

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: P517175

Luminaire Tested: HVL12-1-LD4-1LO-50-UNV-C-EDD-90

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: P517175
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1LO-50-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 665.0 lumens
Efficiency: N/A
Efficacy: 112.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

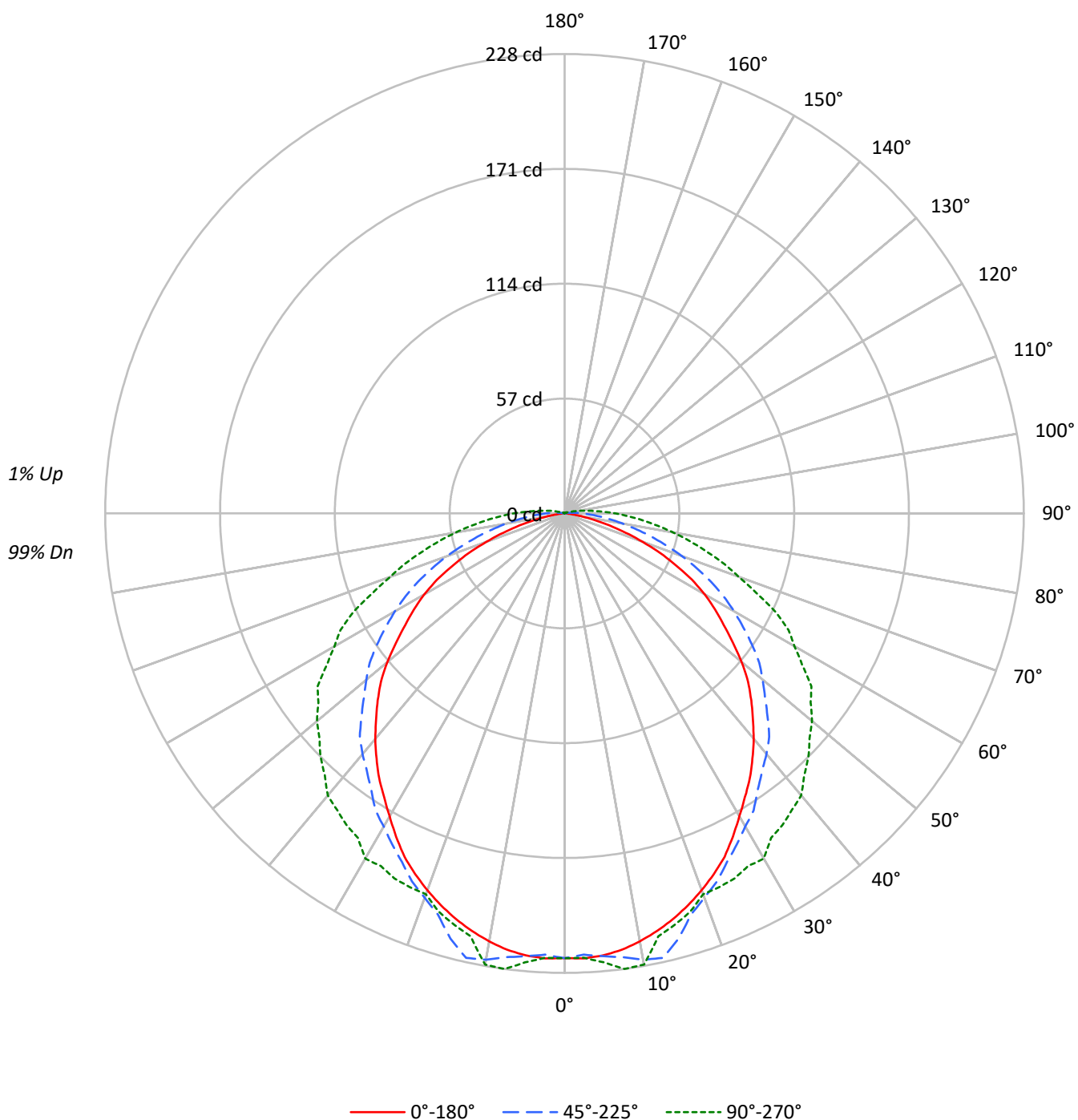
Input Watts (W): 5.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	2376	2376	2376
5°	2345	2334	2381
10°	2289	2360	2413
15°	2223	2290	2255
20°	2149	2140	2172
25°	2072	2043	2202
30°	1968	1963	2243
35°	1887	1887	2220
40°	1801	1829	2253
45°	1711	1755	2234
50°	1604	1679	2241
55°	1463	1596	2268
60°	1345	1486	2202
65°	1146	1355	2169
70°	891	1188	1988
75°	592	989	1869
80°	296	788	1749
85°	89	582	1649

