

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: P130071

Luminaire Tested: **HL618TAT - HLM6927 - HL6NFL - 455TBZ**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130071
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33470)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6927 - HL6NFL - 455TBZ
Description: HALO ALLSLOPE 6" 30W, Tuscan Bronze Reflector, Tuscan Bronze Metal Trim Ring using 25 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: 1850.0 lumens
Efficiency: N/A
Efficacy: 67.0 lumens/watt
Spacing Criteria (0/90/45): 1.88 / 0.71 / 1.15
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

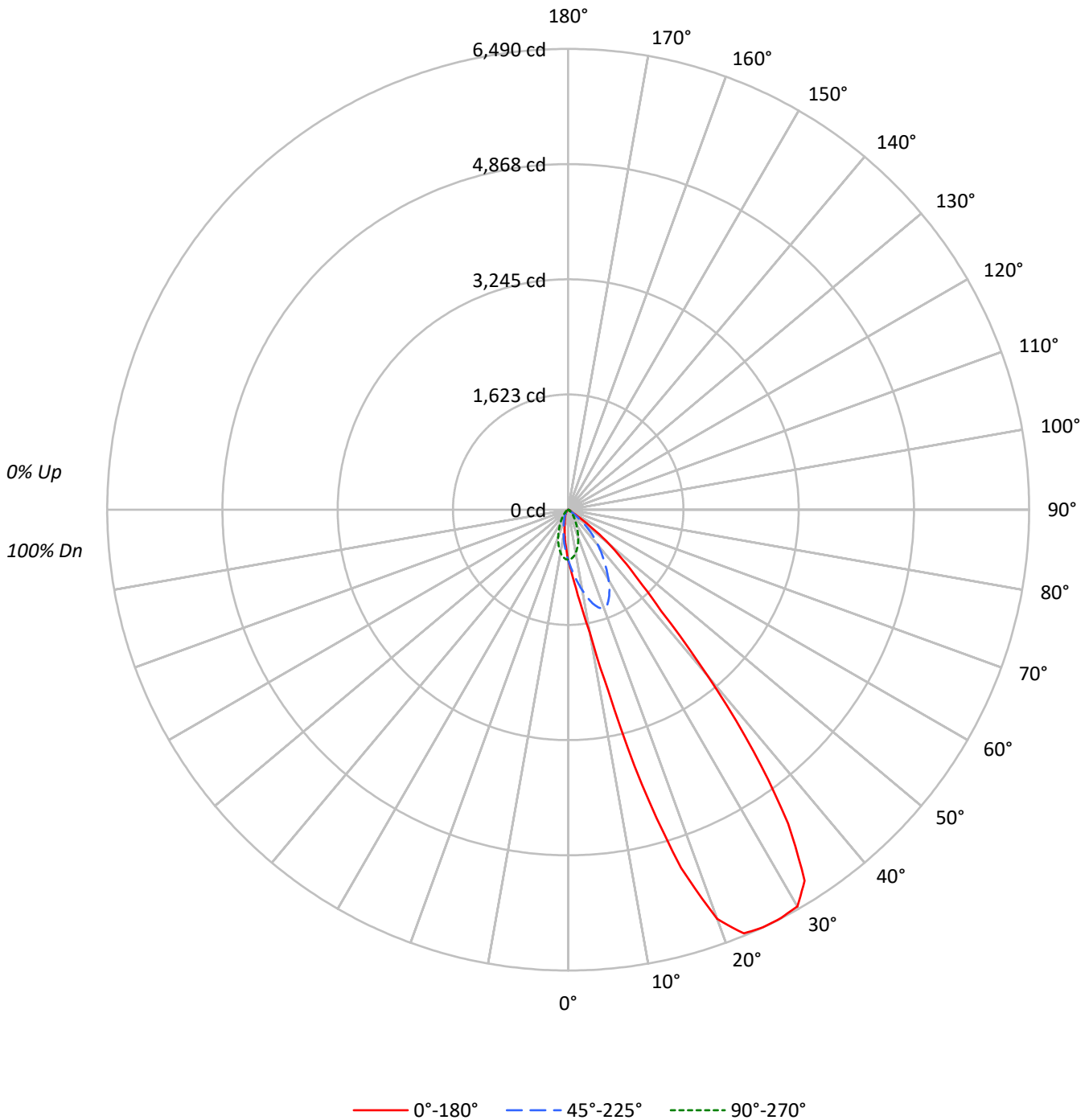
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	100	100	100	100		
1	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92	92	92	92	92	92	92		
2	106	100	96	92	104	99	94	91	95	92	89	92	89	87	90	87	85	83	83	83	83	83	83	83		
3	100	92	86	82	97	91	85	81	88	84	80	85	82	79	83	80	77	76	76	76	76	76	76	76		
4	93	85	78	73	91	83	77	73	81	76	72	79	75	71	77	73	70	69	69	69	69	69	69	69		
5	88	78	71	66	86	77	71	66	75	69	65	73	68	65	72	67	64	62	62	62	62	62	62	62		
6	82	72	65	60	80	71	64	60	69	63	59	68	63	59	66	62	58	57	57	57	57	57	57	57		
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52	52	52	52	52	52	52		
8	72	61	54	50	71	61	54	50	60	54	49	58	53	49	57	52	49	47	47	47	47	47	47	47		
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43	43	43	43	43	43	43		
10	64	53	46	42	63	52	46	42	52	46	42	51	45	41	50	45	41	40	40	40	40	40	40	40		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	42022	42022	42022
5°	60906	39878	27054
10°	101965	35550	16733
15°	231113	29998	11019
20°	355188	23921	7703
25°	380340	17815	5801
30°	385459	13147	4601
35°	331660	9646	3502
40°	194470	7072	2676
45°	92711	4669	1601
50°	53319	3033	776
55°	14786	1961	151
60°	3924	1308	0
65°	2519	630	0
70°	1311	202	0
75°	463	232	0
80°	0	274	0
85°	0	339	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.5	3.8
10°-20°	303.4	16.4
20°-30°	608.8	32.9
30°-40°	549.0	29.7
40°-50°	245.6	13.3
50°-60°	57.9	3.1
60°-70°	11.2	0.6
70°-80°	2.5	0.1
80°-90°	1.2	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°	982.7	53.1
0°-40°	1531.6	82.8
0°-60°	1835.1	99.2
0°-90°	1850.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1850.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	704	704	704	704	704	
5°	1040	914	681	528	462	121
15°	4006	1378	520	250	191	1192
25°	6490	1361	304	126	99	2980
35°	5398	882	157	74	57	3197
45°	1390	441	70	34	24	1192
55°	196	56	26	9	2	241
65°	28	20	7	2	0	28
75°	4	2	2	1	0	5
