

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: P130025

Luminaire Tested: **HL618TAT - HLM6940 - HL6FL - 455SC**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130025
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33449)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6940 - HL6FL - 455SC
Description: HALO ALLSLOPE 6" 30W, Specular Clear Reflector, 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: 2331.9 lumens
Efficiency: N/A
Efficacy: 84.5 lumens/watt
Spacing Criteria (0/90/45): 1.45 / 0.65 / 1
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

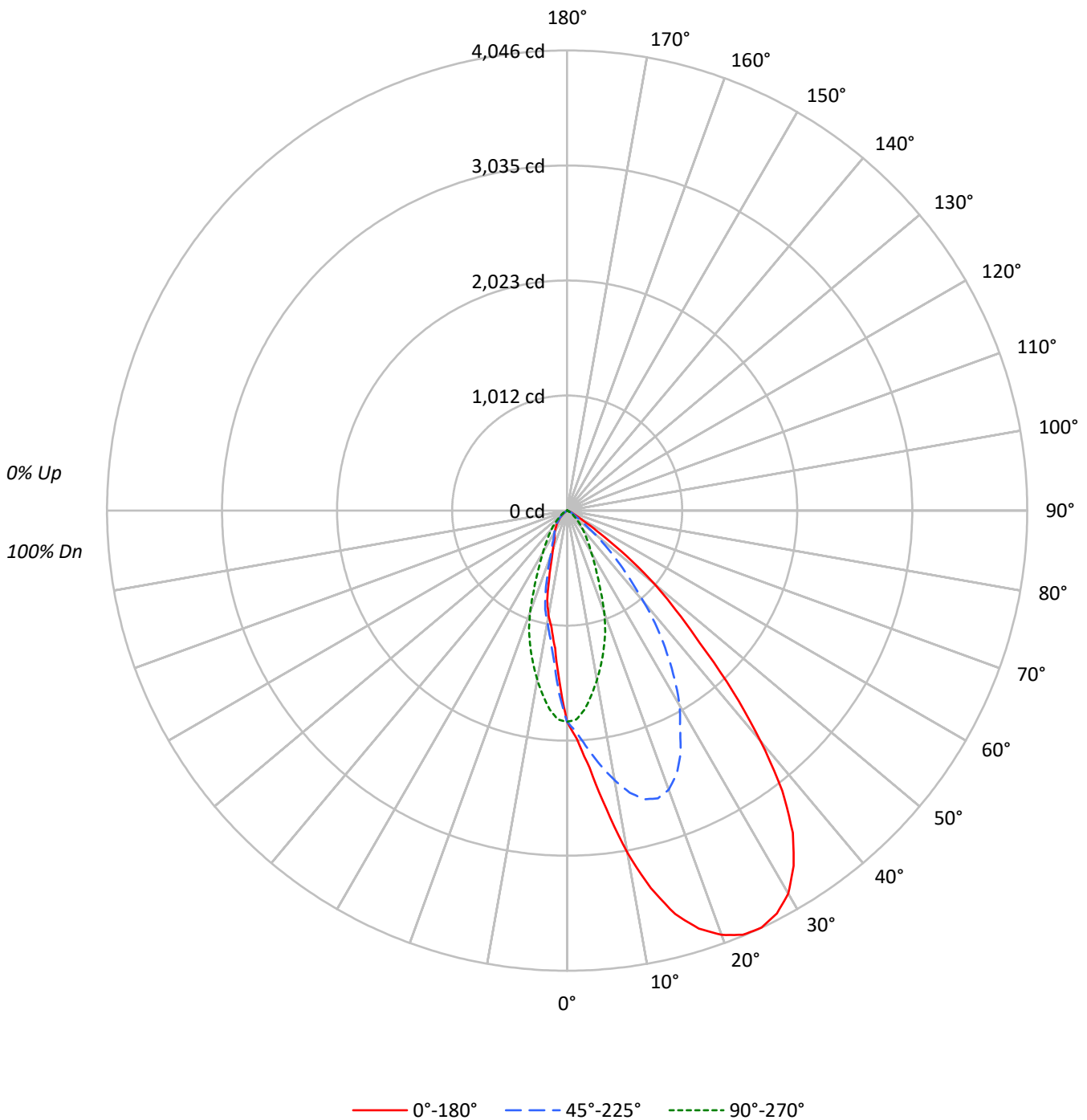
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	110	107	104	110	108	105	103	103	101	100	100	98	97	96	95	94				92	
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	86				84	
3	100	93	87	83	98	91	86	82	89	84	81	86	82	79	84	81	78				76	
4	94	85	79	74	92	84	78	74	82	77	73	80	76	72	78	74	71				70	
5	88	79	72	67	87	78	72	67	76	71	66	74	69	66	73	68	65				64	
6	83	73	66	61	81	72	66	61	71	65	61	69	64	60	68	63	60				58	
7	78	68	61	56	77	67	61	56	66	60	56	64	59	55	63	59	55				53	
8	74	63	56	52	72	62	56	52	61	55	51	60	55	51	59	54	51				49	
9	70	59	52	48	68	58	52	48	57	51	47	56	51	47	55	51	47				46	
10	66	55	49	44	65	55	48	44	54	48	44	53	48	44	52	47	44				42	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	110852	110852	110852
5°	132990	102862	71177
10°	177054	87404	54251
15°	211891	71932	35127
20°	229919	55325	21245
25°	237091	36678	15043
30°	232366	25247	13093
35°	212495	18296	10340
40°	168614	13501	7639
45°	110051	9444	5329
50°	70613	5974	2821
55°	27128	4021	362
60°	8314	2477	0
65°	4688	1089	0
70°	2199	242	0
75°	278	278	0
80°	0	329	0
85°	0	407	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.2	7.1
10°-20°	473.6	20.3
20°-30°	635.8	27.3
30°-40°	594.9	25.5
40°-50°	343.0	14.7
50°-60°	96.7	4.1
60°-70°	18.5	0.8
70°-80°	2.3	0.1
80°-90°	1.0	0.0
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°	1275.6	54.7
0°-40°	1870.5	80.2
0°-60°	2310.1	99.1
0°-90°	2331.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2331.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1857	1857	1857	1857	1857	
