

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: P130065

Luminaire Tested: **HL618TAT - HLM6935 - HL6NFL - 455H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130065
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33467)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6935 - HL6NFL - 455H
Description: HALO ALLSLOPE 6" 30W, Semi-Specular Haze Reflector, White Metal Trim Ring using 25 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2198.0 lumens
Efficiency: N/A
Efficacy: 79.6 lumens/watt
Spacing Criteria (0/90/45): 1.94 / 0.73 / 1.15
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

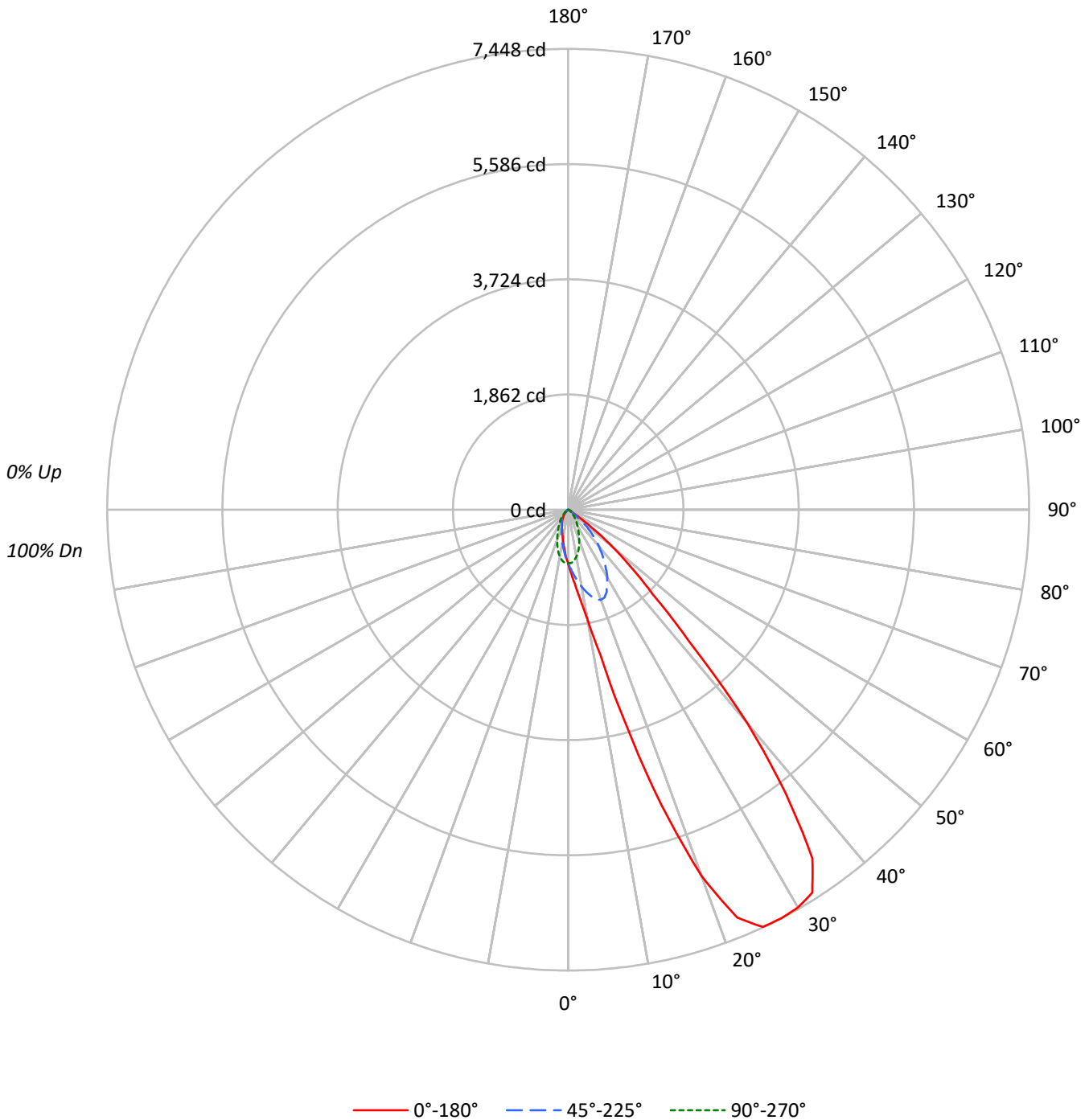
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455H