85°	0	2	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°	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0
2.5°	843.1	845.1	840.1	827.0	835.0	824.0	814.0	815.0	800.0	807.0	787.0
5°	1040.1	1035.1	1034.1	1009.1	1008.1	986.1	977.1	951.1	923.1	914.1	880.1
7.5°	1330.1	1311.1	1290.1	1263.1	1245.1	1200.1	1166.1	1115.1	1063.1	1033.1	972.1
10°	1761.1	1737.1	1701.1	1636.1	1584.1	1494.1	1403.1	1311.1	1223.1	1157.1	1061.1
12.5°	2611.2	2533.2	2383.1	2225.1	2099.1	1887.1	1689.1	1538.1	1390.1	1275.1	1139.1
15°	4006.2	3889.2	3679.2	3332.2	2958.2	2467.1	2089.1	1782.1	1554.1	1378.1	1195.1
17.5°	5287.3	5182.3	4921.3	4444.3	3991.2	3247.2	2541.2	2046.1	1686.1	1449.1	1223.1
20°	6132.4	6107.4	5843.3	5319.3	4746.3	3952.2	3021.2	2245.1	1766.1	1472.1	1216.1
22.5°	6458.4	6467.4	6285.4	5831.3	5219.3	4316.3	3281.2	2323.1	1769.1	1442.1	1173.1
25°	6490.4	6534.4	6425.4	6009.4	5375.3	4408.3	3256.2	2239.1	1670.1	1361.1	1098.1
27.5°	6483.4	6526.4	6410.4	5948.4	5230.3	4202.3	2954.2	2048.1	1560.1	1257.1	989.1
30°	6450.4	6473.4	6258.4	5672.3	4810.3	3717.2	2523.2	1811.1	1406.1	1135.1	921.1
32.5°	6194.4	6197.4	5792.3	5069.3	4133.2	2988.2	2070.1	1553.1	1231.1	1006.1	827.0
35°	5398.3	5331.3	4858.3	4188.3	3203.2	2290.1	1680.1	1322.1	1067.1	882.1	726.0
37.5°	4291.3	4219.3	3789.2	3079.2	2274.1	1773.1	1395.1	1120.1	924.1	771.0	627.0
40°	3052.2	2917.2	2595.2	2104.1	1710.1	1396.1	1148.1	937.1	790.0	656.0	533.0
42.5°	1934.1	1938.1	1770.1	1523.1	1330.1	1114.1	928.1	778.0	654.0	541.0	438.0
45°	1390.1	1380.1	1291.1	1152.1	1034.1	888.1	760.0	640.0	534.0	441.0	354.0
47.5°	1042.1	1034.1	987.1	896.1	810.0	720.0	614.0	512.0	426.0	339.0	267.0
50°	756.0	768.0	730.0	662.0	594.0	521.0	440.0	349.0	284.0	219.0	165.0
52.5°	432.0	449.0	422.0	375.0	336.0	285.0	235.0	183.0	144.0	108.0	87.0
55°	196.0	185.0	178.0	160.0	139.0	116.0	97.0	79.0	66.0	56.0	51.0
57.5°	72.0	71.0	71.0	65.0	60.0	56.0	51.0	47.0	45.0	42.0	41.0
60°	48.0	48.0	47.0	45.0	44.0	43.0	41.0	39.0	37.0	34.0	32.0
62.5°	36.0	37.0	36.0	35.0	35.0	34.0	32.0	31.0	29.0	27.0	26.0
65°	28.0	28.0	28.0	27.0	27.0	26.0	25.0	24.0	22.0	20.0	19.0
67.5°	20.0	20.0	20.0	20.0	19.0	19.0	18.0	16.0	16.0	14.0	13.0
70°	13.0	13.0	13.0	13.0	12.0	12.0	11.0	11.0	10.0	9.0	8.0
72.5°	8.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0	6.0	5.0	4.0
75°	4.0	4.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
77.5°	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
80°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0
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°	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0