5°	2271	2104	1757	1322	1216	242
15°	3673	2628	1247	728	609	1036
25°	4046	2361	626	288	257	1851
35°	3459	1528	298	183	168	2111
45°	1650	625	142	90	80	1324
55°	360	100	53	27	5	383
65°	52	33	12	1	0	54
75°	2	1	2	1	0	6
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°	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1
2.5°	2012.1	2015.7	2025.4	2004.8	1985.4	1979.4	1985.4	1952.7	1962.4	1952.7	1929.7
5°	2271.1	2286.9	2288.1	2259.0	2230.0	2216.7	2205.8	2140.4	2139.2	2104.1	2052.0
7.5°	2644.0	2650.1	2625.8	2584.7	2529.0	2484.2	2444.2	2352.2	2325.6	2261.4	2185.2
10°	3058.0	3073.8	3043.5	2984.2	2892.2	2825.6	2723.9	2588.3	2512.0	2407.9	2299.0
12.5°	3398.2	3410.3	3393.4	3312.3	3221.5	3146.4	3006.0	2829.2	2699.7	2539.9	2376.5
15°	3673.0	3679.1	3663.3	3575.0	3473.3	3371.6	3225.1	3018.1	2853.4	2628.3	2414.0
17.5°	3853.4	3859.5	3854.6	3751.7	3645.2	3538.7	3366.7	3136.7	2920.0	2652.5	2399.5
20°	3969.6	3989.0	3966.0	3871.6	3745.7	3631.9	3434.5	3173.0	2922.4	2611.3	2328.0
22.5°	4037.4	4054.4	4026.5	3926.1	3789.3	3663.3	3438.2	3142.8	2852.2	2510.8	2217.9
25°	4045.9	4064.1	4031.4	3918.8	3774.7	3623.4	3364.3	3036.2	2703.3	2360.7	2079.9
27.5°	3992.6	4010.8	3970.8	3855.8	3700.9	3520.5	3214.2	2854.6	2508.4	2147.6	1900.7
30°	3888.5	3889.7	3849.8	3731.1	3549.5	3338.9	2986.6	2599.2	2295.3	1979.4	1703.3
32.5°	3705.7	3721.5	3663.3	3526.5	3242.0	3061.7	2691.2	2334.1	2056.8	1759.0	1525.4
35°	3458.7	3464.8	3391.0	3234.8	2963.6	2703.3	2358.3	2060.5	1809.9	1527.8	1286.9
37.5°	3106.5	3111.3	3015.7	2847.4	2560.5	2335.3	2038.7	1780.8	1547.2	1302.6	1078.7
40°	2646.4	2646.4	2538.7	2383.7	2151.3	1973.3	1726.3	1489.1	1276.0	1047.2	860.8
42.5°	2159.8	2139.2	2070.2	1929.7	1746.9	1565.3	1348.6	1157.4	991.5	813.5	661.0
45°	1650.1	1641.6	1598.0	1492.7	1360.7	1236.0	1061.7	918.9	777.2	624.7	492.7
47.5°	1294.2	1294.2	1261.5	1176.7	1075.0	972.1	839.0	707.0	587.2	451.6	357.1
50°	1001.2	1007.2	957.6	887.4	797.8	721.5	594.4	481.8	381.3	296.6	237.3
52.5°	658.6	667.1	624.7	572.6	498.8	438.2	331.7	260.3	207.0	170.7	141.6
55°	359.6	354.7	329.3	291.8	236.1	198.5	157.4	132.0	115.0	100.5	90.8