Luminous Intensity Polar Plot





TEST NUMBER: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455H

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	109	107	104	110	107	105	102	103	101	99	99	98	96	96	95	93	92					92			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	85	83					83			
3	99	92	86	81	97	90	85	80	87	83	79	85	81	78	83	79	77	75					75			
4	93	84	77	72	91	83	77	72	80	75	71	78	74	70	76	73	69	68					68			
5	87	77	70	65	85	76	70	65	74	68	64	72	67	64	71	66	63	61					61			
6	81	71	64	59	80	70	63	58	68	62	58	67	62	58	65	61	57	56					56			
7	76	65	58	53	75	65	58	53	63	57	53	62	56	52	61	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	44	66	55	49	44	54	48	44	53	48	44	52	47	44	42					42			
10	63	52	45	40	62	51	45	40	50	44	40	50	44	40	49	44	40	38					38			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	51776	51776	51776
5°	69959	49680	38601
10°	103986	44547	28237
15°	205355	37705	21518
20°	364947	30118	17092
25°	436051	23229	13830
30°	443662	17832	11181
35°	422686	13682	8687
40°	286747	10430	6454
45°	128985	7276	4528
50°	67375	4944	2673
55°	16046	3357	1260
60°	4824	2183	548
65°	3104	1206	198
70°	1685	454	111
75°	521	255	0
80°	0	302	0
85°	0	373	0



TEST NUMBER: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.9	3.9
10°-20°	323.1	14.7
20°-30°	681.8	31.0
30°-40°	686.2	31.2
40°-50°	325.8	14.8
50°-60°	75.4	3.4
60°-70°	16.0	0.7
70°-80°	3.3	0.1
80°-90°	1.4	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°	1089.9	49.6
0°-40°	1776.1	80.8
0°-60°	2177.3	99.1
0°-90°	2198.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2198.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	867	867	867	867	867	
5°	1195	1059	848	697	659	132
15°	3560	1452	654	408	373	1131
25°	7441	1468	396	246	236	3355
35°	6880	1009	223	154	141	4037
45°	1934	527	109	77	68	1697
55°	213	68	44	27	17	291
65°	34	26	13	6	2	35
75°	4	3	2	2	0	6
85°	0	2	2	1	0	0
90°	0	0	0	0	0	



