6940 - HL6FL - 456W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130041
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33452)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6940 - HL6FL - 456W
Description: HALO ALLSLOPE 6" 30W, White Coilex Baffle, White Metal Trim Ring 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: 2310.1 lumens
Efficiency: N/A
Efficacy: 83.7 lumens/watt
Spacing Criteria (0/90/45): 1.64 / 0.67 / 1.09
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

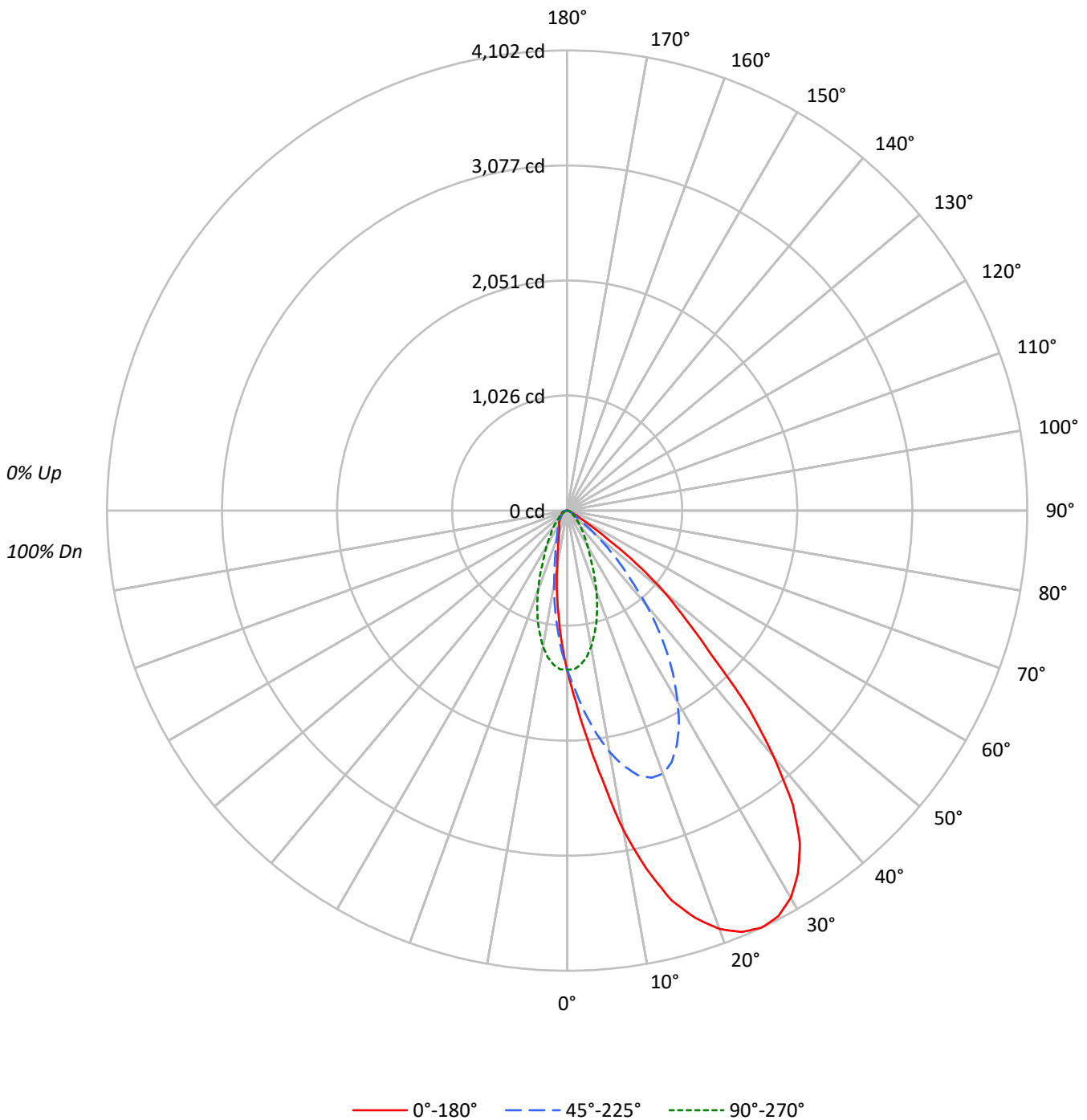
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	84606	84606	84606
5°	119153	80803	53229
10°	167571	71343	29505
15°	207467	58445	17595
20°	229890	43961	12198
25°	240391	30291	9646
30°	238193	21698	8533
35°	222208	15691	7588
40°	182319	11953	6403
45°	120849	8557	5409
50°	80077	6489	4697
55°	32786	5205	4383
60°	10489	4153	4554
65°	6316	3266	4571
70°	3662	2936	4398
75°	1818	2663	3925
80°	1330	2153	3154
85°	814	1442	1849



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.0	5.9
10°-20°	411.3	17.8
20°-30°	603.1	26.1
30°-40°	592.0	25.6
40°-50°	360.9	15.6
50°-60°	124.0	5.4
60°-70°	47.8	2.1
70°-80°	25.3	1.1
80°-90°	8.8	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°	1151.4	49.8
0°-40°	1743.4	75.5
0°-60°	2228.3	96.5
0°-90°	2310.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2310.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1417	1417	1417	1417	1417	
5°	2035	1807	1380	1028	909	220
15°	3596	2442	1013	404	305	1015
25°	4102	2310	517	200	165	1877
35°	3617	1560	255	137	124	2213
45°	1812	663	128	87	81	1460
55°	435	113	69	57	58	455
65°	70	48	36	45	51	73
75°	16	16	23	30	34	19
85°	5	6	8	11	11	5
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°	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4
2.5°	1694.6	1678.9	1680.1	1670.4	1676.5	1687.4	1675.3	1640.2	1618.4	1596.6	1583.3
5°	2034.8	2031.1	2036.0	2005.7	1997.2	1994.8	1956.1	1904.0	1895.6	1807.2	1799.9
7.5°	2425.7	2413.6	2407.6	2353.1	2335.0	2305.9	2245.4	2163.1	2086.8	2006.9	1933.1
10°	2894.2	2856.7	2838.5	2771.9	2727.1	2659.4	2563.7	2423.3	2295.0	2186.1	2068.7