57.5°	171.9	169.5	152.5	134.4	119.9	107.7	95.6	87.2	81.1	76.3	71.4
60°	101.7	99.3	96.8	89.6	84.7	78.7	72.6	67.8	64.2	59.3	55.7
62.5°	71.4	71.4	70.2	67.8	63.0	59.3	54.5	50.8	48.4	44.8	42.4
65°	52.1	50.8	50.8	48.4	46.0	43.6	40.0	37.5	36.3	32.7	30.3
67.5°	35.1	35.1	35.1	33.9	31.5	29.1	26.6	25.4	23.0	20.6	19.4
70°	21.8	21.8	20.6	19.4	18.2	16.9	14.5	14.5	13.3	10.9	9.7
72.5°	9.7	9.7	9.7	8.5	8.5	7.3	6.1	6.1	4.8	3.6	3.6
75°	2.4	2.4	2.4	2.4	2.4	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
80°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
85°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
87.5°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
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°	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1
2.5°	1963.6	1926.1	1916.4	1929.7	1910.4	1871.6	1863.1	1838.9	1808.7	1794.1	1777.2
5°	2062.9	2010.8	1980.6	1973.3	1928.5	1860.7	1818.4	1756.6	1697.3	1651.3	1598.0
7.5°	2170.6	2085.9	2025.4	1980.6	1897.0	1792.9	1716.7	1635.6	1550.8	1487.9	1424.9
10°	2251.8	2125.9	2023.0	1939.4	1826.8	1692.5	1605.3	1509.6	1412.8	1336.5	1271.2
12.5°	2288.1	2121.0	1986.6	1876.5	1739.7	1598.0	1485.4	1378.9	1276.0	1204.6	1135.6
15°	2285.7	2084.7	1922.5	1792.9	1638.0	1480.6	1355.9	1246.9	1147.7	1081.1	1016.9
17.5°	2234.8	2008.4	1822.0	1676.7	1509.6	1345.0	1227.6	1113.8	1015.7	934.6	852.3
20°	2147.6	1904.3	1698.5	1531.4	1363.2	1198.5	1072.6	955.2	837.8	755.4	670.7
22.5°	2024.2	1768.7	1549.6	1372.8	1199.7	1036.3	897.1	772.4	664.6	592.0	535.1
25°	1866.8	1606.5	1383.7	1202.1	1029.0	868.0	728.8	625.9	532.7	477.0	433.4
27.5°	1681.6	1421.3	1214.3	1038.7	864.4	713.1	593.2	509.7	440.7	397.1	363.2
30°	1486.6	1242.1	1038.7	880.1	713.1	573.8	483.0	422.5	372.9	334.1	309.9
32.5°	1279.6	1059.3	885.0	724.0	577.5	470.9	405.6	359.6	312.3	288.1	267.5
35°	1085.9	882.5	716.7	576.3	469.7	394.7	340.2	297.8	270.0	247.0	231.2
37.5°	903.1	711.8	555.7	454.0	378.9	319.6	280.9	251.8	228.8	211.9	201.0
40°	701.0	543.6	434.6	366.8	309.9	261.5	233.7	211.9	194.9	182.8	173.1
42.5°	530.3	415.2	346.2	294.2	251.8	216.7	198.5	176.8	163.4	153.7	144.1