2.5°	780.0	763.0	752.0	742.0	731.0	718.0	707.0	699.0	685.0	684.0	665.0
5°	858.1	828.0	800.0	775.0	752.0	726.0	702.0	681.0	657.0	644.0	617.0
7.5°	933.1	882.1	838.1	798.0	760.0	720.0	684.0	653.0	617.0	597.0	559.0
10°	993.1	925.1	862.1	807.0	755.0	703.0	656.0	614.0	572.0	542.0	501.0
12.5°	1021.1	948.1	867.1	799.0	734.0	672.0	616.0	569.0	523.0	491.0	445.0
15°	1066.1	950.1	856.1	775.0	700.0	632.0	568.0	520.0	471.0	432.0	385.0
17.5°	1064.1	935.1	829.0	738.0	656.0	583.0	519.0	466.0	414.0	375.0	330.0
20°	1038.1	901.1	787.0	692.0	606.0	528.0	465.0	413.0	358.0	321.0	287.0
22.5°	988.1	851.1	736.0	637.0	549.0	472.0	407.0	356.0	306.0	272.0	235.0
25°	923.1	790.0	672.0	577.0	493.0	415.0	352.0	304.0	261.0	230.0	207.0
27.5°	852.1	720.0	605.0	513.0	434.0	357.0	302.0	259.0	222.0	195.0	170.0
30°	772.0	645.0	537.0	452.0	371.0	304.0	257.0	220.0	188.0	167.0	147.0
32.5°	688.0	566.0	468.0	388.0	316.0	258.0	217.0	186.0	160.0	143.0	126.0
35°	596.0	490.0	400.0	327.0	266.0	217.0	182.0	157.0	136.0	123.0	108.0
37.5°	511.0	416.0	336.0	272.0	221.0	180.0	153.0	132.0	115.0	105.0	93.0
40°	427.0	341.0	276.0	223.0	181.0	149.0	127.0	111.0	97.0	89.0	82.0
42.5°	348.0	281.0	224.0	180.0	147.0	123.0	104.0	90.0	79.0	73.0	65.0
45°	277.0	222.0	176.0	143.0	114.0	94.0	80.0	70.0	62.0	58.0	51.0
47.5°	203.0	158.0	127.0	99.0	82.0	68.0	59.0	53.0	48.0	46.0	43.0
50°	124.0	96.0	79.0	64.0	56.0	50.0	46.0	43.0	39.0	36.0	32.0
52.5°	68.0	57.0	52.0	47.0	44.0	40.0	37.0	34.0	30.0	28.0	25.0
55°	46.0	44.0	42.0	38.0	35.0	31.0	28.0	26.0	24.0	22.0	20.0
57.5°	38.0	36.0	33.0	30.0	27.0	24.0	22.0	21.0	18.0	17.0	15.0
60°	30.0	28.0	26.0	24.0	22.0	19.0	18.0	16.0	14.0	12.0	11.0
62.5°	23.0	21.0	20.0	18.0	16.0	14.0	13.0	11.0	10.0	8.0	7.0
65°	17.0	16.0	14.0	13.0	11.0	10.0	9.0	7.0	6.0	5.0	4.0
67.5°	12.0	11.0	10.0	8.0	7.0	6.0	5.0	4.0	3.0	3.0	2.0
70°	7.0	6.0	6.0	5.0	4.0	3.0	3.0	2.0	2.0	2.0	2.0
72.5°	4.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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°	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0	704.0
2.5°	651.0	646.0	654.0	625.0	620.0	621.0	616.0	604.0	595.0	594.0	586.0
5°	592.0	579.0	568.0	544.0	534.0	528.0	518.0	502.0	492.0	489.0	478.0
7.5°	530.0	512.0	497.0	466.0	455.0	447.0	431.0	416.0	401.0	397.0	381.0
10°	472.0	446.0	430.0	393.0	379.0	370.0	349.0	337.0	324.0	316.0	308.0
12.5°	409.0	384.0	361.0	332.0	315.0	304.0	286.0	272.0	264.0	257.0	247.0
15°	349.0	325.0	304.0	276.0	261.0	250.0	235.0	223.0	215.0	209.0	202.0
17.5°	296.0	273.0	253.0	230.0	216.0	207.0	196.0	179.0	177.0	174.0	170.0
