

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: P130043

Luminaire Tested: **HL618TAT - HLM6930 - HL6FL - 456P**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P130043  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33453)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HL618TAT - HLM6930 - HL6FL - 456P  
Description: HALO ALLSLOPE 6" 30W, Black Coilex Baffle, 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: 1914.2 lumens  
Efficiency: N/A  
Efficacy: 69.4 lumens/watt  
Spacing Criteria (0/90/45): 1.62 / 0.66 / 1.08  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct

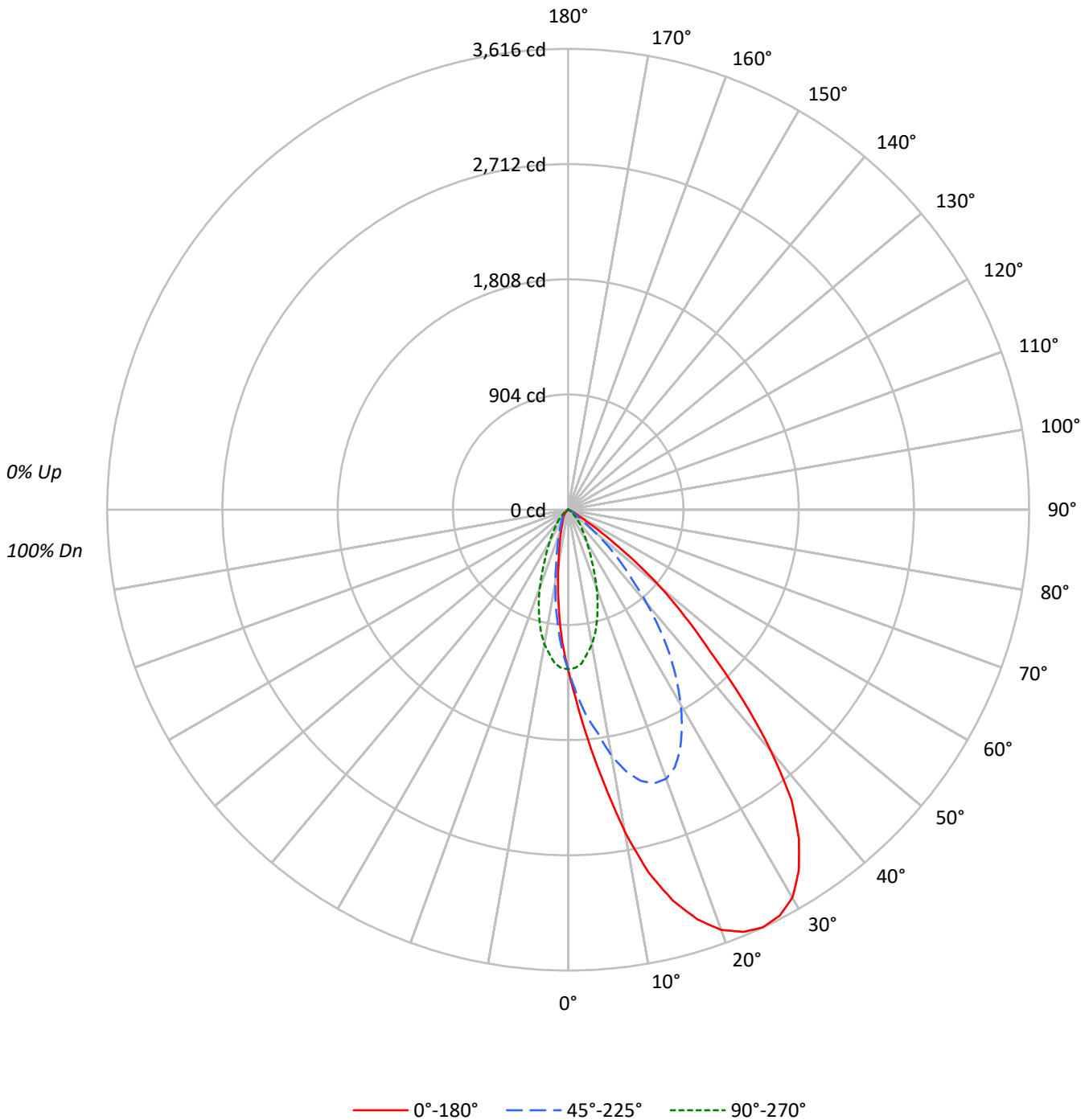
Input Watts (W): 27.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	98	96	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	95	92	89	92	90	87	90	87	85	83					83			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	77	76					76			
4	93	85	78	74	92	84	78	73	81	76	72	79	75	71	77	74	70	69					69			
5	88	78	71	66	86	77	71	66	75	70	66	73	69	65	72	68	64	63					63			
6	82	72	65	60	81	71	65	60	70	64	60	68	63	59	67	62	59	57					57			
7	77	67	60	55	76	66	60	55	65	59	55	63	58	54	62	58	54	52					52			
8	73	62	55	51	72	61	55	50	60	54	50	59	54	50	58	53	50	48					48			
9	69	58	51	47	68	57	51	46	56	50	46	55	50	46	54	49	46	44					44			
10	65	54	47	43	64	54	47	43	53	47	43	52	46	43	51	46	43	41					41			