12.5°	3269.4	3242.8	3230.7	3156.9	3103.6	2991.0	2863.9	2672.7	2502.0	2331.3	2176.4
15°	3596.3	3556.3	3533.3	3453.4	3384.4	3276.7	3125.4	2899.0	2665.4	2441.5	2236.9
17.5°	3809.3	3779.0	3753.6	3678.6	3601.1	3475.2	3304.5	3040.7	2771.9	2497.2	2252.7
20°	3969.1	3935.2	3897.7	3820.2	3733.0	3598.7	3400.2	3115.7	2810.7	2496.0	2221.2
22.5°	4065.9	4017.5	3987.2	3895.2	3808.1	3658.0	3442.5	3118.1	2779.2	2430.6	2142.5
25°	4102.2	4055.0	4015.1	3914.6	3815.3	3645.9	3407.4	3045.5	2664.2	2309.5	2028.7
27.5°	4076.8	4026.0	3980.0	3877.1	3762.1	3562.4	3286.4	2888.1	2497.2	2160.7	1875.0
30°	3986.0	3938.8	3883.1	3777.8	3643.5	3407.4	3087.9	2663.0	2281.7	1968.2	1689.8
32.5°	3831.1	3788.7	3720.9	3604.7	3429.2	3156.9	2811.9	2390.6	2105.0	1770.9	1497.3
35°	3616.8	3564.8	3472.8	3337.2	3116.9	2805.8	2474.2	2126.8	1838.7	1560.3	1292.8
37.5°	3304.5	3235.5	3166.5	2962.0	2721.1	2440.3	2155.8	1875.0	1574.8	1331.5	1089.4
40°	2861.5	2802.2	2724.7	2506.8	2318.0	2091.7	1841.1	1578.4	1340.0	1094.2	880.0
42.5°	2397.9	2304.7	2244.2	2086.8	1931.9	1707.9	1464.6	1232.2	1038.6	848.5	679.1
45°	1812.0	1783.0	1718.8	1602.6	1486.4	1324.2	1166.9	976.8	812.2	663.3	521.7
47.5°	1429.5	1402.9	1354.5	1268.6	1185.0	1049.5	912.7	762.6	623.4	483.0	380.1
50°	1135.4	1093.0	1050.7	978.0	895.7	794.1	680.3	542.3	404.3	312.3	255.4
52.5°	778.3	749.3	717.8	659.7	593.1	514.4	404.3	303.8	230.0	180.4	150.1
55°	434.6	430.9	397.0	357.1	296.6	251.8	192.5	153.7	128.3	112.6	100.5
57.5°	222.7	217.9	193.7	171.9	151.3	129.5	113.8	102.9	95.6	88.4	84.7
60°	128.3	123.5	117.4	112.6	104.1	96.8	89.6	83.5	79.9	73.8	70.2
62.5°	92.0	92.0	88.4	84.7	81.1	76.3	71.4	67.8	65.4	60.5	58.1
65°	70.2	70.2	67.8	65.4	62.9	60.5	56.9	53.3	52.0	48.4	46.0
67.5°	53.3	52.0	50.8	49.6	47.2	46.0	42.4	39.9	38.7	36.3	35.1
70°	36.3	36.3	35.1	35.1	35.1	32.7	30.3	29.1	27.8	26.6	26.6
72.5°	23.0	23.0	23.0	23.0	21.8	20.6	20.6	20.6	20.6	19.4	19.4
75°	15.7	14.5	14.5	14.5	14.5	14.5	14.5	14.5	15.7	15.7	15.7
77.5°	10.9	10.9	10.9	10.9	10.9	12.1	12.1	12.1	13.3	13.3	14.5
80°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	10.9	10.9	12.1