45°	399.5	323.2	272.4	236.1	202.2	174.3	158.6	141.6	129.5	123.5	116.2
47.5°	297.8	243.3	203.4	178.0	150.1	130.7	119.9	109.0	101.7	96.8	93.2
50°	201.0	163.4	139.2	121.1	107.7	98.1	92.0	84.7	81.1	78.7	73.8
52.5°	123.5	105.3	94.4	88.4	82.3	77.5	73.8	69.0	63.0	60.5	56.9
55°	84.7	78.7	75.1	70.2	65.4	60.5	56.9	53.3	50.8	48.4	44.8
57.5°	69.0	63.0	58.1	54.5	50.8	47.2	44.8	42.4	38.7	36.3	33.9
60°	52.1	48.4	44.8	42.4	38.7	36.3	33.9	30.3	27.8	25.4	23.0
62.5°	40.0	36.3	33.9	31.5	29.1	25.4	23.0	20.6	18.2	15.7	13.3
65°	27.8	25.4	23.0	20.6	18.2	15.7	14.5	12.1	9.7	7.3	4.8
67.5°	18.2	15.7	13.3	10.9	9.7	7.3	6.1	4.8	2.4	2.4	1.2
70°	8.5	7.3	4.8	4.8	3.6	2.4	2.4	2.4	1.2	1.2	1.2
72.5°	2.4	2.4	2.4	2.4	2.4	1.2	1.2	1.2	1.2	1.2	1.2
75°	1.2	1.2	1.2	1.2	2.4	2.4	1.2	2.4	2.4	1.2	1.2
77.5°	1.2	1.2	1.2	2.4	2.4	2.4	2.4	2.4	1.2	1.2	2.4
80°	1.2	1.2	1.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.2
82.5°	1.2	1.2	1.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
85°	1.2	1.2	1.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
87.5°	1.2	1.2	1.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.2
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°	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1	1857.1
2.5°	1730.0	1726.3	1692.5	1663.4	1642.8	1608.9	1593.2	1576.2	1536.3	1537.5	1554.4
5°	1531.4	1500.0	1452.7	1404.3	1370.4	1322.0	1299.0	1274.8	1256.6	1237.3	1236.0
7.5°	1346.2	1303.8	1254.2	1207.0	1177.9	1130.7	1110.1	1085.9	1069.0	1056.9	1058.1
10°	1188.8	1148.9	1101.7	1078.7	1037.5	998.8	984.2	967.3	956.4	947.9	955.2
12.5°	1069.0	1029.0	989.1	949.1	923.7	889.8	871.6	855.9	841.4	834.1	831.7
15°	941.9	897.1	849.9	801.4	777.2	727.6	708.2	684.0	664.6	647.7	629.5
17.5°	774.8	727.6	680.4	628.3	592.0	560.5	537.5	512.1	491.5	477.0	469.7
20°	608.9	562.9	526.6	480.6	455.2	428.6	414.0	394.7	383.8	377.7	375.3
22.5°	480.6	441.9	414.0	383.8	365.6	347.4	337.8	324.4	314.8	307.5	307.5
25°	391.0	364.4	341.4	320.8	308.7	288.1	280.9	272.4	266.3	261.5	263.9
27.5°	326.9	317.2	293.0	272.4	262.7	249.4	245.8	239.7	237.3	234.9	236.1
30°	282.1	265.1	254.2	239.7	232.4	222.8	222.8	219.1	217.9	217.9	220.3
