

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P517836

Luminaire Tested: HVL8-1-LD4-3LO-30-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P517836
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3LO-30-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

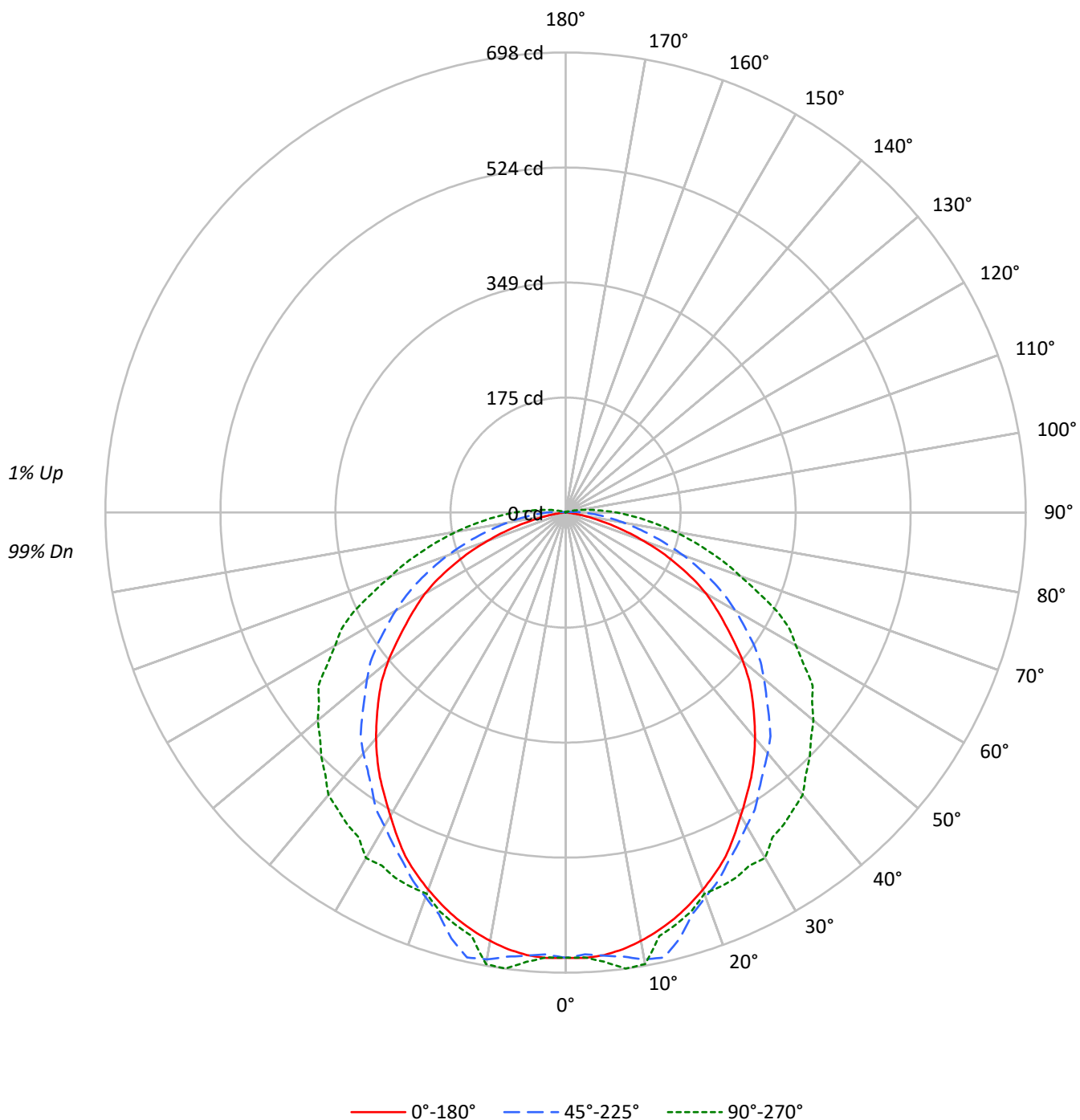
Lumens per Lamp: N/A
Luminaire Lumens: 2035.0 lumens
Efficiency: N/A
Efficacy: 121.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