82.5°	7.3	7.3	7.3	7.3	7.3	7.3	8.5	8.5	8.5	8.5	9.7
85°	4.8	4.8	4.8	4.8	4.8	4.8	6.1	6.1	6.1	6.1	6.1
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	3.6	3.6	3.6	3.6	3.6
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°	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4
2.5°	1572.4	1561.5	1517.9	1502.2	1497.3	1441.6	1450.1	1416.2	1387.2	1361.8	1340.0
5°	1733.4	1699.5	1618.4	1576.0	1542.1	1457.4	1436.8	1379.9	1326.7	1281.9	1234.7
7.5°	1871.4	1802.4	1689.8	1620.8	1556.6	1442.9	1396.9	1318.2	1241.9	1179.0	1116.0
10°	1971.8	1868.9	1728.5	1632.9	1539.7	1396.9	1327.9	1232.2	1131.8	1059.1	986.5
12.5°	2039.6	1906.5	1733.4	1603.8	1487.6	1325.4	1240.7	1123.3	1019.2	936.9	846.1
15°	2062.6	1899.2	1700.7	1548.2	1409.0	1241.9	1136.6	1013.1	898.2	800.1	717.8
17.5°	2045.7	1854.4	1631.7	1463.4	1308.5	1129.4	1016.8	886.1	769.8	679.1	585.9
20°	1986.4	1774.5	1538.5	1355.7	1191.1	1010.7	889.7	759.0	645.2	552.0	474.5
22.5°	1891.9	1665.6	1418.6	1227.4	1065.2	886.1	759.0	634.3	526.5	452.7	394.6
25°	1763.6	1533.6	1280.7	1094.2	930.8	746.8	630.6	516.9	434.6	377.7	331.7
27.5°	1607.5	1376.3	1136.6	957.5	795.3	627.0	516.9	430.9	364.3	320.8	280.8
30°	1435.6	1214.1	986.5	808.6	662.1	509.6	428.5	363.1	309.9	272.4	242.1
32.5°	1252.8	1051.9	836.4	669.4	532.6	422.4	358.3	306.2	262.7	233.6	209.4
35°	1067.6	881.2	687.5	536.2	432.1	351.0	297.8	255.4	225.1	200.9	182.8
37.5°	894.5	715.4	538.7	426.1	348.6	285.7	248.1	216.7	193.7	175.5	161.0
40°	697.2	544.7	412.8	338.9	285.7	237.2	211.8	187.6	168.3	153.7	142.8
42.5°	530.2	418.8	335.3	277.2	234.8	199.7	179.1	158.6	144.0	129.5	121.0
45°	401.9	328.0	268.7	219.1	192.5	162.2	144.0	128.3	117.4	110.2	104.1
47.5°	300.2	244.5	198.5	163.4	145.3	122.3	112.6	104.1	99.3	96.8	92.0
50°	202.1	163.4	134.4	117.4	108.9	98.0	95.6	92.0	87.2	83.5	79.9
52.5°	125.9	110.2	99.3	94.4	92.0	88.4	83.5	79.9	75.0	73.8	71.4
55°	94.4	90.8	84.7	81.1	78.7	72.6	70.2	69.0	66.6	65.4	62.9
57.5°	79.9	76.3	71.4	67.8	66.6	62.9	61.7	58.1	56.9	55.7	54.5
60°	66.6	64.2	60.5	58.1	56.9	53.3	52.0	50.8	49.6	48.4	47.2
62.5°	54.5	53.3	49.6	48.4	47.2	44.8	43.6	43.6	42.4	42.4	41.2