TEST NUMBER: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4
2.5°	1016.6	987.6	999.9	974.3	1002.1	979.8	979.8	970.9	965.3	957.6	935.3
5°	1194.7	1158.0	1168.0	1152.4	1160.2	1132.4	1120.1	1095.6	1100.1	1058.9	1021.0
7.5°	1434.1	1381.8	1398.5	1352.8	1349.5	1313.9	1279.3	1234.8	1196.9	1162.4	1105.6
10°	1796.0	1726.9	1729.2	1652.3	1634.5	1553.2	1487.6	1399.6	1323.9	1267.1	1176.9
12.5°	2396.1	2269.2	2250.3	2107.7	2034.2	1867.2	1725.8	1586.6	1459.7	1361.7	1238.1
15°	3559.7	3378.2	3229.0	2882.7	2631.0	2312.6	2035.4	1804.9	1615.6	1451.9	1289.4
17.5°	4989.3	4742.1	4570.7	4104.1	3607.5	2907.2	2418.4	2023.1	1735.8	1519.8	1317.2
20°	6300.9	5982.5	5706.4	5163.0	4567.3	3769.0	2768.0	2214.6	1821.6	1549.9	1309.4
22.5°	7133.8	6889.9	6627.2	5983.6	5257.6	4286.7	3165.5	2338.2	1849.4	1534.3	1266.0
25°	7441.1	7221.7	7082.6	6436.8	5651.8	4623.0	3284.6	2343.8	1808.2	1467.5	1207.0
27.5°	7447.8	7251.8	7182.8	6557.0	5718.6	4496.1	3173.3	2223.5	1706.9	1348.4	1126.8
30°	7424.4	7227.3	7110.4	6392.2	5462.5	4187.6	2867.1	2012.0	1567.7	1263.7	1036.6
32.5°	7337.5	7093.7	6808.7	5935.7	4928.1	3583.0	2440.7	1777.0	1391.8	1137.9	949.8
35°	6879.9	6569.3	6094.9	5167.5	4097.4	2837.0	2004.2	1528.7	1221.4	1008.8	828.4
37.5°	5759.8	5500.4	5049.4	4149.8	3049.7	2169.0	1665.7	1316.1	1063.3	889.6	724.8
40°	4500.5	4202.1	3675.5	2917.2	2225.8	1705.8	1359.5	1109.0	919.7	768.3	619.1
42.5°	2894.9	2764.7	2449.6	2018.7	1646.8	1347.3	1106.8	930.8	777.2	642.5	514.4
45°	1934.0	1841.6	1711.4	1479.8	1268.2	1085.6	914.1	767.2	642.5	526.7	420.9
47.5°	1389.6	1309.4	1257.1	1122.3	987.6	862.9	733.8	607.9	494.4	402.0	315.1
50°	955.3	894.1	871.8	789.4	683.6	591.2	488.8	403.1	318.4	252.7	192.6
52.5°	525.5	493.3	483.2	439.8	389.7	325.1	257.2	204.9	161.4	126.9	100.2
55°	212.7	206.0	196.0	180.4	157.0	125.8	108.0	89.1	75.7	67.9	62.4
57.5°	85.7	82.4	81.3	75.7	71.3	64.6	60.1	56.8	54.6	53.4	51.2
60°	59.0	56.8	55.7	53.4	52.3	50.1	47.9	46.8	44.5	43.4	41.2
62.5°	44.5	43.4	43.4	41.2	41.2	40.1	39.0	36.7	35.6	34.5	32.3
65°	34.5	33.4	32.3	32.3	31.2	31.2	30.1	28.9	26.7	25.6	23.4
67.5°	24.5	24.5	23.4	23.4	22.3	22.3	21.2	20.0	18.9	17.8	16.7
70°	16.7	15.6	15.6	15.6	15.6	14.5	14.5	13.4	12.2	12.2	11.1
72.5°	10.0	10.0	10.0	8.9	8.9	8.9	7.8	7.8	7.8	6.7	6.7
75°	4.5	4.5	4.5	4.5	4.5	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2
80°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
85°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
87.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	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



