

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: P517156

Luminaire Tested: HVL12-1-LD4-1HI-40-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: P517156
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1HI-40-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1247.0 lumens
Efficiency: N/A
Efficacy: 113.4 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

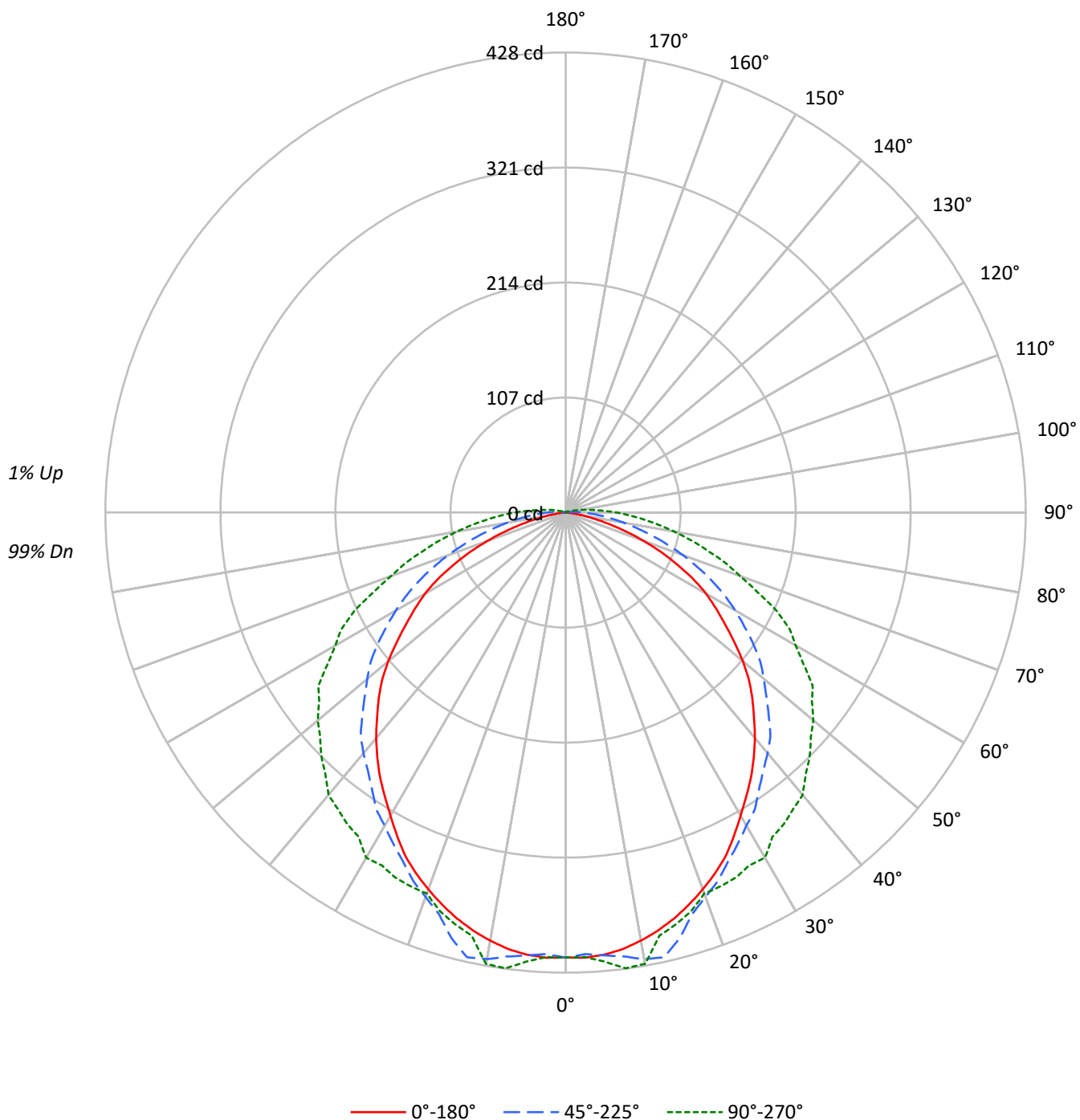
Input Watts (W): 11
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4455	4455	4455
5°	4397	4378	4465
10°	4293	4426	4525
15°	4169	4295	4230
20°	4029	4014	4074
25°	3885	3830	4128
30°	3692	3680	4205
35°	3539	3539	4164
40°	3378	3429	4227
45°	3207	3291	4190
50°	3009	3147	4202
55°	2744	2993	4252
60°	2521	2785	4128
65°	2150	2541	4068
70°	1671	2227	3730
75°	1110	1852	3507
80°	558	1477	3282
85°	166	1090	3090

