

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 - 455SC**

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 - 455SC
Description: HALO ALLSLOPE 6" 30W, Specular Clear 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: 2222.5 lumens
Efficiency: N/A
Efficacy: 80.5 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

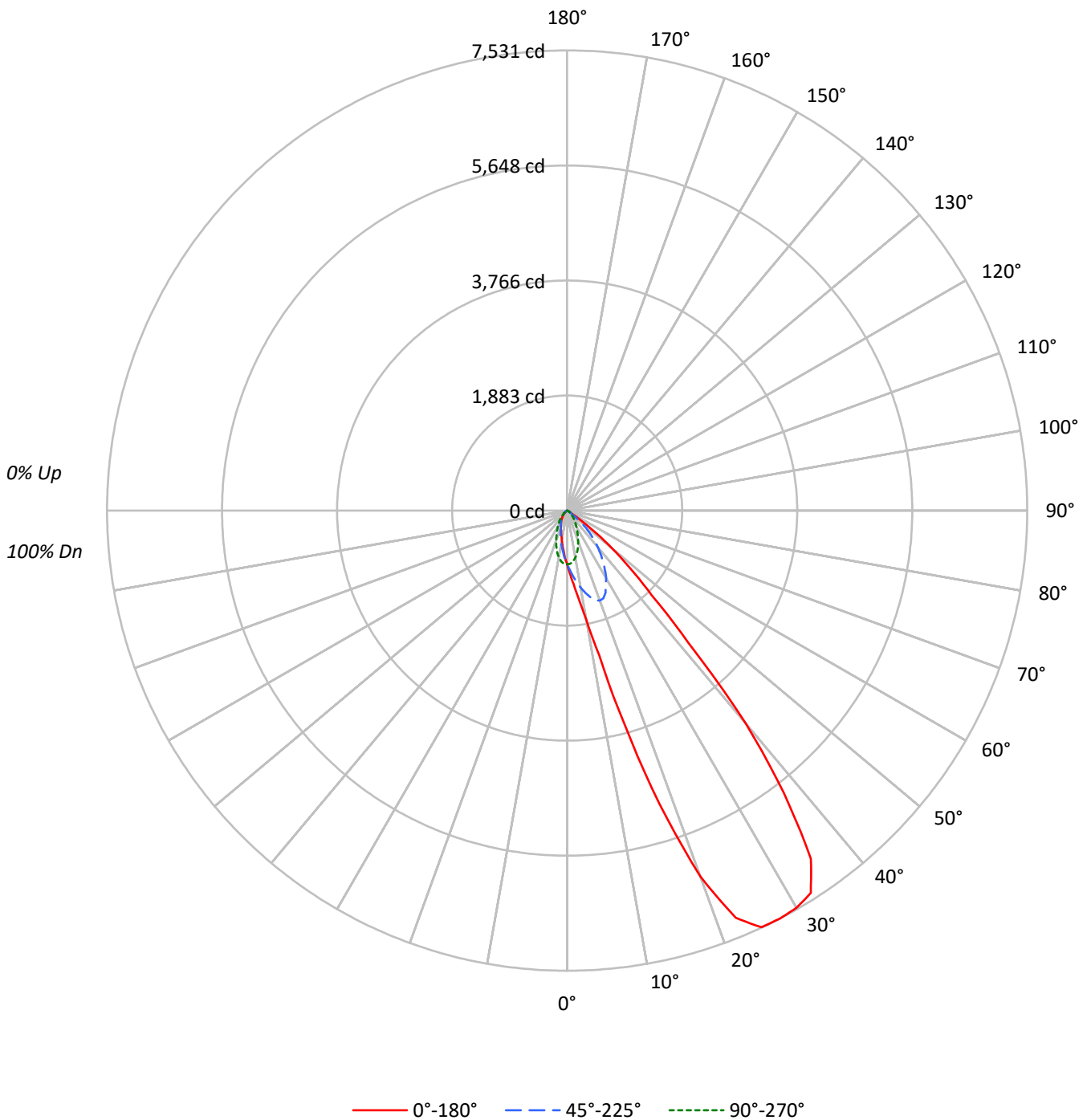
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SC

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	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	63	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°	52349	52349	52349
5°	70737	50236	39028
10°	105144	45045	28550
15°	207640	38127	21760
20°	369019	30454	17277
25°	440909	23487	13988
30°	448604	18029	11300
35°	427398	13836	8786
40°	289946	10545	6531
45°	130426	7356	4582
50°	68130	5000	2701
55°	16219	3395	1275
60°	4881	2207	556
65°	3140	1215	207
70°	1705	454	111
75°	521	266	0
80°	0	315	0
85°	0	390	0