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

	0°	90°	180°
0°	74745	74745	74745
5°	106627	70854	47490
10°	148562	62044	25169
15°	183145	50530	14220
20°	203171	37700	8891
25°	211893	25280	6270
30°	210131	17252	4978
35°	193787	11894	4055
40°	157770	8614	2893
45°	105002	5556	1801
50°	66656	3583	839
55°	25861	2369	166
60°	7513	1414	90
65°	4085	486	198
70°	1856	222	222
75°	255	255	127
80°	0	302	151
85°	0	373	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	120.7	6.3
10°-20°	361.6	18.9
20°-30°	526.5	27.5
30°-40°	509.2	26.6
40°-50°	296.2	15.5
50°-60°	81.1	4.2
60°-70°	15.2	0.8
70°-80°	2.5	0.1
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°	1008.8	52.7
0°-40°	1518.0	79.3
0°-60°	1895.4	99.0
0°-90°	1914.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1914.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1252	1252	1252	1252	1252	
5°	1821	1619	1210	918	811	196
15°	3175	2204	876	336	246	899
25°	3616	2076	431	143	107	1655
35°	3154	1388	194	81	66	1934
45°	1574	577	83	38	27	1254
55°	343	81	31	10	2	362
65°	45	26	5	2	2	48
75°	2	1	2	1	1	5
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°	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2
2.5°	1505.2	1496.5	1485.7	1499.8	1476.0	1479.2	1460.8	1469.5	1428.4	1436.0	1421.9
5°	1820.9	1810.1	1797.1	1782.0	1758.2	1752.8	1710.6	1707.4	1644.7	1618.7	1593.8
7.5°	2165.9	2160.5	2135.6	2108.5	2067.5	2029.6	1963.7	1945.3	1850.1	1764.7	1737.7
10°	2565.9	2559.5	2503.2	2490.3	2423.2	2352.9	2235.1	2173.4	2040.4	1960.4	1866.3
12.5°	2915.2	2896.8	2854.7	2830.9	2735.7	2653.5	2511.9	2407.0	2225.3	2103.1	1956.1
15°	3174.7	3165.0	3131.5	3099.0	3006.0	2910.9	2735.7	2610.3	2372.4	2203.7	2016.6
17.5°	3369.4	3353.1	3326.1	3289.3	3195.3	3075.2	2880.6	2741.1	2469.7	2250.2	2029.6
20°	3507.8	3491.5	3532.6	3420.2	3312.0	3193.1	2971.4	2806.0	2500.0	2247.0	1999.3
22.5°	3585.6	3506.7	3539.1	3496.9	3376.9	3245.0	3007.1	2807.1	2465.4	2186.4	1926.9
25°	3615.9	3539.1	3565.1	3514.2	3385.6	3235.3	2973.6	2739.0	2368.1	2076.1	1818.8
27.5°	3591.0	3577.0	3533.7	3475.3	3336.9	3161.7	2932.5	2598.4	2215.6	1931.2	1681.4
30°	3516.4	3492.6	3446.1	3383.4	3233.1	3021.2	2689.2	2395.1	2030.7	1766.9	1523.6
32.5°	3363.9	3352.1	3306.6	3220.1	3043.9	2795.2	2451.3	2159.4	1828.5	1580.9	1348.4
35°	3154.2	3148.8	3090.4	2977.9	2757.3	2490.3	2152.9	1916.1	1614.4	1388.4	1159.2
37.5°	2879.5	2854.7	2780.0	2646.0	2405.9	2157.2	1872.8	1666.3	1400.3	1175.4	973.2
40°	2476.2	2479.4	2390.8	2236.1	2031.8	1838.2	1593.8	1406.8	1157.0	958.0	772.1
42.5°	2033.9	2015.6	1948.5	1822.0	1676.0	1486.8	1263.0	1106.2	894.2	740.7	592.6
45°	1574.4	1540.9	1499.8	1407.9	1295.4	1168.9	993.7	870.5	703.9	577.4	444.4
47.5°	1242.4	1217.6	1191.6	1112.7	1027.2	908.3	775.3	673.7	535.2	422.8	320.1
50°	945.1	936.4	913.7	853.2	764.5	675.8	569.8	468.2	352.5	267.1	208.7
52.5°	618.5	656.4	593.6	564.4	486.6	412.0	333.0	254.1	186.0	144.9	116.8
55°	342.8	338.4	328.7	285.5	239.0	195.7	148.1	118.9	94.1	81.1	71.4
57.5°	167.6	168.7	156.8	134.1	109.2	95.2	81.1	73.5	64.9	59.5	55.1
60°	91.9	91.9	88.7	81.1	72.4	68.1	60.6	56.2	50.8	47.6	43.3
62.5°	63.8	62.7	61.6	58.4	55.1	50.8	46.5	43.3	38.9	36.8	32.4
65°	45.4	45.4	44.3	42.2	40.0	36.8	33.5	31.4	28.1	26.0	23.8
67.5°	31.4	30.3	30.3	30.3	27.0	26.0	22.7	21.6	18.4	16.2	15.1
70°	18.4	18.4	17.3	17.3	16.2	14.1	13.0	11.9	9.7	8.7	7.6
72.5°	7.6	7.6	7.6	7.6	6.5	6.5	5.4	4.3	4.3	3.2	3.2
75°	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
85°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
87.5°	0.0	0.0	0.0	0.0	0.0	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°	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2
2.5°	1408.9	1372.2	1360.3	1314.9	1313.8	1288.9	1259.7	1243.5	1216.5	1193.8	1181.9
5°	1562.5	1491.1	1454.4	1379.7	1354.9	1304.1	1250.0	1210.0	1161.3	1117.0	1083.5
7.5°	1681.4	1591.7	1520.3	1417.6	1335.4	1291.1	1213.2	1138.6	1085.6	1024.0	979.7
10°	1772.3	1654.4	1553.8	1424.1	1348.4	1251.1	1151.6	1071.6	993.7	915.9	859.6
12.5°	1833.9	1684.7	1557.1	1402.5	1304.1	1187.3	1072.7	982.9	886.7	803.4	738.5
