

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: P517188

Luminaire Tested: HVL12-1-LD4-1STD-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: P517188
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1STD-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: 969.0 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

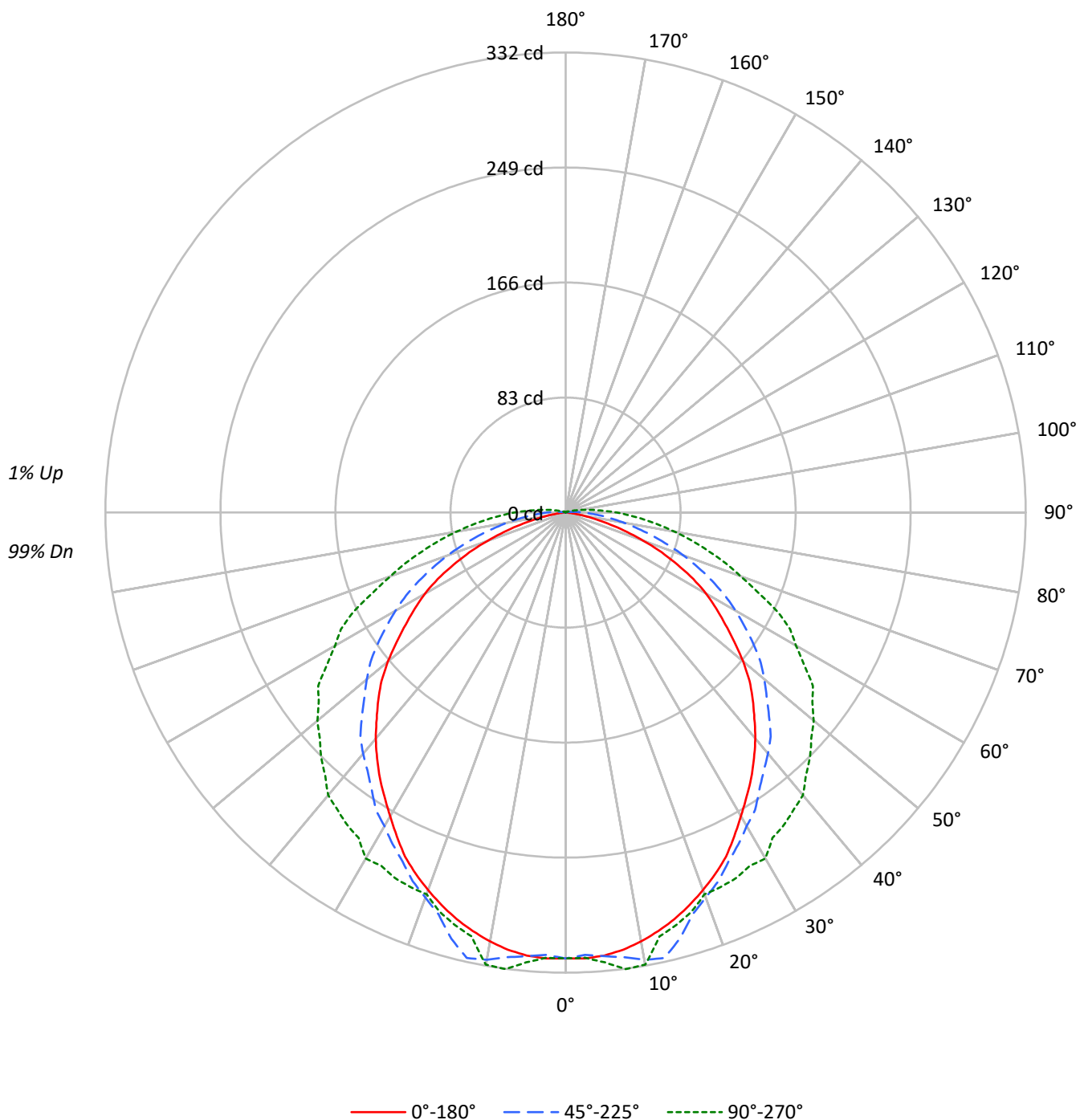
Input Watts (W): 8.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3463	3463	3463
5°	3417	3401	3470
10°	3336	3439	3517
15°	3240	3337	3287
20°	3131	3118	3165
25°	3019	2976	3208
30°	2868	2860	3268
35°	2750	2750	3236
40°	2626	2665	3284
45°	2492	2557	3255
50°	2337	2446	3265
55°	2133	2325	3303
60°	1959	2165	3207
65°	1670	1974	3161
70°	1299	1730	2899
75°	864	1440	2725
80°	433	1146	2552
85°	128	849	2402