65°	43.6	42.4	39.9	38.7	37.5	36.3	37.5	36.3	36.3	37.5	37.5
67.5°	33.9	33.9	31.5	31.5	31.5	30.3	31.5	31.5	32.7	33.9	35.1
70°	25.4	25.4	25.4	25.4	26.6	26.6	27.8	29.1	30.3	31.5	32.7
72.5°	19.4	20.6	20.6	21.8	23.0	23.0	25.4	25.4	26.6	27.8	29.1
75°	16.9	18.2	18.2	19.4	20.6	20.6	21.8	23.0	24.2	24.2	25.4
77.5°	14.5	15.7	15.7	16.9	18.2	18.2	19.4	19.4	20.6	21.8	21.8
80°	12.1	12.1	13.3	13.3	14.5	14.5	15.7	15.7	15.7	16.9	16.9
82.5°	9.7	9.7	9.7	10.9	10.9	10.9	12.1	12.1	12.1	13.3	13.3
85°	6.1	7.3	7.3	7.3	7.3	7.3	8.5	8.5	8.5	8.5	8.5
87.5°	3.6	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	4.8	4.8
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°	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4	1417.4
2.5°	1320.6	1310.9	1283.1	1269.8	1251.6	1229.8	1216.5	1215.3	1221.3	1180.2	1171.7
5°	1199.6	1166.9	1119.7	1093.0	1053.1	1027.7	1005.9	996.2	979.3	957.5	932.0
7.5°	1065.2	1015.6	964.7	918.7	882.4	842.5	814.6	786.8	774.7	745.6	726.3
10°	924.8	867.9	805.0	751.7	709.3	662.1	631.9	605.2	584.6	559.2	538.7
12.5°	777.1	716.6	641.5	591.9	549.5	510.8	479.3	463.6	446.7	432.1	410.3
15°	640.3	572.5	513.2	468.4	435.8	404.3	384.9	369.2	352.2	337.7	328.0
17.5°	514.4	461.2	415.2	380.1	353.5	328.0	311.1	297.8	288.1	271.1	266.3
20°	422.4	378.9	345.0	315.9	290.5	271.1	256.6	249.4	242.1	228.8	222.7
22.5°	352.2	319.6	288.1	263.9	249.4	232.4	220.3	213.0	207.0	197.3	194.9
25°	295.4	271.1	245.7	228.8	213.0	199.7	192.5	186.4	181.6	174.3	171.9
27.5°	254.2	233.6	213.0	198.5	187.6	177.9	168.3	167.0	165.8	158.6	157.4
30°	219.1	203.4	187.6	176.7	168.3	161.0	156.1	151.3	152.5	147.7	146.5
32.5°	192.5	180.4	168.3	158.6	153.7	147.7	144.0	144.0	142.8	138.0	138.0
35°	169.5	161.0	152.5	145.3	141.6	136.8	133.1	131.9	131.9	125.9	125.9
37.5°	152.5	144.0	136.8	131.9	128.3	122.3	119.8	118.6	117.4	113.8	113.8
40°	133.1	127.1	121.0	116.2	112.6	108.9	106.5	106.5	106.5	102.9	102.9
42.5°	113.8	110.2	106.5	102.9	101.7	98.0	95.6	95.6	95.6	90.8	92.0
45°	100.5	99.3	95.6	92.0	89.6	87.2	84.7	85.9	85.9	82.3	83.5
47.5°	89.6	87.2	83.5	81.1	79.9	78.7	77.5	77.5	77.5	75.0	75.0
50°	78.7	76.3	75.0	73.8	72.6	71.4	69.0	69.0	69.0	67.8	67.8