TEST NUMBER: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SC

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.9	3.9
10°-20°	326.7	14.7
20°-30°	689.4	31.0
30°-40°	693.9	31.2
40°-50°	329.5	14.8
50°-60°	76.3	3.4
60°-70°	16.1	0.7
70°-80°	3.4	0.2
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°	1102.0	49.6
0°-40°	1795.9	80.8
0°-60°	2201.6	99.1
0°-90°	2222.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2222.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	877	877	877	877	877	
5°	1208	1071	858	705	666	134
15°	3599	1468	661	412	377	1144
25°	7524	1484	401	249	239	3392
35°	6957	1020	225	155	143	4082
45°	1956	532	110	78	69	1716
55°	215	69	45	27	17	294
65°	35	26	14	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 - 455SC

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0
2.5°	1027.9	998.6	1011.0	985.1	1013.3	990.7	990.7	981.7	976.1	968.2	945.7
5°	1208.0	1170.9	1181.0	1165.2	1173.1	1145.0	1132.6	1107.8	1112.3	1070.7	1032.4
7.5°	1450.1	1397.2	1414.1	1367.9	1364.5	1328.5	1293.6	1248.6	1210.3	1175.4	1118.0
10°	1816.0	1746.2	1748.4	1670.8	1652.7	1570.6	1504.1	1415.2	1338.6	1281.2	1190.0
12.5°	2422.8	2294.5	2275.3	2131.2	2056.9	1888.0	1745.1	1604.3	1476.0	1376.9	1251.9
15°	3599.3	3415.8	3265.0	2914.8	2660.4	2338.4	2058.0	1825.0	1633.6	1468.1	1303.7
17.5°	5044.9	4795.0	4621.6	4149.9	3647.7	2939.6	2445.3	2045.7	1755.2	1536.8	1331.9
20°	6371.2	6049.2	5770.0	5220.5	4618.2	3811.0	2798.9	2239.3	1841.9	1567.2	1324.0
22.5°	7213.3	6966.7	6701.0	6050.3	5316.2	4334.5	3200.8	2364.3	1870.0	1551.4	1280.1
25°	7524.0	7302.2	7161.5	6508.5	5714.8	4674.5	3321.2	2369.9	1828.4	1483.9	1220.4
27.5°	7530.8	7332.6	7262.8	6630.1	5782.3	4546.2	3208.7	2248.3	1725.9	1363.4	1139.4
30°	7507.1	7307.9	7189.6	6463.5	5523.4	4234.3	2899.1	2034.4	1585.2	1277.8	1048.2
32.5°	7419.3	7172.8	6884.5	6001.9	4983.0	3623.0	2467.9	1796.8	1407.3	1150.6	960.3
35°	6956.6	6642.5	6162.9	5225.0	4143.1	2868.7	2026.5	1545.8	1235.1	1020.0	837.6
37.5°	5824.0	5561.7	5105.7	4196.0	3083.7	2193.1	1684.3	1330.7	1075.2	899.6	732.9
40°	4550.7	4248.9	3716.4	2949.7	2250.6	1724.8	1374.7	1121.3	929.9	776.8	626.0
42.5°	2927.2	2795.5	2476.9	2041.2	1665.1	1362.3	1119.1	941.2	785.8	649.6	520.1
45°	1955.6	1862.1	1730.4	1496.2	1282.3	1097.7	924.3	775.7	649.6	532.5	425.6
47.5°	1405.1	1324.0	1271.1	1134.9	998.6	872.5	741.9	614.7	499.9	406.4	318.6
50°	966.0	904.1	881.5	798.2	691.3	597.8	494.2	407.6	322.0	255.6	194.8
52.5°	531.4	498.7	488.6	444.7	394.0	328.7	260.1	207.2	163.2	128.3	101.3
55°	215.0	208.3	198.1	182.4	158.7	127.2	109.2	90.1	76.6	68.7	63.0
57.5°	86.7	83.3	82.2	76.6	72.1	65.3	60.8	57.4	55.2	54.0	51.8
60°	59.7	57.4	56.3	54.0	52.9	50.7	48.4	47.3	45.0	43.9	41.7
62.5°	45.0	43.9	43.9	41.7	41.7	40.5	39.4	37.2	36.0	34.9	32.6
65°	34.9	33.8	32.6	32.6	31.5	31.5	30.4	29.3	27.0	25.9	23.6
67.5°	24.8	24.8	23.6	23.6	22.5	22.5	21.4	20.3	19.1	18.0	16.9
70°	16.9	15.8	15.8	15.8	15.8	14.6	14.6	13.5	12.4	12.4	11.3
72.5°	10.1	10.1	10.1	9.0	9.0	9.0	7.9	7.9	7.9	6.8	6.8
75°	4.5	4.5	4.5	4.5	4.5	3.4	3.4	3.4	3.4	3.4	3.4
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.3	2.3	2.3	2.3
80°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.3	2.3	2.3
82.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.3	2.3	2.3
85°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.3	2.3	2.3
87.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	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: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SC

