

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: P130027

Luminaire Tested: **HL618TAT - HLM6930 - HL6FL - 455H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130027
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33448)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6930 - HL6FL - 455H
Description: HALO ALLSLOPE 6" 30W, Semi-Specular Haze Reflector, White Metal Trim Ring using 40 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2032.0 lumens
Efficiency: N/A
Efficacy: 73.6 lumens/watt
Spacing Criteria (0/90/45): 1.6 / 0.65 / 1.06
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

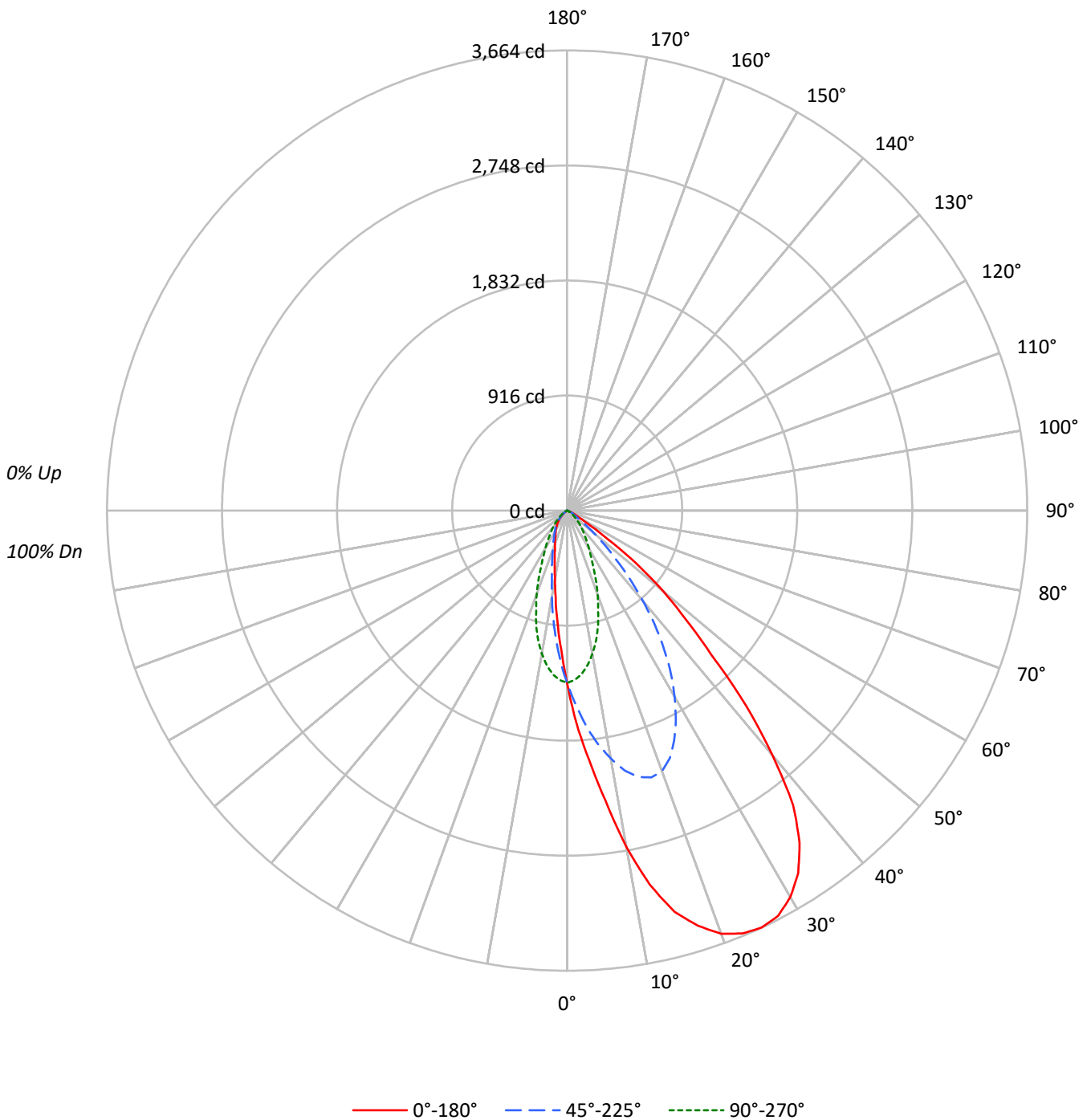
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	110	107	104	110	107	105	103	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	85	78	73	91	83	77	73	81	76	72	79	75	71	77	73	70	69					69			
5	88	78	71	66	86	77	71	66	75	69	65	73	68	65	72	67	64	62					62			
6	82	72	65	60	81	71	65	60	69	64	59	68	63	59	67	62	59	57					57			
7	77	67	60	55	76	66	59	55	65	59	54	63	58	54	62	57	54	52					52			
8	73	62	55	50	71	61	55	50	60	54	50	59	54	50	58	53	49	48					48			
9	69	58	51	46	67	57	51	46	56	50	46	55	50	46	54	49	46	44					44			
10	65	54	47	43	64	53	47	43	52	47	43	52	46	42	51	46	42	41					41			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	81961	81961	81961
5°	116371	76669	52110
10°	157653	66995	32111
15°	190852	54839	21922
20°	207648	41123	16397
25°	214700	28632	12910
30°	212324	20670	10750
35°	198217	15108	8700
40°	162160	11258	6645
45°	108404	8023	4402
50°	70119	5402	2553
55°	29474	3697	1124
60°	8355	2346	523
65°	4786	1152	189
70°	2471	434	0
75°	614	243	0
80°	151	288	0
85°	0	356	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.2	6.5
10°-20°	384.6	18.9
20°-30°	546.7	26.9
30°-40°	529.2	26.0
40°-50°	317.7	15.6
50°-60°	97.8	4.8
60°-70°	20.4	1.0
70°-80°	3.3	0.2
80°-90°	1.1	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°	1062.5	52.3
0°-40°	1591.7	78.3
0°-60°	2007.2	98.8
0°-90°	2032.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2032.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1373	1373	1373	1373	1373	