52.5°	70.2	69.0	66.6	65.4	65.4	62.9	62.9	60.5	62.9	60.5	61.7
55°	61.7	60.5	59.3	58.1	58.1	56.9	56.9	56.9	56.9	56.9	58.1
57.5°	53.3	53.3	52.0	52.0	52.0	50.8	52.0	53.3	54.5	53.3	55.7
60°	47.2	47.2	46.0	47.2	48.4	48.4	49.6	50.8	53.3	53.3	54.5
62.5°	41.2	43.6	43.6	44.8	46.0	47.2	48.4	49.6	52.0	50.8	53.3
65°	38.7	39.9	41.2	42.4	44.8	44.8	46.0	47.2	48.4	48.4	50.8
67.5°	36.3	38.7	38.7	39.9	41.2	41.2	43.6	44.8	46.0	46.0	47.2
70°	33.9	35.1	36.3	37.5	38.7	38.7	39.9	41.2	42.4	41.2	42.4
72.5°	30.3	31.5	32.7	32.7	33.9	33.9	35.1	36.3	37.5	37.5	38.7
75°	26.6	27.8	27.8	29.1	30.3	30.3	31.5	31.5	32.7	32.7	33.9
77.5°	23.0	23.0	24.2	24.2	25.4	25.4	26.6	26.6	27.8	27.8	27.8
80°	18.2	19.4	19.4	19.4	20.6	20.6	20.6	21.8	21.8	21.8	23.0
82.5°	13.3	14.5	14.5	14.5	15.7	15.7	15.7	15.7	16.9	16.9	16.9
85°	9.7	9.7	9.7	9.7	9.7	10.9	10.9	10.9	10.9	10.9	10.9
87.5°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
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: P130041

CATALOG NUMBER: HL618TAT - HLM6940 - HL6FL - 456W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1417.4	1417.4	1417.4	1417.4
2.5°	1182.6	1176.6	1159.6	1156.0
5°	936.9	924.8	912.7	909.0
7.5°	727.5	711.7	694.8	703.3
10°	522.9	520.5	512.0	509.6
12.5°	399.4	397.0	389.8	382.5
15°	317.1	317.1	311.1	305.0
17.5°	255.4	257.8	250.6	246.9
20°	216.7	215.5	213.0	210.6
22.5°	188.8	188.8	187.6	182.8
25°	167.0	168.3	167.0	164.6
27.5°	153.7	154.9	153.7	152.5
30°	144.0	144.0	142.8	142.8
32.5°	135.6	135.6	135.6	134.4
35°	123.5	124.7	123.5	123.5
37.5°	111.4	111.4	111.4	111.4
40°	100.5	101.7	101.7	100.5
42.5°	89.6	89.6	89.6	88.4
45°	81.1	82.3	81.1	81.1
47.5°	73.8	73.8	73.8	72.6
50°	66.6	66.6	66.6	66.6
52.5°	60.5	60.5	61.7	60.5
55°	56.9	58.1	58.1	58.1
57.5°	55.7	55.7	56.9	56.9
60°	54.5	54.5	55.7	55.7
62.5°	52.0	54.5	53.3	53.3
65°	49.6	49.6	50.8	50.8
67.5°	46.0	47.2	47.2	47.2
70°	42.4	42.4	43.6	43.6
72.5°	37.5	38.7	38.7	38.7
75°	32.7	33.9	33.9	33.9
77.5°	27.8	27.8	29.1	29.1
80°	23.0	23.0	23.0	23.0
82.5°	16.9	16.9	16.9	16.9
85°	10.9	10.9	10.9	10.9
87.5°	4.8	4.8	4.8	4.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)