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0
2.5°	936.7	934.5	911.9	901.8	899.6	890.5	887.2	875.9	835.4	837.6	842.1
5°	1011.0	990.7	954.7	931.1	915.3	895.0	878.2	857.9	824.1	798.2	792.6
7.5°	1075.2	1038.0	986.2	949.1	917.6	884.9	854.5	823.0	783.6	750.9	735.2
10°	1128.1	1072.9	1000.9	949.1	905.2	860.1	819.6	778.0	729.5	691.3	672.1
12.5°	1161.9	1087.6	998.6	932.2	875.9	817.4	772.3	725.0	671.0	627.1	604.6
15°	1182.1	1081.9	980.6	898.4	832.0	765.6	713.8	660.9	604.6	559.5	534.8
17.5°	1181.0	1079.7	946.8	854.5	778.0	704.8	648.5	593.3	539.3	493.1	466.1
20°	1152.9	1024.5	896.2	799.3	720.5	640.6	579.8	525.8	471.7	430.1	404.2
22.5°	1101.1	967.1	837.6	734.1	653.0	577.6	513.4	459.3	410.9	373.8	354.6
25°	1040.3	900.7	774.6	662.0	584.3	508.9	450.3	400.8	358.0	324.2	308.5
27.5°	966.0	828.6	702.5	595.6	514.5	445.8	390.7	349.0	309.6	283.7	268.0
30°	875.9	749.8	621.5	526.9	449.2	387.3	336.6	301.7	269.1	245.4	236.4
32.5°	788.1	663.1	543.8	456.0	388.4	332.1	289.3	260.1	235.3	215.0	206.0
35°	698.0	574.2	471.7	388.4	332.1	282.6	249.9	225.2	203.8	188.0	181.3
37.5°	603.5	492.0	400.8	328.7	279.2	238.7	209.4	198.1	175.6	162.1	157.6
40°	505.5	410.9	335.5	277.0	234.2	201.5	180.1	165.5	149.7	141.9	137.4
42.5°	419.9	336.6	275.8	227.4	194.8	167.8	150.9	138.5	123.8	118.2	114.8
45°	337.8	269.1	217.3	180.1	153.1	132.8	119.3	110.3	101.3	95.7	93.4
47.5°	247.7	193.6	155.4	129.5	110.3	99.1	90.1	86.7	81.1	78.8	76.6
50°	150.9	120.5	100.2	86.7	78.8	75.4	72.1	70.9	66.4	64.2	60.8
52.5°	85.6	76.6	68.7	65.3	64.2	61.9	58.5	56.3	51.8	49.5	48.4
55°	59.7	58.5	56.3	54.0	51.8	48.4	46.2	45.0	41.7	40.5	38.3
57.5°	50.7	47.3	45.0	41.7	40.5	38.3	37.2	36.0	33.8	31.5	30.4
60°	39.4	37.2	34.9	33.8	32.6	30.4	28.1	27.0	24.8	23.6	22.5
62.5°	30.4	29.3	27.0	25.9	24.8	23.6	21.4	20.3	19.1	16.9	14.6
65°	22.5	21.4	20.3	19.1	18.0	16.9	14.6	13.5	12.4	11.3	10.1
67.5°	15.8	15.8	13.5	12.4	12.4	10.1	9.0	7.9	6.8	6.8	5.6
70°	10.1	10.1	9.0	7.9	6.8	5.6	5.6	4.5	4.5	4.5	3.4
72.5°	5.6	4.5	4.5	4.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	3.4	2.3	2.3	3.4	3.4	3.4	3.4	2.3	2.3	2.3	2.3
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
85°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	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: P130065

