

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: P130173

Luminaire Tested: **HL612ICAT - HLM6927 - HL6FL - 456W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130173
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: HL612ICAT - HLM6927 - HL6FL - 456W
Description: HALO ALLSLOPE 6" 21W, White Coilex Baffle, White Metal Trim Ring using 40 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1461.2 lumens
Efficiency: N/A
Efficacy: 76.5 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

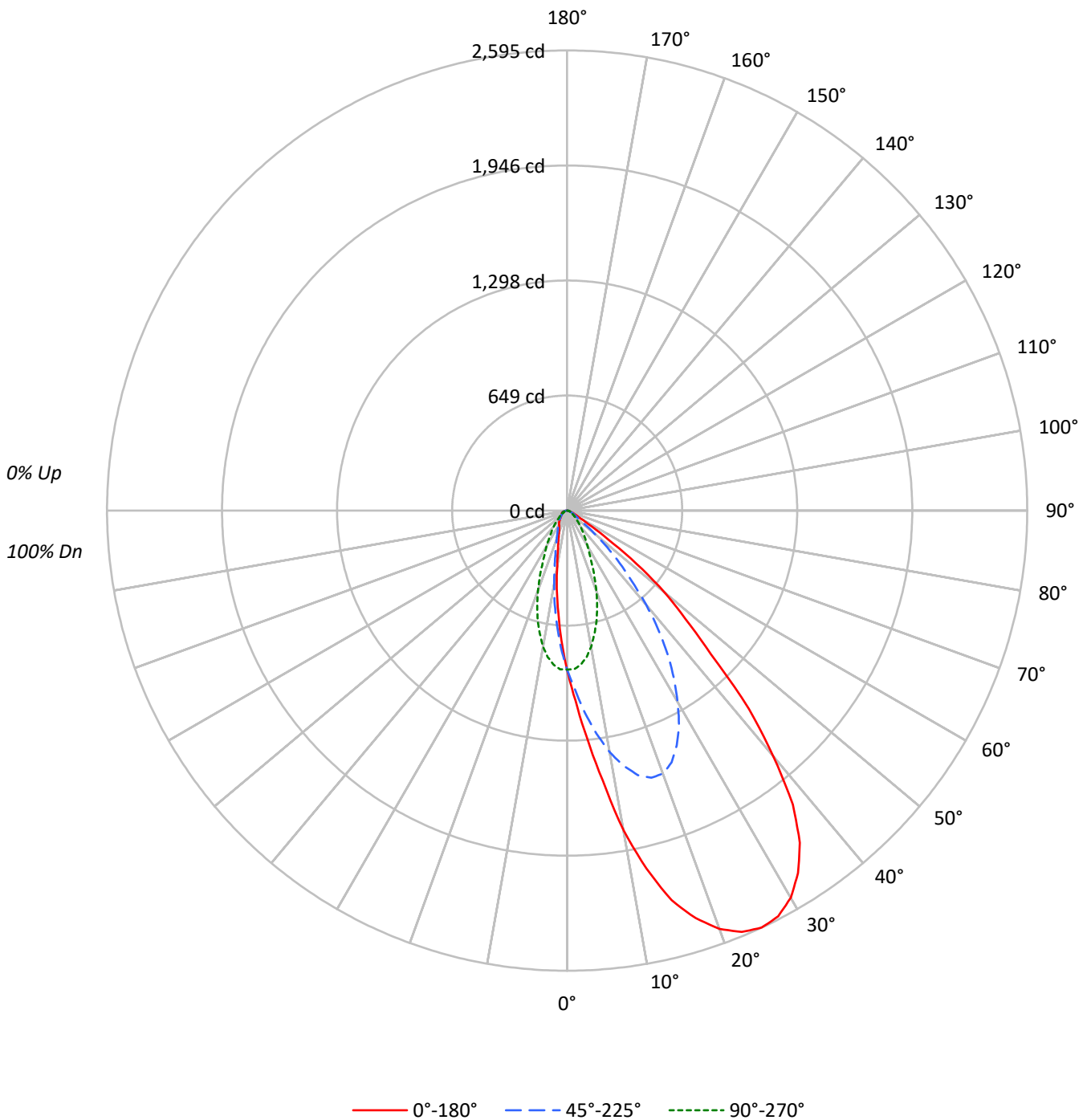
Input Watts (W): 19.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P130173