5°	1987	1719	1309	1022	890	212
15°	3308	2195	951	466	380	932
25°	3664	2017	489	252	220	1679
35°	3226	1344	246	158	142	1976
45°	1625	552	120	81	66	1297
55°	391	96	49	27	15	400
65°	53	33	13	4	2	56
75°	5	2	2	1	0	8
85°	0	1	2	1	0	0
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°	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1
2.5°	1694.6	1661.6	1645.6	1624.3	1638.2	1615.8	1614.8	1611.6	1578.6	1542.4	1549.8
5°	1987.3	1956.5	1932.0	1897.9	1893.7	1857.5	1801.0	1837.2	1777.6	1719.1	1704.2
7.5°	2325.8	2282.2	2256.6	2190.6	2175.7	2073.5	2074.6	2038.4	1960.7	1873.4	1828.7
10°	2722.9	2667.5	2643.0	2546.2	2504.6	2396.1	2335.4	2256.6	2135.3	2005.4	1925.6
12.5°	3052.8	3002.8	2970.9	2860.2	2811.2	2680.3	2581.3	2468.5	2293.9	2120.4	2005.4
15°	3308.3	3255.1	3175.2	3096.5	3044.3	2896.4	2831.4	2629.2	2450.4	2194.9	2040.5
17.5°	3465.8	3424.3	3375.4	3258.3	3201.9	3060.3	2912.3	2734.6	2489.7	2227.9	2033.1
20°	3585.1	3537.2	3479.7	3359.4	3295.5	3131.6	2981.5	2783.5	2501.5	2207.7	1986.3
22.5°	3644.7	3597.8	3540.4	3408.4	3334.9	3156.1	2990.0	2762.2	2447.2	2134.2	1901.1
25°	3663.8	3613.8	3552.1	3410.5	3323.2	3130.5	2942.1	2681.3	2338.6	2017.1	1783.0
27.5°	3638.3	3582.9	3515.9	3369.0	3266.8	3052.8	2833.6	2533.4	2188.5	1874.5	1642.4
30°	3553.1	3501.0	3429.7	3277.4	3156.1	2903.8	2653.7	2326.9	1998.0	1711.6	1479.6
32.5°	3423.3	3366.8	3297.7	3126.3	2979.4	2699.4	2407.8	2097.0	1808.5	1538.1	1311.4
35°	3226.3	3168.9	3094.4	2892.1	2723.9	2417.4	2128.9	1869.2	1627.5	1344.4	1127.3
37.5°	2957.0	2888.9	2776.1	2590.9	2385.4	2094.8	1854.3	1635.0	1380.6	1146.4	947.4
40°	2545.1	2496.1	2379.0	2201.3	2016.1	1788.3	1599.9	1388.0	1150.7	936.7	770.7
42.5°	2112.9	2056.5	1962.8	1809.6	1668.0	1468.9	1292.2	1096.4	911.2	733.4	596.1
45°	1625.4	1588.2	1527.5	1412.5	1290.1	1145.3	1010.2	861.1	722.8	552.4	447.1
47.5°	1278.4	1250.7	1208.1	1106.0	1036.8	899.5	796.2	669.5	543.9	408.7	322.5
50°	994.2	977.2	937.8	851.6	786.6	685.5	590.8	482.2	368.3	274.6	218.2
52.5°	694.0	707.9	648.2	594.0	532.2	451.3	359.8	279.9	211.8	162.9	136.2