TEST NUMBER: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455H

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4
2.5°	926.4	924.2	901.9	891.9	889.6	880.7	877.4	866.3	826.2	828.4	832.8
5°	999.9	979.8	944.2	920.8	905.2	885.2	868.5	848.4	815.0	789.4	783.9
7.5°	1063.3	1026.6	975.4	938.6	907.5	875.2	845.1	813.9	775.0	742.7	727.1
10°	1115.7	1061.1	989.8	938.6	895.2	850.7	810.6	769.4	721.5	683.6	664.7
12.5°	1149.1	1075.6	987.6	921.9	866.3	808.4	763.8	717.1	663.6	620.2	597.9
15°	1169.1	1070.0	969.8	888.5	822.8	757.1	705.9	653.6	597.9	553.4	528.9
17.5°	1168.0	1067.8	936.4	845.1	769.4	697.0	641.3	586.8	533.3	487.7	461.0
20°	1140.2	1013.2	886.3	790.5	712.6	633.5	573.4	520.0	466.5	425.3	399.7
22.5°	1088.9	956.4	828.4	726.0	645.8	571.2	507.7	454.3	406.4	369.7	350.7
25°	1028.8	890.7	766.0	654.7	577.9	503.3	445.4	396.4	354.1	320.7	305.1
27.5°	955.3	819.5	694.8	589.0	508.8	440.9	386.4	345.2	306.2	280.6	265.0
30°	866.3	741.5	614.6	521.1	444.3	383.0	332.9	298.4	266.1	242.7	233.8
32.5°	779.4	655.8	537.8	450.9	384.1	328.5	286.2	257.2	232.7	212.7	203.8
35°	690.3	567.9	466.5	384.1	328.5	279.5	247.2	222.7	201.5	185.9	179.3
37.5°	596.8	486.6	396.4	325.1	276.1	236.0	207.1	196.0	173.7	160.3	155.9
40°	499.9	406.4	331.8	273.9	231.6	199.3	178.1	163.7	148.1	140.3	135.8
42.5°	415.3	332.9	272.8	224.9	192.6	165.9	149.2	137.0	122.5	116.9	113.6
45°	334.0	266.1	214.9	178.1	151.4	131.4	118.0	109.1	100.2	94.6	92.4
47.5°	245.0	191.5	153.7	128.0	109.1	98.0	89.1	85.7	80.2	77.9	75.7
50°	149.2	119.1	99.1	85.7	77.9	74.6	71.3	70.1	65.7	63.5	60.1
52.5°	84.6	75.7	67.9	64.6	63.5	61.2	57.9	55.7	51.2	49.0	47.9
55°	59.0	57.9	55.7	53.4	51.2	47.9	45.7	44.5	41.2	40.1	37.9
57.5°	50.1	46.8	44.5	41.2	40.1	37.9	36.7	35.6	33.4	31.2	30.1
60°	39.0	36.7	34.5	33.4	32.3	30.1	27.8	26.7	24.5	23.4	22.3
62.5°	30.1	28.9	26.7	25.6	24.5	23.4	21.2	20.0	18.9	16.7	14.5
65°	22.3	21.2	20.0	18.9	17.8	16.7	14.5	13.4	12.2	11.1	10.0
67.5°	15.6	15.6	13.4	12.2	12.2	10.0	8.9	7.8	6.7	6.7	5.6
70°	10.0	10.0	8.9	7.8	6.7	5.6	5.6	4.5	4.5	4.5	3.3
72.5°	5.6	4.5	4.5	4.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	3.3	2.2	2.2	3.3	3.3	3.3	3.3	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
85°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
87.5°	2.2	2.2	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