32.5°	245.8	232.4	222.8	213.1	210.6	203.4	204.6	201.0	198.5	197.3	197.3
35°	214.3	204.6	198.5	192.5	190.1	182.8	181.6	178.0	174.3	170.7	171.9
37.5°	187.6	181.6	175.5	169.5	165.9	158.6	157.4	155.0	152.5	151.3	151.3
40°	162.2	156.2	151.3	144.1	141.6	134.4	135.6	133.2	128.3	125.9	124.7
42.5°	134.4	129.5	124.7	121.1	118.6	111.4	109.0	102.9	101.7	100.5	101.7
45°	110.2	105.3	101.7	95.6	93.2	89.6	88.4	86.0	83.5	81.1	82.3
47.5°	88.4	84.7	79.9	77.5	75.1	71.4	70.2	67.8	66.6	64.2	64.2
50°	69.0	66.6	64.2	60.5	59.3	55.7	54.5	52.1	49.6	47.2	46.0
52.5°	54.5	53.3	50.8	47.2	44.8	42.4	40.0	35.1	31.5	27.8	27.8
55°	42.4	40.0	37.5	33.9	31.5	26.6	23.0	19.4	15.7	10.9	9.7
57.5°	31.5	27.8	25.4	20.6	16.9	12.1	9.7	4.8	3.6	1.2	0.0
60°	19.4	16.9	12.1	8.5	6.1	2.4	1.2	1.2	0.0	0.0	0.0
62.5°	9.7	7.3	3.6	2.4	1.2	1.2	0.0	0.0	0.0	0.0	0.0
65°	3.6	2.4	1.2	1.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0
67.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0	0.0
70°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0	0.0
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0
75°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0
85°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	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: P130025

CATALOG NUMBER: HL618TAT - HLM6940 - HL6FL - 455SC

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1857.1	1857.1	1857.1	1857.1
2.5°	1489.1	1507.2	1475.7	1510.9
5°	1194.9	1197.3	1188.8	1215.5
7.5°	1024.2	1033.9	1021.8	1041.1
10°	926.1	929.8	923.7	937.0
12.5°	812.3	801.4	796.6	809.9
15°	621.0	617.4	601.7	608.9
17.5°	458.8	454.0	452.8	451.6
20°	364.4	359.6	358.3	366.8
22.5°	297.8	295.4	291.8	300.2
25°	256.7	256.7	254.2	256.7
27.5°	231.2	232.4	231.2	234.9
30°	215.5	216.7	215.5	219.1
32.5°	191.3	192.5	190.1	191.3
35°	167.1	167.1	165.9	168.3
37.5°	147.7	148.9	147.7	150.1
40°	121.1	119.9	118.6	119.9
42.5°	99.3	98.1	98.1	100.5
45°	78.7	78.7	78.7	79.9
47.5°	61.7	60.5	60.5	60.5
50°	43.6	41.2	41.2	40.0
52.5°	23.0	21.8	21.8	20.6
55°	7.3	6.1	6.1	4.8
57.5°	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0
70°	0.0	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)