55°	390.7	387.5	367.2	320.4	269.3	214.0	169.2	142.6	116.0	95.8	86.2
57.5°	187.3	181.0	169.2	144.8	123.5	107.5	94.7	87.3	78.8	71.3	67.1
60°	102.2	101.1	95.8	88.3	84.1	77.7	72.4	68.1	61.7	56.4	52.2
62.5°	73.4	72.4	70.3	66.0	63.9	59.6	55.4	52.2	49.0	44.7	41.5
65°	53.2	53.2	52.2	49.0	47.9	44.7	42.6	39.4	36.2	33.0	30.9
67.5°	39.4	38.3	37.3	36.2	34.1	31.9	29.8	27.7	25.5	22.4	20.2
70°	24.5	23.4	23.4	22.4	21.3	19.2	17.0	16.0	14.9	12.8	11.7
72.5°	12.8	12.8	11.7	11.7	10.6	9.6	8.5	8.5	7.5	6.4	5.3
75°	5.3	4.3	4.3	4.3	4.3	4.3	3.2	3.2	3.2	2.1	2.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.1	2.1	2.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
87.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1
2.5°	1522.2	1497.7	1496.6	1460.4	1423.2	1412.5	1366.8	1349.7	1332.7	1289.0	1285.9
5°	1649.9	1606.3	1577.5	1514.7	1451.9	1414.7	1346.5	1309.3	1271.0	1233.7	1189.0
7.5°	1752.1	1681.8	1626.5	1531.7	1447.6	1387.0	1323.1	1241.1	1184.7	1139.0	1075.1
10°	1829.8	1725.5	1643.5	1525.4	1417.8	1332.7	1234.8	1157.1	1087.9	1029.3	962.3
12.5°	1872.4	1736.1	1631.8	1501.9	1361.4	1262.4	1143.2	1060.2	961.2	910.1	831.3
15°	1878.8	1718.0	1589.2	1427.4	1283.7	1170.9	1047.4	950.6	864.3	788.8	711.1
17.5°	1847.9	1666.9	1517.9	1338.0	1193.2	1061.3	936.7	819.6	745.1	664.2	589.7
20°	1746.8	1587.1	1415.7	1230.5	1077.2	947.4	813.2	710.0	623.8	543.9	487.5
22.5°	1682.9	1477.5	1295.4	1108.1	952.7	822.8	690.8	595.0	510.9	455.6	410.9
25°	1557.3	1342.3	1162.4	979.3	824.9	695.1	572.7	488.6	427.9	377.9	348.1
27.5°	1412.5	1199.6	1022.9	848.4	700.4	578.0	473.7	408.7	359.8	326.8	295.9
30°	1236.9	1053.8	880.3	721.7	574.8	471.6	393.8	345.9	306.6	276.8	255.5
32.5°	1098.5	905.8	747.2	588.6	471.6	394.9	332.1	291.7	260.8	240.6	220.3
35°	935.7	761.1	607.8	472.6	385.3	325.7	277.8	245.9	222.5	205.4	190.5
37.5°	772.8	605.7	479.0	382.1	314.0	269.3	231.0	208.6	188.4	176.7	165.0
40°	609.9	468.4	374.7	306.6	255.5	220.3	194.8	176.7	160.7	152.2	142.6
42.5°	460.9	358.7	297.0	245.9	208.6	183.1	161.8	149.0	136.2	125.6	120.3
45°	349.1	281.0	235.2	198.0	169.2	150.1	129.9	120.3	110.7	104.3	100.1