TEST NUMBER: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455H

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4	867.4
2.5°	827.3	810.6	801.7	792.8	792.8	786.1	789.4	773.8	777.2	768.3	767.2
5°	769.4	764.9	728.2	717.1	699.2	697.0	700.4	680.3	678.1	669.2	661.4
7.5°	708.1	680.3	658.0	640.2	629.1	616.8	599.0	594.6	589.0	582.3	574.5
10°	641.3	610.2	584.6	563.4	556.7	540.0	531.1	517.7	508.8	501.0	495.5
12.5°	571.2	538.9	515.5	493.3	484.3	468.8	462.1	448.7	440.9	433.1	430.9
15°	499.9	471.0	445.4	428.7	418.7	407.5	402.0	387.5	385.2	378.6	374.1
17.5°	436.5	409.7	387.5	374.1	365.2	354.1	351.8	340.7	338.5	335.1	330.7
20°	377.5	356.3	337.4	326.2	320.7	314.0	310.6	302.9	300.6	298.4	296.2
22.5°	329.6	311.8	300.6	288.4	283.9	278.4	276.1	268.3	267.2	267.2	263.9
25°	287.3	273.9	263.9	253.9	251.6	246.1	246.1	239.4	240.5	238.3	237.2
27.5°	253.9	241.6	232.7	224.9	223.8	220.5	219.3	214.9	214.9	213.8	211.6
30°	222.7	213.8	206.0	200.4	200.4	197.1	197.1	192.6	191.5	190.4	190.4
32.5°	196.0	190.4	184.8	178.1	179.3	174.8	174.8	170.4	168.1	167.0	164.8
35°	171.5	168.1	162.6	158.1	158.1	153.7	151.4	147.0	145.9	144.7	143.6
37.5°	150.3	147.0	142.5	137.0	137.0	132.5	131.4	128.0	125.8	124.7	123.6
40°	130.3	126.9	122.5	116.9	116.9	112.5	111.3	109.1	108.0	105.8	104.7
42.5°	108.0	104.7	101.3	99.1	98.0	94.6	93.5	88.0	90.2	89.1	85.7
45°	89.1	88.0	84.6	81.3	80.2	76.8	74.6	71.3	70.1	70.1	67.9
47.5°	73.5	70.1	67.9	64.6	63.5	61.2	59.0	56.8	56.8	55.7	53.4
50°	57.9	55.7	54.6	51.2	50.1	47.9	46.8	44.5	43.4	41.2	40.1
52.5°	46.8	44.5	42.3	41.2	39.0	37.9	35.6	32.3	32.3	30.1	27.8
55°	36.7	34.5	32.3	31.2	28.9	26.7	25.6	23.4	21.2	20.0	18.9
57.5°	27.8	25.6	24.5	22.3	20.0	18.9	16.7	14.5	13.4	12.2	11.1
60°	20.0	18.9	16.7	14.5	13.4	12.2	11.1	8.9	8.9	7.8	7.8
62.5°	14.5	12.2	11.1	8.9	8.9	7.8	6.7	6.7	5.6	5.6	4.5
65°	8.9	7.8	6.7	6.7	5.6	5.6	4.5	4.5	3.3	3.3	3.3
67.5°	5.6	4.5	4.5	4.5	3.3	3.3	3.3	2.2	2.2	2.2	1.1
70°	3.3	3.3	3.3	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1
72.5°	3.3	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1
80°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	0.0
82.5°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	0.0
85°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	0.0
87.5°	2.2	2.2	2.2	2.2	2.2	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: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455H

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	867.4	867.4	867.4	867.4
2.5°	764.9	757.1	754.9	768.3
5°	663.6	654.7	652.5	659.2
7.5°	573.4	562.3	565.6	566.7
10°	493.3	485.5	484.3	487.7
12.5°	424.2	418.7	418.7	424.2
15°	371.9	368.5	367.4	373.0
17.5°	327.4	326.2	326.2	330.7
20°	292.8	291.7	291.7	295.1
22.5°	261.7	261.7	261.7	262.8
25°	234.9	236.0	234.9	236.0
27.5°	210.4	211.6	211.6	211.6
30°	191.5	187.1	188.2	187.1
32.5°	163.7	162.6	163.7	163.7
35°	141.4	141.4	141.4	141.4
37.5°	121.4	121.4	121.4	121.4
40°	102.4	102.4	102.4	101.3
42.5°	84.6	84.6	84.6	83.5
45°	66.8	66.8	66.8	67.9
47.5°	52.3	52.3	51.2	52.3
50°	39.0	37.9	37.9	37.9
52.5°	27.8	26.7	25.6	25.6
55°	17.8	16.7	16.7	16.7
57.5°	11.1	11.1	10.0	10.0
60°	6.7	6.7	6.7	6.7
62.5°	4.5	4.5	4.5	3.3
65°	2.2	2.2	2.2	2.2
67.5°	1.1	1.1	1.1	1.1
70°	1.1	1.1	1.1	1.1
72.5°	1.1	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)