Input Watts (W): 16.8
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: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10907	10907	10907
5°	10765	10662	10853
10°	10509	10727	10921
15°	10205	10361	10136
20°	9864	9635	9693
25°	9510	9149	9755
30°	9036	8747	9861
35°	8663	8366	9687
40°	8269	8062	9747
45°	7850	7691	9572
50°	7364	7304	9498
55°	6716	6892	9494
60°	6172	6358	9087
65°	5263	5738	8799
70°	4089	4964	7891
75°	2719	4058	7202
80°	1362	3161	6468
85°	402	2260	5695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 9572 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.9	3.2
10°-20°	184.9	9.1
20°-30°	275.1	13.5
30°-40°	330.7	16.2
40°-50°	348.0	17.1
50°-60°	323.0	15.9
60°-70°	255.3	12.5
70°-80°	156.0	7.7
80°-90°	67.9	3.3
90°-100°	21.2	1.0
100°-110°	4.7	0.2
110°-120°	1.9	0.1
120°-130°	1.1	0.1
130°-140°	0.3	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°	524.9	25.8
0°-40°	855.6	42.0
0°-60°	1526.6	75.0
0°-90°	2005.8	98.6
90°-120°	27.8	1.4
90°-150°	29.2	1.4
90°-180°	29.0	1.4
0°-180°	2035.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	676	676	676	676	676	
5°	674	672	675	682	684	64
15°	638	662	669	647	647	180
25°	575	612	584	602	611	264
35°	491	504	512	558	578	307
45°	401	403	436	505	524	309
55°	295	300	348	424	458	265
65°	187	193	245	324	354	185
75°	71	94	137	210	223	77
85°	6	22	53	103	119	10
90°	0	7	28	66	77	0
95°	0	2	12	36	44	0
105°	0	1	2	7	10	0
115°	0	1	2	3	3	0
125°	0	0	1	2	3	0
135°	0	0	0	1	1	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CATALOG NUMBER: HVL8-1-LD4-3LO-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	675.5	675.5	675.5	675.5	675.5
2.5°	676.3	674.5	670.8	674.4	675.4
5°	673.9	672.5	674.8	682.4	684.3
7.5°	668.2	673.4	679.6	693.4	697.8
10°	659.8	669.7	688.3	700.0	695.5
12.5°	649.6	666.4	691.3	668.5	657.9
15°	637.8	662.3	668.8	646.6	647.0
17.5°	623.9	658.9	638.9	638.4	634.4
20°	608.9	647.3	620.9	619.8	615.5
22.5°	592.8	632.0	604.9	602.7	614.3
25°	575.3	612.1	584.1	601.6	611.4
27.5°	553.5	585.9	566.8	591.6	603.8
30°	531.3	559.0	549.0	583.6	605.3
32.5°	510.5	530.7	534.5	580.6	584.1
35°	490.8	504.5	512.0	558.5	577.5
37.5°	469.2	473.0	493.0	549.3	567.6
40°	447.2	444.9	477.1	534.2	559.5
42.5°	423.6	422.7	460.2	526.6	539.3
45°	401.1	402.9	436.1	505.2	524.0
47.5°	378.1	380.5	413.2	481.6	505.0
50°	351.4	354.5	392.9	460.7	490.8
52.5°	322.5	328.3	373.1	440.9	471.3
55°	295.4	300.3	347.9	424.0	457.7
57.5°	270.7	273.6	321.9	402.6	428.1
60°	246.3	247.0	297.4	379.0	403.3
62.5°	218.4	219.6	272.2	351.0	383.6
65°	187.0	192.9	245.1	324.3	353.8
67.5°	157.7	168.0	217.4	299.8	315.3
70°	126.3	143.8	190.3	271.1	282.0
72.5°	97.6	118.1	162.5	238.9	254.2
75°	70.7	93.7	136.6	210.0	223.2
77.5°	47.6	71.0	112.4	178.1	195.5
80°	28.5	51.9	90.8	148.5	168.2
82.5°	14.6	34.8	70.5	124.5	142.1
85°	6.3	22.0	53.3	103.3	118.6
87.5°	1.8	12.5	39.2	83.5	96.5
90°	0.1	6.6	27.9	65.5	77.2
92.5°	0.1	3.2	19.7	49.5	58.5
95°	0.1	1.7	12.2	35.9	43.9
97.5°	0.1	1.0	7.4	25.5	32.2
100°	0.1	0.8	4.4	16.9	23.0
102.5°	0.1	1.0	3.0	10.7	15.0
105°	0.1	1.0	2.5	7.0	9.9
107.5°	0.3	1.0	2.2	5.2	6.9
110°	0.1	0.8	2.3	4.0	5.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.2	3.3	4.0
115°	0.1	0.6	1.9	3.2	3.3
117.5°	0.3	0.4	1.5	3.2	3.3
120°	0.3	0.3	1.2	3.0	3.4
122.5°	0.3	0.3	1.0	2.8	3.3
125°	0.1	0.3	0.8	2.1	2.9
127.5°	0.3	0.3	0.7	1.7	2.2
130°	0.3	0.3	0.6	1.2	1.7
132.5°	0.3	0.3	0.4	1.0	1.2
135°	0.3	0.3	0.3	0.7	1.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)