47.5°	266.1	217.1	178.8	148.0	129.9	113.9	102.2	93.7	89.4	88.3	83.0
50°	179.9	145.8	124.5	105.4	94.7	86.2	80.9	76.6	73.4	70.3	66.0
52.5°	112.8	96.9	87.3	78.8	74.5	70.3	66.0	62.8	58.5	56.4	51.1
55°	78.8	73.4	69.2	63.9	60.7	56.4	52.2	49.0	46.8	44.7	41.5
57.5°	62.8	58.5	55.4	51.1	47.9	44.7	41.5	39.4	36.2	35.1	30.9
60°	50.0	46.8	43.6	40.4	37.3	34.1	31.9	28.7	26.6	24.5	21.3
62.5°	39.4	36.2	33.0	30.9	27.7	25.5	22.4	20.2	18.1	16.0	13.8
65°	28.7	25.5	23.4	21.3	19.2	17.0	14.9	12.8	10.6	9.6	8.5
67.5°	19.2	16.0	14.9	13.8	11.7	9.6	8.5	6.4	6.4	5.3	5.3
70°	10.6	9.6	8.5	7.5	6.4	5.3	4.3	4.3	3.2	3.2	3.2
72.5°	5.3	4.3	4.3	3.2	3.2	3.2	3.2	3.2	3.2	2.1	2.1
75°	3.2	2.1	2.1	3.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
85°	1.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
87.5°	1.1	1.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1	1373.1
2.5°	1293.3	1258.2	1245.4	1209.2	1190.1	1202.8	1177.3	1162.4	1153.9	1154.9	1133.6
5°	1178.3	1130.4	1101.7	1107.0	1008.0	1021.9	995.3	969.7	961.2	946.3	933.5
7.5°	1048.5	998.5	959.1	904.8	871.8	855.8	834.5	790.9	780.2	759.0	744.0
10°	918.6	860.1	816.4	750.4	715.3	695.1	661.0	629.1	617.4	603.5	581.2
12.5°	786.6	723.8	671.7	614.2	580.1	563.1	534.4	513.1	501.4	488.6	479.0
15°	651.4	585.4	548.2	504.5	476.9	466.2	443.9	429.0	417.3	408.7	401.3
17.5°	539.7	489.6	457.7	423.7	401.3	392.8	375.8	360.8	352.3	345.9	341.7
20°	451.3	410.9	387.5	359.8	344.9	333.2	318.3	310.8	305.5	301.2	297.0
22.5°	383.2	348.1	328.9	306.6	293.8	288.5	278.9	269.3	266.1	262.9	258.7
25°	326.8	299.1	283.1	267.2	256.5	252.3	243.8	237.4	235.2	232.0	229.9
27.5°	278.9	258.7	247.0	233.1	225.7	222.5	215.0	210.8	210.8	207.6	208.6
30°	241.6	225.7	216.1	205.4	200.1	198.0	192.7	189.5	188.4	186.3	185.2
32.5°	210.8	196.9	191.6	182.0	178.8	176.7	172.4	169.2	170.3	168.2	167.1
35°	183.1	173.5	169.2	161.8	159.7	157.5	154.3	151.2	151.2	149.0	146.9
37.5°	159.7	153.3	149.0	142.6	140.5	138.4	135.2	130.9	130.9	128.8	128.8
40°	140.5	132.0	129.9	122.4	119.2	117.1	115.0	112.8	110.7	108.6	108.6
42.5°	118.2	110.7	108.6	103.3	101.1	99.0	96.9	91.5	91.5	89.4	89.4