CATALOG NUMBER: HL618TAT - HLM6935 - HL6NFL - 455SC

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0	877.0
2.5°	836.5	819.6	810.6	801.6	801.6	794.8	798.2	782.5	785.8	776.8	775.7
5°	778.0	773.5	736.3	725.0	707.0	704.8	708.2	687.9	685.6	676.6	668.8
7.5°	716.0	687.9	665.4	647.4	636.1	623.7	605.7	601.2	595.6	588.8	580.9
10°	648.5	617.0	591.1	569.7	562.9	546.0	537.0	523.5	514.5	506.6	501.0
12.5°	577.6	544.9	521.3	498.7	489.7	474.0	467.2	453.7	445.8	438.0	435.7
15°	505.5	476.2	450.3	433.5	423.3	412.1	406.4	391.8	389.5	382.8	378.3
17.5°	441.3	414.3	391.8	378.3	369.3	358.0	355.8	344.5	342.3	338.9	334.4
20°	381.7	360.3	341.1	329.9	324.2	317.5	314.1	306.2	304.0	301.7	299.5
22.5°	333.3	315.2	304.0	291.6	287.1	281.5	279.2	271.3	270.2	270.2	266.8
25°	290.5	277.0	266.8	256.7	254.4	248.8	248.8	242.1	243.2	240.9	239.8
27.5°	256.7	244.3	235.3	227.4	226.3	222.9	221.8	217.3	217.3	216.2	213.9
30°	225.2	216.2	208.3	202.7	202.7	199.3	199.3	194.8	193.6	192.5	192.5
32.5°	198.1	192.5	186.9	180.1	181.3	176.8	176.8	172.3	170.0	168.9	166.6
35°	173.4	170.0	164.4	159.9	159.9	155.4	153.1	148.6	147.5	146.4	145.2
37.5°	152.0	148.6	144.1	138.5	138.5	134.0	132.8	129.5	127.2	126.1	125.0
40°	131.7	128.3	123.8	118.2	118.2	113.7	112.6	110.3	109.2	107.0	105.8
42.5°	109.2	105.8	102.5	100.2	99.1	95.7	94.6	88.9	91.2	90.1	86.7
45°	90.1	88.9	85.6	82.2	81.1	77.7	75.4	72.1	70.9	70.9	68.7
47.5°	74.3	70.9	68.7	65.3	64.2	61.9	59.7	57.4	57.4	56.3	54.0
50°	58.5	56.3	55.2	51.8	50.7	48.4	47.3	45.0	43.9	41.7	40.5
52.5°	47.3	45.0	42.8	41.7	39.4	38.3	36.0	32.6	32.6	30.4	28.1
55°	37.2	34.9	32.6	31.5	29.3	27.0	25.9	23.6	21.4	20.3	19.1
57.5°	28.1	25.9	24.8	22.5	20.3	19.1	16.9	14.6	13.5	12.4	11.3
60°	20.3	19.1	16.9	14.6	13.5	12.4	11.3	9.0	9.0	7.9	7.9
62.5°	14.6	12.4	11.3	9.0	9.0	7.9	6.8	6.8	5.6	5.6	4.5
65°	9.0	7.9	6.8	6.8	5.6	5.6	4.5	4.5	3.4	3.4	3.4
67.5°	5.6	4.5	4.5	4.5	3.4	3.4	3.4	2.3	2.3	2.3	1.1
70°	3.4	3.4	3.4	2.3	2.3	2.3	2.3	2.3	1.1	1.1	1.1
72.5°	3.4	2.3	2.3	2.3	2.3	2.3	2.3	1.1	1.1	1.1	1.1
75°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.1	1.1	1.1	1.1
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	1.1	1.1	1.1	1.1	1.1
80°	2.3	2.3	2.3	2.3	2.3	1.1	1.1	1.1	1.1	1.1	0.0
82.5°	2.3	2.3	2.3	2.3	2.3	1.1	1.1	1.1	1.1	1.1	0.0
85°	2.3	2.3	2.3	2.3	2.3	1.1	1.1	1.1	1.1	1.1	0.0
87.5°	2.3	2.3	2.3	2.3	2.3	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 - 455SC

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	877.0	877.0	877.0	877.0
2.5°	773.5	765.6	763.3	776.8
5°	671.0	662.0	659.7	666.5
7.5°	579.8	568.6	571.9	573.1
10°	498.7	490.9	489.7	493.1
12.5°	428.9	423.3	423.3	428.9
15°	376.0	372.7	371.5	377.2
17.5°	331.0	329.9	329.9	334.4
20°	296.1	295.0	295.0	298.3
22.5°	264.6	264.6	264.6	265.7
25°	237.6	238.7	237.6	238.7
27.5°	212.8	213.9	213.9	213.9
30°	193.6	189.1	190.3	189.1
32.5°	165.5	164.4	165.5	165.5
35°	143.0	143.0	143.0	143.0
37.5°	122.7	122.7	122.7	122.7
40°	103.6	103.6	103.6	102.5
42.5°	85.6	85.6	85.6	84.4
45°	67.6	67.6	67.6	68.7
47.5°	52.9	52.9	51.8	52.9
50°	39.4	38.3	38.3	38.3
52.5°	28.1	27.0	25.9	25.9
55°	18.0	16.9	16.9	16.9
57.5°	11.3	11.3	10.1	10.1
60°	6.8	6.8	6.8	6.8
62.5°	4.5	4.5	4.5	3.4
65°	2.3	2.3	2.3	2.3
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

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