

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: P130219

Luminaire Tested: **HL612ICAT - HLM6930 - HL6NFL - 70PS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130219
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33474)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL612ICAT - HLM6930 - HL6NFL - 70PS
Description: HALO ALLSLOPE 6" 21W, Albalite Glass Lens, White Polymer Trim Ring
"Dead Front", Wet Location - Showerlight using 25 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: 783.2 lumens
Efficiency: N/A
Efficacy: 41.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.04 / 1.23
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

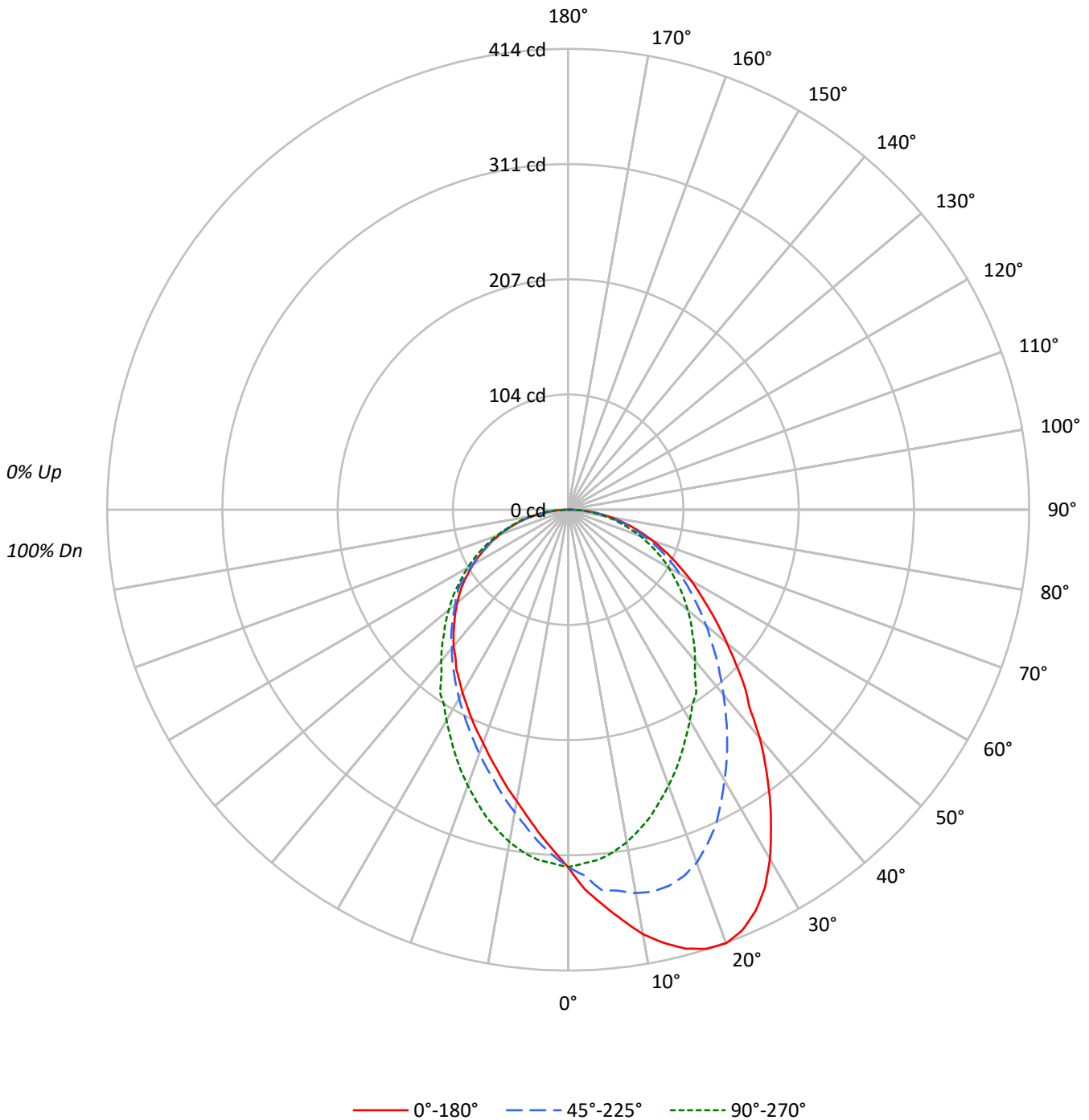
Input Watts (W): 19.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P130219