CATALOG NUMBER: HL612ICAT - HLM6927 - HL6FL - 456W

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	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°	53519	53519	53519
5°	75363	51109	33670
10°	105995	45126	18661
15°	131225	36967	11128
20°	145408	27807	7715
25°	152056	19156	6100
30°	150666	13726	5396
35°	140551	9928	4798
40°	115323	7563	4046
45°	76444	5416	3421
50°	50653	4105	2969
55°	20738	3289	2776
60°	6638	2632	2878
65°	3995	2069	2897
70°	2320	1856	2784
75°	1158	1679	2478
80°	836	1371	1988
85°	526	916	1171



TEST NUMBER: P130173

CATALOG NUMBER: HL612ICAT - HLM6927 - HL6FL - 456W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.7	5.9
10°-20°	260.2	17.8
20°-30°	381.5	26.1
30°-40°	374.4	25.6
40°-50°	228.3	15.6
50°-60°	78.4	5.4
60°-70°	30.2	2.1
70°-80°	16.0	1.1
80°-90°	5.6	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°	728.3	49.8
0°-40°	1102.7	75.5
0°-60°	1409.4	96.5
0°-90°	1461.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1461.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	897	897	897	897	897	
5°	1287	1143	873	650	575	139
15°	2275	1544	641	256	193	642
25°	2595	1461	327	126	104	1188
35°	2288	987	162	86	78	1400
45°	1146	420	81	55	51	923
55°	275	71	44	36	37	288
65°	44	31	23	28	32	46
75°	10	10	14	19	21	12
85°	3	4	5	7	7	3
90°	0	0	0	0	0	



TEST NUMBER: P130173

CATALOG NUMBER: HL612ICAT - HLM6927 - HL6FL - 456W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6
2.5°	1071.9	1061.9	1062.7	1056.6	1060.4	1067.3	1059.7	1037.4	1023.7	1009.9	1001.5
5°	1287.0	1284.8	1287.8	1268.7	1263.3	1261.8	1237.3	1204.4	1199.0	1143.1	1138.5
7.5°	1534.4	1526.7	1522.9	1488.4	1476.9	1458.6	1420.3	1368.2	1320.0	1269.4	1222.7
10°	1830.7	1806.9	1795.4	1753.3	1725.0	1682.1	1621.6	1532.8	1451.7	1382.8	1308.5
12.5°	2068.0	2051.2	2043.5	1996.8	1963.1	1891.9	1811.5	1690.5	1582.6	1474.6	1376.6
15°	2274.7	2249.5	2234.9	2184.4	2140.7	2072.6	1976.9	1833.7	1685.9	1544.3	1414.9
17.5°	2409.5	2390.3	2374.3	2326.8	2277.8	2198.2	2090.2	1923.3	1753.3	1579.5	1424.9
20°	2510.5	2489.1	2465.4	2416.4	2361.2	2276.3	2150.7	1970.8	1777.8	1578.8	1405.0
22.5°	2571.8	2541.2	2522.0	2463.8	2408.7	2313.8	2177.5	1972.3	1757.9	1537.4	1355.2
25°	2594.8	2564.9	2539.6	2476.1	2413.3	2306.1	2155.3	1926.4	1685.2	1460.8	1283.2
27.5°	2578.7	2546.5	2517.4	2452.4	2379.6	2253.3	2078.7	1826.8	1579.5	1366.7	1186.0
30°	2521.3	2491.4	2456.2	2389.6	2304.6	2155.3	1953.2	1684.4	1443.2	1244.9	1068.8
32.5°	2423.3	2396.5	2353.6	2280.1	2169.1	1996.8	1778.6	1512.1	1331.5	1120.1	947.1
35°	2287.7	2254.8	2196.6	2110.9	1971.5	1774.8	1565.0	1345.2	1163.0	986.9	817.7
37.5°	2090.2	2046.6	2002.9	1873.5	1721.2	1543.5	1363.6	1186.0	996.1	842.2	689.1
40°	1810.0	1772.5	1723.5	1585.6	1466.2	1323.0	1164.5	998.4	847.6	692.1	556.6
42.5°	1516.7	1457.8	1419.5	1320.0	1222.0	1080.3	926.4	779.4	656.9	536.7	429.5
45°	1146.2	1127.8	1087.2	1013.7	940.2	837.6	738.1	617.9	513.7	419.6	330.0
47.5°	904.2	887.4	856.8	802.4	749.6	663.8	577.3	482.4	394.3	305.5	240.4
50°	718.2	691.4	664.6	618.6	566.6	502.3	430.3	343.0	255.7	197.5	161.6
52.5°	492.3	473.9	454.0	417.3	375.2	325.4	255.7	192.2	145.5	114.1	94.9
55°	274.9	272.6	251.1	225.9	187.6	159.3	121.7	97.2	81.2	71.2	63.5
57.5°	140.9	137.8	122.5	108.7	95.7	81.9	72.0	65.1	60.5	55.9	53.6
60°	81.2	78.1	74.3	71.2	65.8	61.3	56.7	52.8	50.5	46.7	44.4
62.5°	58.2	58.2	55.9	53.6	51.3	48.2	45.2	42.9	41.3	38.3	36.8
65°	44.4	44.4	42.9	41.3	39.8	38.3	36.0	33.7	32.9	30.6	29.1
67.5°	33.7	32.9	32.2	31.4	29.9	29.1	26.8	25.3	24.5	23.0	22.2
70°	23.0	23.0	22.2	22.2	22.2	20.7	19.1	18.4	17.6	16.8	16.8
72.5°	14.5	14.5	14.5	14.5	13.8	13.0	13.0	13.0	13.0	12.3	12.3
75°	10.0	9.2	9.2	9.2	9.2	9.2	9.2	9.2	10.0	10.0	10.0
77.5°	6.9	6.9	6.9	6.9	6.9	7.7	7.7	7.7	8.4	8.4	9.2
80°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.9	6.9	7.7
82.5°	4.6	4.6	4.6	4.6	4.6	4.6	5.4	5.4	5.4	5.4	6.1
85°	3.1	3.1	3.1	3.1	3.1	3.1	3.8	3.8	3.8	3.8	3.8
87.5°	1.5	1.5	1.5	1.5	1.5	1.5	2.3	2.3	2.3	2.3	2.3
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: P130173