15°	1854.4	1680.4	1527.9	1351.6	1233.8	1105.1	980.7	875.9	775.3	688.8	614.2
17.5°	1838.2	1640.3	1464.1	1281.3	1142.9	1003.5	874.8	766.6	662.8	568.8	493.1
20°	1789.6	1570.1	1377.6	1183.0	1042.4	894.2	763.4	650.9	547.1	456.3	393.6
22.5°	1704.1	1472.7	1272.7	1070.5	924.5	778.5	646.6	535.2	443.3	374.1	322.2
25°	1586.3	1346.2	1142.9	941.8	802.3	656.4	533.1	431.4	357.9	306.0	267.1
27.5°	1449.0	1213.2	1011.0	818.5	683.4	552.5	421.7	355.8	296.3	249.8	217.3
30°	1287.8	1056.4	871.5	694.2	564.4	436.8	348.2	288.7	245.5	206.5	182.7
32.5°	1121.3	911.5	739.6	575.3	450.9	352.5	286.5	239.0	201.1	173.0	152.5
35°	951.6	764.5	600.1	456.3	357.9	288.7	232.5	193.6	167.6	143.8	127.6
37.5°	785.0	615.3	472.5	351.4	283.3	230.3	189.2	161.1	139.5	122.2	109.2
40°	605.5	462.8	356.8	273.6	223.8	184.9	156.8	135.2	116.8	102.7	91.9
42.5°	456.3	350.3	277.9	220.6	180.6	152.5	128.7	111.4	95.2	83.3	75.7
45°	340.6	269.2	215.2	171.9	141.7	118.9	98.4	83.3	72.4	64.9	58.4
47.5°	248.7	197.9	159.0	122.2	100.6	84.3	71.4	62.7	57.3	51.9	47.6
50°	159.0	123.3	101.6	80.0	68.1	61.6	55.1	50.8	46.5	42.2	37.8
52.5°	90.8	75.7	66.0	58.4	53.0	49.7	44.3	40.0	35.7	32.4	29.2
55°	62.7	57.3	53.0	46.5	43.3	37.8	34.6	31.4	28.1	24.9	22.7
57.5°	50.8	46.5	41.1	36.8	32.4	30.3	28.1	23.8	21.6	18.4	16.2
60°	38.9	35.7	32.4	28.1	26.0	22.7	20.5	17.3	15.1	11.9	10.8
62.5°	29.2	27.0	23.8	20.5	18.4	15.1	13.0	10.8	9.7	7.6	5.4
65°	21.6	18.4	16.2	13.0	11.9	9.7	7.6	5.4	5.4	4.3	3.2
67.5°	13.0	10.8	9.7	7.6	6.5	5.4	4.3	3.2	2.2	2.2	2.2
70°	6.5	5.4	4.3	3.2	3.2	2.2	2.2	2.2	2.2	2.2	2.2
72.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	1.1	1.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	1.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	1.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	1.1	1.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
85°	1.1	1.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
87.5°	1.1	1.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2	1252.2
2.5°	1170.0	1144.0	1138.6	1111.6	1097.5	1098.6	1068.3	1069.4	1054.3	1047.8	1035.9
5°	1057.5	1019.7	969.9	959.1	925.6	918.0	878.0	864.0	840.2	824.0	816.4
7.5°	933.2	884.5	848.8	799.1	762.3	743.9	710.4	693.1	656.4	656.4	622.8
10°	799.1	743.9	702.8	648.8	605.5	578.5	545.0	513.6	490.9	466.0	455.2
12.5°	670.4	602.3	560.1	505.0	465.0	433.6	407.7	382.8	360.1	347.1	333.0
15°	545.0	477.9	439.0	393.6	360.1	336.3	309.3	293.0	276.8	266.0	260.6
17.5°	440.1	380.6	344.9	310.3	281.1	267.1	244.4	230.3	216.3	207.6	196.8
20°	349.3	306.0	277.9	248.7	226.0	210.9	195.7	182.7	175.2	166.5	162.2
22.5°	283.3	250.9	226.0	199.0	183.8	174.1	159.0	150.3	142.7	136.2	133.0
25°	231.4	203.3	184.9	166.5	151.4	142.7	135.2	125.4	120.0	114.6	111.4
27.5°	191.4	170.8	154.6	138.4	127.6	121.1	112.5	107.0	102.7	99.5	96.2
30°	161.1	142.7	130.8	118.9	109.2	104.9	98.4	94.1	89.7	87.6	85.4
32.5°	135.2	122.2	112.5	102.7	95.2	91.9	87.6	84.3	81.1	78.9	76.8
35°	114.6	102.7	97.3	90.8	84.3	81.1	76.8	74.6	72.4	69.2	68.1
37.5°	98.4	90.8	83.3	78.9	73.5	70.3	66.0	62.7	60.6	59.5	57.3
40°	83.3	76.8	71.4	66.0	60.6	58.4	54.1	51.9	50.8	48.7	46.5
42.5°	67.0	60.6	58.4	54.1	49.7	47.6	44.3	42.2	41.1	38.9	37.8
45°	54.1	49.7	47.6	43.3	40.0	37.8	34.6	32.4	31.4	29.2	28.1
47.5°	44.3	40.0	37.8	33.5	31.4	30.3	27.0	26.0	23.8	22.7	20.5
50°	33.5	31.4	29.2	26.0	24.9	22.7	20.5	18.4	16.2	15.1	14.1
52.5°	27.0	24.9	22.7	19.5	17.3	15.1	13.0	11.9	10.8	8.7	7.6
55°	20.5	18.4	15.1	13.0	11.9	9.7	7.6	6.5	5.4	4.3	3.2
57.5°	14.1	11.9	9.7	7.6	6.5	5.4	3.2	3.2	2.2	2.2	2.2
60°	8.7	6.5	5.4	4.3	3.2	2.2	2.2	2.2	2.2	1.1	1.1
62.5°	4.3	3.2	3.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
65°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
67.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
70°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1
72.5°	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1
75°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0
87.5°	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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: P130043