45°	96.9	92.6	90.5	86.2	83.0	80.9	77.7	74.5	73.4	71.3	70.3
47.5°	79.8	75.6	73.4	69.2	67.1	64.9	62.8	59.6	58.5	56.4	54.3
50°	64.9	60.7	58.5	55.4	53.2	51.1	49.0	45.8	44.7	41.5	40.4
52.5°	51.1	49.0	45.8	42.6	40.4	37.3	36.2	33.0	30.9	28.7	27.7
55°	39.4	37.3	34.1	30.9	28.7	26.6	24.5	22.4	20.2	19.2	17.0
57.5°	29.8	26.6	23.4	21.3	19.2	17.0	16.0	13.8	12.8	11.7	10.6
60°	20.2	17.0	16.0	13.8	11.7	10.6	9.6	8.5	8.5	7.5	7.5
62.5°	12.8	10.6	9.6	8.5	7.5	7.5	6.4	5.3	5.3	4.3	4.3
65°	7.5	6.4	6.4	5.3	5.3	4.3	4.3	3.2	3.2	3.2	2.1
67.5°	4.3	4.3	4.3	3.2	3.2	2.1	2.1	2.1	2.1	1.1	1.1
70°	3.2	3.2	3.2	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1
72.5°	2.1	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1
75°	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0
80°	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0
82.5°	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0
85°	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0
87.5°	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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: P130027

CATALOG NUMBER: HL618TAT - HLM6930 - HL6FL - 455H

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1373.1	1373.1	1373.1	1373.1
2.5°	1124.1	1118.7	1131.5	1100.6
5°	928.2	911.2	927.1	889.9
7.5°	738.7	724.9	732.3	701.5
10°	580.1	562.0	571.6	554.6
12.5°	472.6	464.1	465.2	454.5
15°	396.0	387.5	390.7	380.0
17.5°	335.3	328.9	335.3	323.6
20°	291.7	285.3	290.6	283.1
22.5°	256.5	252.3	258.7	250.1
25°	222.5	224.6	226.7	220.3
27.5°	204.4	201.2	204.4	199.1
30°	184.1	181.0	184.1	179.9
32.5°	166.1	162.9	165.0	160.7
35°	145.8	143.7	145.8	141.6
37.5°	126.7	123.5	125.6	124.5
40°	106.4	105.4	106.4	104.3
42.5°	86.2	85.2	86.2	85.2
45°	68.1	67.1	69.2	66.0
47.5°	53.2	51.1	52.2	51.1
50°	38.3	37.3	37.3	36.2
52.5°	26.6	24.5	25.5	24.5
55°	17.0	16.0	16.0	14.9
57.5°	10.6	9.6	9.6	9.6
60°	6.4	6.4	6.4	6.4
62.5°	4.3	3.2	3.2	3.2
65°	2.1	2.1	2.1	2.1
67.5°	1.1	1.1	1.1	1.1
70°	1.1	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0
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)