CATALOG NUMBER: HL612ICAT - HLM6930 - HL6NFL - 70PS

Luminous Intensity Polar Plot





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CATALOG NUMBER: HL612ICAT - HLM6930 - HL6NFL - 70PS

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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	45
6	71	58	49	43	69	57	49	43	55	48	42	53	47	42	52	46	41	39
7	66	53	44	38	64	52	44	38	50	43	38	49	42	37	48	42	37	35
8	62	48	40	34	60	48	40	34	46	39	34	45	38	34	44	38	33	31
9	58	44	36	31	56	44	36	31	43	36	31	42	35	30	41	35	30	29
10	54	41	33	28	53	41	33	28	40	33	28	39	32	28	38	32	28	26

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	19167	19167	19167
5°	20852	18481	17116
10°	22418	17555	15395
15°	23549	16459	14036
20°	24002	15268	12922
25°	23323	14123	12072
30°	21650	13057	11336
35°	19390	12324	10745
40°	17037	11297	10207
45°	14933	10524	9644
50°	13104	9867	9155
55°	11610	9211	8683
60°	10424	8519	8069
65°	9231	7765	7342
70°	8080	6900	6587
75°	6844	5848	5581
80°	5334	4580	4264
85°	3427	2765	2511



TEST NUMBER: P130219

CATALOG NUMBER: HL612ICAT - HLM6930 - HL6NFL - 70PS

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.4	3.9
10°-20°	85.6	10.9
20°-30°	123.0	15.7
30°-40°	136.3	17.4
40°-50°	131.2	16.7
50°-60°	114.5	14.6
60°-70°	88.3	11.3
70°-80°	55.1	7.0
80°-90°	18.9	2.4
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°	238.9	30.5
0°-40°	375.2	47.9
0°-60°	620.9	79.3
0°-90°	783.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	783.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	321	321	321	321	321	
5°	356	343	316	300	292	35
15°	408	350	285	253	243	115
25°	398	313	241	214	206	182
35°	316	249	201	179	175	197
45°	224	188	158	148	145	172
55°	154	138	122	119	115	139
65°	103	96	86	82	82	102
75°	59	56	50	49	48	62
85°	20	19	16	16	15	22
90°	0	0	0	0	0	