CATALOG NUMBER: HL612ICAT - HLM6927 - HL6FL - 456W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6
2.5°	994.6	987.7	960.1	950.2	947.1	911.9	917.2	895.8	877.4	861.3	847.6
5°	1096.4	1075.0	1023.7	996.9	975.4	921.8	908.8	872.8	839.1	810.8	781.0
7.5°	1183.7	1140.0	1068.8	1025.2	984.6	912.6	883.6	833.8	785.6	745.7	705.9
10°	1247.2	1182.2	1093.3	1032.9	973.9	883.6	839.9	779.4	715.9	669.9	624.0
12.5°	1290.1	1205.9	1096.4	1014.5	941.0	838.4	784.8	710.5	644.7	592.6	535.2
15°	1304.7	1201.3	1075.7	979.3	891.2	785.6	718.9	640.8	568.1	506.1	454.0
17.5°	1293.9	1173.0	1032.1	925.7	827.7	714.3	643.1	560.5	486.9	429.5	370.6
20°	1256.4	1122.4	973.1	857.5	753.4	639.3	562.7	480.1	408.1	349.1	300.1
22.5°	1196.7	1053.5	897.3	776.4	673.8	560.5	480.1	401.2	333.1	286.4	249.6
25°	1115.5	970.1	810.1	692.1	588.8	472.4	398.9	326.9	274.9	238.9	209.8
27.5°	1016.8	870.5	718.9	605.6	503.0	396.6	326.9	272.6	230.5	202.9	177.6
30°	908.1	767.9	624.0	511.5	418.8	322.3	271.0	229.7	196.0	172.3	153.1
32.5°	792.4	665.3	529.1	423.4	336.9	267.2	226.6	193.7	166.1	147.8	132.5
35°	675.3	557.4	434.9	339.2	273.3	222.0	188.3	161.6	142.4	127.1	115.6
37.5°	565.8	452.5	340.7	269.5	220.5	180.7	157.0	137.1	122.5	111.0	101.8
40°	441.0	344.5	261.1	214.4	180.7	150.1	134.0	118.7	106.4	97.2	90.3
42.5°	335.4	264.9	212.1	175.3	148.5	126.3	113.3	100.3	91.1	81.9	76.6
45°	254.2	207.5	170.0	138.6	121.7	102.6	91.1	81.2	74.3	69.7	65.8
47.5°	189.9	154.7	125.6	103.4	91.9	77.3	71.2	65.8	62.8	61.3	58.2
50°	127.9	103.4	85.0	74.3	68.9	62.0	60.5	58.2	55.1	52.8	50.5
52.5°	79.6	69.7	62.8	59.7	58.2	55.9	52.8	50.5	47.5	46.7	45.2
55°	59.7	57.4	53.6	51.3	49.8	45.9	44.4	43.6	42.1	41.3	39.8
57.5°	50.5	48.2	45.2	42.9	42.1	39.8	39.0	36.8	36.0	35.2	34.5
60°	42.1	40.6	38.3	36.8	36.0	33.7	32.9	32.2	31.4	30.6	29.9
62.5°	34.5	33.7	31.4	30.6	29.9	28.3	27.6	27.6	26.8	26.8	26.0
65°	27.6	26.8	25.3	24.5	23.7	23.0	23.7	23.0	23.0	23.7	23.7
67.5°	21.4	21.4	19.9	19.9	19.9	19.1	19.9	19.9	20.7	21.4	22.2
70°	16.1	16.1	16.1	16.1	16.8	16.8	17.6	18.4	19.1	19.9	20.7
72.5°	12.3	13.0	13.0	13.8	14.5	14.5	16.1	16.1	16.8	17.6	18.4
75°	10.7	11.5	11.5	12.3	13.0	13.0	13.8	14.5	15.3	15.3	16.1
77.5°	9.2	10.0	10.0	10.7	11.5	11.5	12.3	12.3	13.0	13.8	13.8
80°	7.7	7.7	8.4	8.4	9.2	9.2	10.0	10.0	10.0	10.7	10.7
82.5°	6.1	6.1	6.1	6.9	6.9	6.9	7.7	7.7	7.7	8.4	8.4
85°	3.8	4.6	4.6	4.6	4.6	4.6	5.4	5.4	5.4	5.4	5.4
87.5°	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1	3.1	3.1	3.1
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: P130173