CATALOG NUMBER: HL618TAT - HLM6930 - HL6FL - 456P

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1252.2	1252.2	1252.2	1252.2
2.5°	1037.0	1028.3	1013.2	1046.7
5°	813.1	793.7	791.5	811.0
7.5°	615.3	595.8	592.6	606.6
10°	448.7	434.7	432.5	434.7
12.5°	325.5	322.2	316.8	320.1
15°	251.9	243.3	243.3	246.5
17.5°	193.6	190.3	187.1	189.2
20°	156.8	153.5	150.3	153.5
22.5°	128.7	126.5	124.4	126.5
25°	109.2	107.0	104.9	107.0
27.5°	95.2	93.0	91.9	93.0
30°	84.3	82.2	82.2	83.3
32.5°	75.7	74.6	73.5	74.6
35°	67.0	66.0	64.9	66.0
37.5°	56.2	55.1	54.1	55.1
40°	46.5	45.4	44.3	45.4
42.5°	36.8	34.6	34.6	35.7
45°	27.0	26.0	26.0	27.0
47.5°	19.5	19.5	19.5	19.5
50°	13.0	11.9	11.9	11.9
52.5°	7.6	6.5	6.5	6.5
55°	3.2	2.2	2.2	2.2
57.5°	1.1	1.1	1.1	1.1
60°	1.1	1.1	1.1	1.1
62.5°	2.2	2.2	1.1	2.2
65°	2.2	2.2	2.2	2.2
67.5°	2.2	2.2	2.2	2.2
70°	2.2	2.2	1.1	2.2
72.5°	1.1	1.1	1.1	1.1
75°	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1
80°	1.1	1.1	0.0	1.1
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)