TEST NUMBER: P130219

CATALOG NUMBER: HL612ICAT - HLM6930 - HL6NFL - 70PS

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1
2.5°	341.3	333.5	335.1	335.9	335.1	330.4	330.4	332.0	331.2	328.9	331.2
5°	356.1	348.3	349.8	349.1	348.3	343.6	342.1	342.9	342.1	342.9	339.7
7.5°	371.6	363.8	364.6	363.8	361.5	355.3	353.0	352.2	350.6	345.2	344.4
10°	387.2	377.1	377.1	377.1	373.9	365.4	362.3	360.0	356.8	349.8	347.5
12.5°	398.8	389.5	388.7	387.9	383.3	380.2	368.5	364.6	360.0	351.4	347.5
15°	408.2	398.0	398.0	394.9	389.5	377.8	372.4	366.2	360.0	349.8	344.4
17.5°	413.6	404.3	402.7	398.8	391.8	379.4	371.6	363.8	356.1	345.2	339.0
20°	414.4	405.0	410.5	398.0	389.5	375.5	366.2	357.6	349.1	337.4	328.9
22.5°	408.9	399.6	405.0	391.1	382.5	367.7	357.6	347.5	338.2	325.7	318.0
25°	398.0	389.5	385.6	380.2	370.8	356.1	345.2	334.3	325.0	313.3	304.8
27.5°	382.5	373.9	369.3	363.8	355.3	340.5	329.6	318.7	309.4	297.0	289.2
30°	362.3	353.7	349.8	345.2	336.6	321.9	311.8	301.6	293.1	280.7	274.4
32.5°	339.0	333.5	328.1	324.2	317.2	303.2	293.1	283.8	276.0	265.1	258.9
35°	315.6	310.2	298.5	301.6	294.6	283.0	272.1	265.1	258.1	248.8	242.6
37.5°	291.5	286.1	281.4	278.3	267.4	262.0	252.7	246.4	240.2	232.5	227.0
40°	267.4	262.8	258.9	256.6	251.9	241.8	234.8	229.3	223.1	216.9	212.2
42.5°	241.0	240.2	237.9	235.6	231.7	223.1	216.9	212.2	207.6	202.1	198.2
45°	223.9	220.0	217.7	215.4	212.2	204.5	200.6	196.7	192.8	188.1	184.3
47.5°	203.7	200.6	199.0	197.5	194.4	187.4	184.3	181.1	178.0	174.1	171.8
50°	185.8	183.5	181.1	179.6	178.0	172.6	170.3	171.0	164.8	161.7	160.2
52.5°	169.5	167.1	165.6	164.0	162.5	158.6	156.3	153.9	152.4	149.3	147.7
55°	153.9	151.6	150.0	149.3	150.8	144.6	143.0	141.5	139.9	137.6	137.6
57.5°	139.9	137.6	136.8	136.8	135.3	132.2	130.6	129.8	128.3	126.7	125.9
60°	127.5	125.2	123.6	124.4	122.8	119.7	122.1	117.4	117.4	115.8	115.1
62.5°	114.3	112.7	112.0	112.0	110.4	108.8	108.1	107.3	106.5	105.7	105.0
65°	102.6	101.1	100.3	100.3	99.5	97.2	96.4	96.4	95.6	95.6	94.8
67.5°	91.0	89.4	89.4	89.4	88.6	87.1	86.3	86.3	85.5	85.5	84.7
70°	80.1	78.5	77.7	78.5	77.7	77.0	75.4	75.4	75.4	75.4	74.6
72.5°	69.2	68.4	67.6	68.4	67.6	66.1	65.3	66.9	65.3	65.3	64.5
75°	59.1	58.3	57.5	58.3	56.8	56.8	56.0	56.0	55.2	56.0	55.2
77.5°	49.0	48.2	48.2	48.2	47.4	46.6	45.9	46.6	45.9	45.9	45.9
80°	38.9	38.1	38.1	38.9	38.1	37.3	36.5	37.3	36.5	36.5	36.5
82.5°	29.5	28.8	28.8	29.5	28.8	28.0	27.2	28.0	28.0	27.2	28.0
85°	20.2	20.2	20.2	20.2	20.2	18.7	18.7	18.7	18.7	19.4	19.4
87.5°	11.7	11.7	11.7	11.7	11.7	10.9	10.1	10.9	10.9	10.9	10.9
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: P130219