20°	250.0	229.0	212.0	192.0	181.0	174.0	164.0	156.0	149.0	146.0	140.0
22.5°	210.0	192.0	178.0	162.0	154.0	147.0	139.0	134.0	126.0	124.0	120.0
25°	178.0	164.0	153.0	139.0	133.0	126.0	119.0	114.0	109.0	107.0	104.0
27.5°	150.0	141.0	132.0	120.0	114.0	110.0	103.0	99.0	95.0	93.0	91.0
30°	131.0	121.0	114.0	104.0	100.0	96.0	91.0	87.0	84.0	81.0	80.0
32.5°	114.0	106.0	101.0	92.0	89.0	85.0	81.0	77.0	74.0	72.0	69.0
35°	99.0	92.0	88.0	81.0	79.0	74.0	70.0	67.0	64.0	62.0	60.0
37.5°	85.0	80.0	77.0	70.0	68.0	64.0	60.0	58.0	55.0	53.0	51.0
40°	72.0	68.0	64.0	59.0	56.0	53.0	50.0	48.0	46.0	45.0	43.0
42.5°	59.0	55.0	52.0	48.0	46.0	44.0	41.0	39.0	38.0	36.0	34.0
45°	47.0	45.0	42.0	38.0	37.0	34.0	31.0	30.0	28.0	26.0	25.0
47.5°	38.0	35.0	33.0	29.0	27.0	25.0	24.0	22.0	21.0	20.0	19.0
50°	29.0	27.0	25.0	23.0	21.0	20.0	18.0	16.0	15.0	14.0	13.0
52.5°	23.0	21.0	20.0	17.0	16.0	14.0	13.0	11.0	10.0	9.0	8.0
55°	18.0	16.0	15.0	12.0	11.0	9.0	8.0	7.0	6.0	5.0	4.0
57.5°	13.0	11.0	10.0	8.0	7.0	6.0	4.0	3.0	2.0	2.0	1.0
60°	9.0	8.0	6.0	5.0	4.0	3.0	2.0	1.0	1.0	1.0	1.0
62.5°	6.0	5.0	4.0	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
65°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
70°	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
72.5°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
75°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
77.5°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
80°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
82.5°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
85°	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
87.5°	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	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: P130071

CATALOG NUMBER: HL618TAT - HLM6927 - HL6NFL - 455TBZ

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	704.0	704.0	704.0	704.0
2.5°	598.0	590.0	576.0	572.0
5°	484.0	478.0	469.0	462.0
7.5°	384.0	377.0	373.0	366.0
10°	306.0	300.0	296.0	289.0
12.5°	248.0	242.0	236.0	234.0
15°	202.0	199.0	192.0	191.0
17.5°	166.0	163.0	161.0	158.0
20°	142.0	138.0	135.0	133.0
22.5°	121.0	118.0	115.0	115.0
25°	103.0	102.0	100.0	99.0
27.5°	91.0	90.0	88.0	87.0
30°	81.0	79.0	78.0	77.0
32.5°	70.0	68.0	67.0	67.0
35°	60.0	58.0	57.0	57.0
37.5°	52.0	50.0	49.0	49.0
40°	43.0	42.0	42.0	42.0
42.5°	35.0	33.0	33.0	33.0
45°	25.0	24.0	24.0	24.0
47.5°	19.0	18.0	17.0	17.0
50°	13.0	12.0	12.0	11.0
52.5°	8.0	7.0	6.0	6.0
55°	3.0	3.0	2.0	2.0
57.5°	1.0	0.0	0.0	0.0
60°	1.0	0.0	0.0	0.0
62.5°	1.0	1.0	0.0	0.0
65°	1.0	0.0	0.0	0.0
67.5°	1.0	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)