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4252 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.8	3.2
10°-20°	113.3	9.1
20°-30°	168.6	13.5
30°-40°	202.6	16.2
40°-50°	213.3	17.1
50°-60°	197.9	15.9
60°-70°	156.5	12.5
70°-80°	95.6	7.7
80°-90°	41.6	3.3
90°-100°	13.0	1.0
100°-110°	2.9	0.2
110°-120°	1.2	0.1
120°-130°	0.7	0.1
130°-140°	0.2	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°	321.6	25.8
0°-40°	524.3	42.0
0°-60°	935.4	75.0
0°-90°	1229.1	98.6
90°-120°	17.0	1.4
90°-150°	17.9	1.4
90°-180°	18.0	1.4
0°-180°	1247.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	414	414	414	414	414	
5°	413	412	414	418	419	39
15°	391	406	410	396	396	110
25°	352	375	358	369	375	162
35°	301	309	314	342	354	188
45°	246	247	267	310	321	189
55°	181	184	213	260	280	163
65°	115	118	150	199	217	113
75°	43	57	84	129	137	47
85°	4	14	33	63	73	6
90°	0	4	17	40	47	0
95°	0	1	8	22	27	0
105°	0	1	2	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	413.9	413.9	413.9	413.9	413.9
2.5°	414.4	413.3	411.1	413.3	413.9
5°	412.9	412.1	413.5	418.2	419.3
7.5°	409.5	412.7	416.5	424.9	427.6
10°	404.3	410.4	421.8	428.9	426.2
12.5°	398.1	408.4	423.6	409.6	403.1
15°	390.8	405.8	409.8	396.2	396.5
17.5°	382.3	403.7	391.5	391.2	388.7
20°	373.1	396.7	380.5	379.8	377.2
22.5°	363.3	387.3	370.7	369.3	376.4
25°	352.5	375.1	357.9	368.7	374.6
27.5°	339.1	359.0	347.3	362.5	370.0
30°	325.6	342.5	336.4	357.6	370.9
32.5°	312.8	325.2	327.5	355.8	357.9
35°	300.8	309.1	313.8	342.3	353.9
37.5°	287.5	289.8	302.1	336.6	347.8
40°	274.0	272.6	292.3	327.3	342.9
42.5°	259.5	259.0	282.0	322.7	330.5
45°	245.8	246.9	267.2	309.5	321.1
47.5°	231.7	233.2	253.2	295.1	309.5
50°	215.4	217.2	240.7	282.3	300.8
52.5°	197.7	201.2	228.6	270.2	288.8
55°	181.0	184.0	213.2	259.8	280.5
57.5°	165.9	167.6	197.2	246.7	262.3
60°	150.9	151.4	182.2	232.2	247.1
62.5°	133.8	134.6	166.8	215.1	235.1
65°	114.6	118.2	150.2	198.7	216.8
67.5°	96.6	103.0	133.2	183.7	193.2
70°	77.4	88.1	116.6	166.1	172.8
72.5°	59.8	72.3	99.6	146.4	155.7
75°	43.3	57.4	83.7	128.7	136.8
77.5°	29.2	43.5	68.9	109.1	119.8
80°	17.5	31.8	55.7	91.0	103.0
82.5°	8.9	21.3	43.2	76.3	87.1
85°	3.9	13.5	32.6	63.3	72.7
87.5°	1.1	7.7	24.0	51.2	59.1
90°	0.1	4.0	17.1	40.1	47.3
92.5°	0.1	1.9	12.1	30.4	35.8
95°	0.1	1.0	7.5	22.0	26.9
97.5°	0.1	0.6	4.6	15.6	19.7
100°	0.1	0.5	2.7	10.4	14.1
102.5°	0.1	0.6	1.9	6.6	9.2
105°	0.1	0.6	1.5	4.3	6.1
107.5°	0.2	0.6	1.3	3.2	4.2
110°	0.1	0.5	1.4	2.4	3.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	2.0	2.4
115°	0.1	0.3	1.2	1.9	2.0
117.5°	0.2	0.3	0.9	1.9	2.0
120°	0.2	0.2	0.8	1.9	2.1
122.5°	0.2	0.2	0.6	1.7	2.0
125°	0.1	0.2	0.5	1.3	1.8
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.8	1.0
132.5°	0.2	0.2	0.3	0.6	0.8
135°	0.2	0.2	0.2	0.4	0.6
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)