CATALOG NUMBER: HL612ICAT - HLM6930 - HL6NFL - 70PS

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1
2.5°	333.5	328.1	327.3	324.2	322.6	324.2	324.2	318.0	321.1	316.4	318.0
5°	340.5	332.7	331.2	326.5	323.4	323.4	322.6	315.6	317.2	311.0	311.0
7.5°	344.4	336.6	332.0	326.5	321.9	321.9	318.0	310.2	311.0	304.0	303.2
10°	345.2	335.9	330.4	324.2	318.0	315.6	312.5	303.2	302.4	295.4	294.6
12.5°	344.4	332.7	326.5	318.7	312.5	308.6	304.0	294.6	293.9	286.1	283.8
15°	339.7	327.3	320.3	311.0	303.2	299.3	294.6	285.3	283.8	275.2	273.7
17.5°	332.7	318.7	311.8	302.4	293.9	289.2	284.5	274.4	272.9	271.3	262.8
20°	321.9	308.6	300.1	290.8	283.0	277.5	272.9	263.6	261.2	253.4	251.9
22.5°	310.2	297.8	289.2	279.9	272.1	265.1	261.2	252.7	250.3	242.6	241.0
25°	297.0	284.5	276.0	266.7	259.7	254.2	249.6	241.0	239.5	231.7	230.1
27.5°	282.2	270.5	262.8	254.2	247.2	242.6	237.9	229.3	228.6	221.6	220.0
30°	268.2	256.6	250.3	241.0	234.0	230.9	226.2	218.5	217.7	211.5	209.9
32.5°	252.7	242.6	235.6	228.6	222.3	219.2	215.4	207.6	206.8	201.4	199.8
35°	237.1	227.8	222.3	216.1	209.9	207.6	204.5	200.6	195.9	191.2	190.5
37.5°	223.1	214.6	209.9	203.7	198.2	195.9	192.8	186.6	185.8	181.9	181.9
40°	209.1	201.4	197.5	192.0	187.4	185.0	182.7	177.3	176.5	172.6	172.6
42.5°	195.1	188.9	185.0	184.3	176.5	174.1	172.6	167.9	167.1	163.3	164.0
45°	182.7	176.5	173.4	170.3	165.6	164.0	162.5	157.8	158.6	154.7	155.5
47.5°	170.3	164.8	162.5	159.4	155.5	153.9	153.2	149.3	149.3	145.4	146.2
50°	158.6	153.9	151.6	148.5	145.4	145.4	143.8	139.9	140.7	137.6	137.6
52.5°	147.7	143.0	141.5	138.4	136.1	136.1	135.3	131.4	131.4	129.1	129.1
55°	136.8	132.9	131.4	129.1	126.7	125.9	125.2	122.1	122.8	120.5	120.5
57.5°	125.2	122.1	121.3	118.9	117.4	116.6	115.8	112.7	113.5	112.0	112.0
60°	114.3	112.0	111.2	109.6	107.3	107.3	106.5	104.2	105.0	102.6	103.4
62.5°	104.2	100.3	101.1	101.8	98.7	98.7	98.0	95.6	95.6	94.1	94.8
65°	94.1	91.0	91.7	91.0	89.4	89.4	88.6	86.3	87.1	85.5	85.5
67.5°	84.0	83.2	82.4	81.6	81.6	80.1	79.3	77.0	77.7	76.2	77.0
70°	74.6	73.1	73.1	71.5	70.0	70.7	70.0	68.4	69.2	67.6	68.4
72.5°	65.3	63.7	63.7	62.2	61.4	61.4	60.6	59.1	59.9	59.1	59.1
75°	56.0	54.4	53.6	53.6	52.9	52.1	52.1	50.5	51.3	49.8	50.5
77.5°	45.9	45.1	45.1	44.3	43.5	43.5	42.8	42.0	42.0	41.2	41.2
80°	36.5	36.5	35.8	35.0	35.0	35.0	34.2	33.4	33.4	32.7	32.7
82.5°	28.0	27.2	27.2	27.2	26.4	25.7	25.7	24.9	24.9	24.9	24.1
85°	19.4	18.7	18.7	17.9	17.9	17.9	17.1	16.3	16.3	16.3	16.3
87.5°	10.9	10.1	10.1	10.1	9.3	10.1	9.3	8.6	8.6	8.6	8.6
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: P130219