CATALOG NUMBER: HL612ICAT - HLM6927 - HL6FL - 456W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6	896.6
2.5°	835.3	829.2	811.6	803.2	791.7	777.9	769.5	768.7	772.5	746.5	741.1
5°	758.8	738.1	708.2	691.4	666.1	650.0	636.3	630.1	619.4	605.6	589.5
7.5°	673.8	642.4	610.2	581.1	558.2	532.9	515.3	497.7	490.0	471.6	459.4
10°	585.0	549.0	509.2	475.5	448.7	418.8	399.7	382.8	369.8	353.7	340.7
12.5°	491.5	453.3	405.8	374.4	347.6	323.1	303.2	293.2	282.5	273.3	259.6
15°	405.0	362.1	324.6	296.3	275.6	255.7	243.5	233.5	222.8	213.6	207.5
17.5°	325.4	291.7	262.6	240.4	223.6	207.5	196.8	188.3	182.2	171.5	168.4
20°	267.2	239.6	218.2	199.8	183.8	171.5	162.3	157.7	153.1	144.7	140.9
22.5°	222.8	202.1	182.2	166.9	157.7	147.0	139.3	134.8	130.9	124.8	123.3
25°	186.8	171.5	155.4	144.7	134.8	126.3	121.7	117.9	114.8	110.3	108.7
27.5°	160.8	147.8	134.8	125.6	118.7	112.5	106.4	105.7	104.9	100.3	99.5
30°	138.6	128.6	118.7	111.8	106.4	101.8	98.8	95.7	96.5	93.4	92.6
32.5°	121.7	114.1	106.4	100.3	97.2	93.4	91.1	91.1	90.3	87.3	87.3
35°	107.2	101.8	96.5	91.9	89.6	86.5	84.2	83.5	83.5	79.6	79.6
37.5°	96.5	91.1	86.5	83.5	81.2	77.3	75.8	75.0	74.3	72.0	72.0
40°	84.2	80.4	76.6	73.5	71.2	68.9	67.4	67.4	67.4	65.1	65.1
42.5°	72.0	69.7	67.4	65.1	64.3	62.0	60.5	60.5	60.5	57.4	58.2
45°	63.5	62.8	60.5	58.2	56.7	55.1	53.6	54.4	54.4	52.1	52.8
47.5°	56.7	55.1	52.8	51.3	50.5	49.8	49.0	49.0	49.0	47.5	47.5
50°	49.8	48.2	47.5	46.7	45.9	45.2	43.6	43.6	43.6	42.9	42.9
52.5°	44.4	43.6	42.1	41.3	41.3	39.8	39.8	38.3	39.8	38.3	39.0
55°	39.0	38.3	37.5	36.8	36.8	36.0	36.0	36.0	36.0	36.0	36.8
57.5°	33.7	33.7	32.9	32.9	32.9	32.2	32.9	33.7	34.5	33.7	35.2
60°	29.9	29.9	29.1	29.9	30.6	30.6	31.4	32.2	33.7	33.7	34.5
62.5°	26.0	27.6	27.6	28.3	29.1	29.9	30.6	31.4	32.9	32.2	33.7
65°	24.5	25.3	26.0	26.8	28.3	28.3	29.1	29.9	30.6	30.6	32.2
67.5°	23.0	24.5	24.5	25.3	26.0	26.0	27.6	28.3	29.1	29.1	29.9
70°	21.4	22.2	23.0	23.7	24.5	24.5	25.3	26.0	26.8	26.0	26.8
72.5°	19.1	19.9	20.7	20.7	21.4	21.4	22.2	23.0	23.7	23.7	24.5
75°	16.8	17.6	17.6	18.4	19.1	19.1	19.9	19.9	20.7	20.7	21.4
77.5°	14.5	14.5	15.3	15.3	16.1	16.1	16.8	16.8	17.6	17.6	17.6
80°	11.5	12.3	12.3	12.3	13.0	13.0	13.0	13.8	13.8	13.8	14.5
82.5°	8.4	9.2	9.2	9.2	10.0	10.0	10.0	10.0	10.7	10.7	10.7
85°	6.1	6.1	6.1	6.1	6.1	6.9	6.9	6.9	6.9	6.9	6.9
87.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
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: P130173