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2268 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.2	3.2
10°-20°	60.4	9.1
20°-30°	89.9	13.5
30°-40°	108.0	16.2
40°-50°	113.7	17.1
50°-60°	105.5	15.9
60°-70°	83.4	12.5
70°-80°	51.0	7.7
80°-90°	22.2	3.3
90°-100°	6.9	1.0
100°-110°	1.5	0.2
110°-120°	0.6	0.1
120°-130°	0.4	0.1
130°-140°	0.1	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°	171.5	25.8
0°-40°	279.6	42.0
0°-60°	498.8	75.0
0°-90°	655.5	98.6
90°-120°	9.1	1.4
90°-150°	9.5	1.4
90°-180°	9.0	1.4
0°-180°	665.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	221	221	221	221	221	
5°	220	220	220	223	224	21
15°	208	216	218	211	211	59
25°	188	200	191	197	200	86
35°	160	165	167	182	189	100
45°	131	132	142	165	171	101
55°	96	98	114	138	150	87
65°	61	63	80	106	116	61
75°	23	31	45	69	73	25
85°	2	7	17	34	39	3
90°	0	2	9	21	25	0
95°	0	0	4	12	14	0
105°	0	0	1	2	3	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	0
135°	0	0	0	0	0	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	220.7	220.7	220.7	220.7	220.7
2.5°	221.0	220.4	219.2	220.4	220.7
5°	220.2	219.8	220.5	223.0	223.6
7.5°	218.4	220.1	222.1	226.6	228.0
10°	215.6	218.9	224.9	228.7	227.3
12.5°	212.3	217.8	225.9	218.5	215.0
15°	208.4	216.4	218.5	211.3	211.4
17.5°	203.9	215.3	208.8	208.6	207.3
20°	199.0	211.5	202.9	202.5	201.1
22.5°	193.7	206.5	197.7	197.0	200.7
25°	188.0	200.0	190.9	196.6	199.8
27.5°	180.9	191.5	185.2	193.3	197.3
30°	173.6	182.7	179.4	190.7	197.8
32.5°	166.8	173.4	174.7	189.7	190.9
35°	160.4	164.8	167.3	182.5	188.7
37.5°	153.3	154.6	161.1	179.5	185.5
40°	146.1	145.4	155.9	174.6	182.8
42.5°	138.4	138.1	150.4	172.1	176.2
45°	131.1	131.7	142.5	165.1	171.2
47.5°	123.6	124.3	135.0	157.4	165.0
50°	114.8	115.8	128.4	150.6	160.4
52.5°	105.4	107.3	121.9	144.1	154.0
55°	96.5	98.1	113.7	138.5	149.6
57.5°	88.5	89.4	105.2	131.6	139.9
60°	80.5	80.7	97.2	123.8	131.8
62.5°	71.4	71.8	88.9	114.7	125.4
65°	61.1	63.0	80.1	106.0	115.6
67.5°	51.5	54.9	71.0	98.0	103.0
70°	41.3	47.0	62.2	88.6	92.1
72.5°	31.9	38.6	53.1	78.1	83.1
75°	23.1	30.6	44.7	68.6	72.9
77.5°	15.6	23.2	36.7	58.2	63.9
80°	9.3	17.0	29.7	48.5	54.9
82.5°	4.8	11.4	23.0	40.7	46.5
85°	2.1	7.2	17.4	33.8	38.8
87.5°	0.6	4.1	12.8	27.3	31.5
90°	0.0	2.2	9.1	21.4	25.2
92.5°	0.0	1.0	6.4	16.2	19.1
95°	0.0	0.5	4.0	11.7	14.3
97.5°	0.0	0.3	2.4	8.3	10.5
100°	0.0	0.3	1.4	5.5	7.5
102.5°	0.0	0.3	1.0	3.5	4.9
105°	0.0	0.3	0.8	2.3	3.2
107.5°	0.1	0.3	0.7	1.7	2.2
110°	0.0	0.3	0.8	1.3	1.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.2	0.7	1.1	1.3
115°	0.0	0.2	0.6	1.0	1.1
117.5°	0.1	0.1	0.5	1.0	1.1
120°	0.1	0.1	0.4	1.0	1.1
122.5°	0.1	0.1	0.3	0.9	1.1
125°	0.0	0.1	0.3	0.7	0.9
127.5°	0.1	0.1	0.2	0.5	0.7
130°	0.1	0.1	0.2	0.4	0.5
132.5°	0.1	0.1	0.1	0.3	0.4
135°	0.1	0.1	0.1	0.2	0.3
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)