CATALOG NUMBER: HL612ICAT - HLM6930 - HL6NFL - 70PS

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1
2.5°	316.4	317.2	315.6	313.3	313.3	311.0	312.5	311.0	311.8	308.6	307.1
5°	309.4	309.4	306.3	303.2	302.4	300.1	300.1	298.5	298.5	295.4	293.1
7.5°	300.1	300.1	296.2	293.1	291.5	287.7	287.7	286.1	286.1	282.2	280.7
10°	290.8	290.0	284.5	282.2	279.9	276.0	276.0	274.4	273.7	269.8	269.0
12.5°	280.7	279.1	274.4	270.5	268.2	265.1	264.3	262.0	262.0	258.1	256.6
15°	269.8	268.2	263.6	259.7	257.3	253.4	252.7	251.1	250.3	246.4	245.7
17.5°	258.9	256.6	252.7	248.8	246.4	243.3	242.6	240.2	239.5	236.3	235.6
20°	248.0	246.4	241.8	237.9	236.3	233.2	231.7	229.3	229.3	226.2	224.7
22.5°	237.9	235.6	230.9	228.6	226.2	223.1	222.3	220.8	220.0	216.9	216.1
25°	227.8	225.5	221.6	218.5	220.8	213.8	212.2	211.5	210.7	207.6	206.8
27.5°	217.7	216.1	211.5	209.1	206.8	204.5	203.7	202.1	202.1	199.8	199.0
30°	206.8	206.8	202.1	200.6	198.2	195.9	195.9	193.6	193.6	191.2	190.5
32.5°	198.2	197.5	193.6	191.2	189.7	187.4	187.4	185.8	185.8	183.5	182.7
35°	188.9	188.1	184.3	182.7	181.1	178.8	179.6	178.0	177.3	175.7	175.7
37.5°	180.4	179.6	175.7	174.1	172.6	171.0	171.0	170.3	169.5	167.1	167.1
40°	171.0	172.6	167.1	166.4	164.0	162.5	163.3	161.7	161.7	160.2	160.2
42.5°	161.7	161.7	159.4	157.8	156.3	155.5	155.5	153.9	153.9	152.4	152.4
45°	153.9	153.9	150.8	153.2	148.5	147.7	147.7	146.2	146.2	144.6	144.6
47.5°	145.4	145.4	143.0	141.5	140.7	139.9	139.9	138.4	138.4	136.8	136.8
50°	137.6	137.6	135.3	133.7	132.9	132.2	132.2	130.6	130.6	129.1	129.8
52.5°	129.1	128.3	126.7	125.9	125.2	126.7	124.4	123.6	122.8	122.1	122.1
55°	119.7	120.5	118.9	118.2	116.6	118.9	115.8	115.8	115.1	113.5	114.3
57.5°	113.5	112.0	110.4	109.6	108.8	108.1	108.1	107.3	107.3	105.7	106.5
60°	102.6	103.4	101.8	101.1	100.3	99.5	99.5	98.7	98.7	98.0	98.0
62.5°	94.1	94.8	93.3	92.5	91.7	91.0	91.0	90.2	90.2	89.4	89.4
65°	85.5	85.5	84.7	84.0	83.2	82.4	82.4	82.4	81.6	81.6	81.6
67.5°	77.0	77.0	76.2	75.4	74.6	74.6	73.9	73.1	73.1	73.1	73.1
70°	67.6	67.6	67.6	66.9	66.1	66.1	65.3	64.5	64.5	64.5	64.5
72.5°	59.1	59.1	59.1	58.3	57.5	57.5	56.8	56.0	56.0	56.0	56.0
75°	50.5	50.5	49.8	49.8	49.0	49.0	48.2	47.4	47.4	47.4	47.4
77.5°	42.0	42.0	42.0	41.2	40.4	40.4	39.6	38.9	38.9	39.6	38.9
80°	32.7	33.4	33.4	32.7	31.9	31.9	31.1	31.1	30.3	31.1	31.1
82.5°	24.9	24.9	24.9	24.1	24.1	23.3	24.1	22.5	22.5	22.5	22.5
85°	17.1	17.1	17.1	16.3	15.5	15.5	15.5	14.8	14.0	14.8	14.8
87.5°	9.3	8.6	8.6	8.6	8.6	7.8	7.8	7.8	7.0	7.8	7.8
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: P130219

CATALOG NUMBER: HL612ICAT - HLM6930 - HL6NFL - 70PS

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	321.1	321.1	321.1	321.1
2.5°	309.4	309.4	311.0	306.3
5°	294.6	295.4	297.0	292.3
7.5°	281.4	282.2	283.0	278.3
10°	268.2	269.8	270.5	265.9
12.5°	255.0	257.3	258.9	255.0
15°	245.7	245.7	247.2	243.3
17.5°	234.8	235.6	236.3	233.2
20°	224.7	225.5	226.2	223.1
22.5°	215.4	216.9	216.9	214.6
25°	206.8	207.6	208.4	206.0
27.5°	198.2	199.0	199.8	197.5
30°	190.5	192.8	191.2	189.7
32.5°	182.7	183.5	183.5	181.9
35°	178.8	174.9	176.5	174.9
37.5°	166.4	167.1	167.9	166.4
40°	159.4	160.2	160.2	160.2
42.5°	152.4	151.6	153.2	152.4
45°	147.7	144.6	145.4	144.6
47.5°	136.8	136.8	137.6	137.6
50°	129.1	129.8	129.8	129.8
52.5°	121.3	122.1	122.8	122.8
55°	114.3	114.3	115.1	115.1
57.5°	105.7	105.7	106.5	106.5
60°	98.0	98.0	98.7	98.7
62.5°	89.4	89.4	90.2	90.2
65°	80.9	80.9	81.6	81.6
67.5°	73.1	73.1	73.1	73.9
70°	64.5	64.5	64.5	65.3
72.5°	56.0	56.0	56.8	56.8
75°	47.4	47.4	48.2	48.2
77.5°	38.9	38.9	39.6	40.4
80°	31.1	31.1	31.1	31.1
82.5°	22.5	22.5	23.3	24.1
85°	14.8	14.8	14.8	14.8
87.5°	7.8	7.8	7.8	8.6
90°	0.0	0.0	0.0	0.0

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