CATALOG NUMBER: HL612ICAT - HLM6927 - HL6FL - 456W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	896.6	896.6	896.6	896.6
2.5°	748.0	744.2	733.5	731.2
5°	592.6	585.0	577.3	575.0
7.5°	460.2	450.2	439.5	444.8
10°	330.8	329.2	323.9	322.3
12.5°	252.7	251.1	246.5	241.9
15°	200.6	200.6	196.8	192.9
17.5°	161.6	163.1	158.5	156.2
20°	137.1	136.3	134.8	133.2
22.5°	119.4	119.4	118.7	115.6
25°	105.7	106.4	105.7	104.1
27.5°	97.2	98.0	97.2	96.5
30°	91.1	91.1	90.3	90.3
32.5°	85.8	85.8	85.8	85.0
35°	78.1	78.9	78.1	78.1
37.5°	70.4	70.4	70.4	70.4
40°	63.5	64.3	64.3	63.5
42.5°	56.7	56.7	56.7	55.9
45°	51.3	52.1	51.3	51.3
47.5°	46.7	46.7	46.7	45.9
50°	42.1	42.1	42.1	42.1
52.5°	38.3	38.3	39.0	38.3
55°	36.0	36.8	36.8	36.8
57.5°	35.2	35.2	36.0	36.0
60°	34.5	34.5	35.2	35.2
62.5°	32.9	34.5	33.7	33.7
65°	31.4	31.4	32.2	32.2
67.5°	29.1	29.9	29.9	29.9
70°	26.8	26.8	27.6	27.6
72.5°	23.7	24.5	24.5	24.5
75°	20.7	21.4	21.4	21.4
77.5°	17.6	17.6	18.4	18.4
80°	14.5	14.5	14.5	14.5
82.5°	10.7	10.7	10.7	10.7
85°	6.9	6.9	6.9	6.9
87.5°	3.1	3.1	3.1	3.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)