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3303 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.9	3.2
10°-20°	88.0	9.1
20°-30°	131.0	13.5
30°-40°	157.4	16.2
40°-50°	165.7	17.1
50°-60°	153.8	15.9
60°-70°	121.6	12.5
70°-80°	74.3	7.7
80°-90°	32.4	3.3
90°-100°	10.1	1.0
100°-110°	2.3	0.2
110°-120°	0.9	0.1
120°-130°	0.5	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°	249.9	25.8
0°-40°	407.4	42.0
0°-60°	726.9	75.0
0°-90°	955.1	98.6
90°-120°	13.2	1.4
90°-150°	13.9	1.4
90°-180°	14.0	1.4
0°-180°	969.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	322	322	322	322	322	
5°	321	320	321	325	326	30
15°	304	315	318	308	308	86
25°	274	291	278	286	291	126
35°	234	240	244	266	275	146
45°	191	192	208	240	250	147
55°	141	143	166	202	218	126
65°	89	92	117	154	168	88
75°	34	45	65	100	106	37
85°	3	10	25	49	56	5
90°	0	3	13	31	37	0
95°	0	1	6	17	21	0
105°	0	0	1	3	5	0
115°	0	0	1	2	2	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°	321.7	321.7	321.7	321.7	321.7
2.5°	322.0	321.2	319.4	321.1	321.6
5°	320.9	320.2	321.3	324.9	325.8
7.5°	318.2	320.7	323.6	330.2	332.3
10°	314.2	318.9	327.7	333.3	331.2
12.5°	309.3	317.3	329.2	318.3	313.3
15°	303.7	315.4	318.4	307.9	308.1
17.5°	297.1	313.7	304.2	304.0	302.1
20°	289.9	308.2	295.6	295.1	293.1
22.5°	282.3	300.9	288.0	287.0	292.5
25°	274.0	291.4	278.1	286.5	291.1
27.5°	263.5	279.0	269.9	281.7	287.5
30°	253.0	266.2	261.4	277.9	288.2
32.5°	243.1	252.7	254.5	276.4	278.1
35°	233.7	240.2	243.8	266.0	275.0
37.5°	223.4	225.2	234.8	261.6	270.3
40°	213.0	211.8	227.2	254.4	266.4
42.5°	201.7	201.3	219.1	250.8	256.8
45°	191.0	191.9	207.6	240.5	249.5
47.5°	180.1	181.2	196.8	229.3	240.5
50°	167.3	168.8	187.1	219.4	233.7
52.5°	153.6	156.3	177.6	209.9	224.4
55°	140.7	143.0	165.6	201.9	217.9
57.5°	128.9	130.3	153.3	191.7	203.8
60°	117.3	117.6	141.6	180.5	192.0
62.5°	104.0	104.6	129.6	167.2	182.7
65°	89.0	91.9	116.7	154.4	168.5
67.5°	75.1	80.0	103.5	142.8	150.1
70°	60.2	68.5	90.6	129.1	134.3
72.5°	46.5	56.2	77.4	113.7	121.0
75°	33.7	44.6	65.1	100.0	106.3
77.5°	22.7	33.8	53.5	84.8	93.1
80°	13.6	24.7	43.2	70.7	80.1
82.5°	6.9	16.6	33.5	59.3	67.7
85°	3.0	10.5	25.4	49.2	56.5
87.5°	0.9	6.0	18.7	39.8	45.9
90°	0.1	3.1	13.3	31.2	36.8
92.5°	0.1	1.5	9.4	23.6	27.8
95°	0.1	0.8	5.8	17.1	20.9
97.5°	0.1	0.5	3.5	12.1	15.3
100°	0.1	0.4	2.1	8.1	10.9
102.5°	0.1	0.5	1.4	5.1	7.1
105°	0.1	0.5	1.2	3.3	4.7
107.5°	0.1	0.5	1.0	2.5	3.3
110°	0.1	0.4	1.1	1.9	2.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	1.0	1.6	1.9
115°	0.1	0.3	0.9	1.5	1.6
117.5°	0.1	0.2	0.7	1.5	1.6
120°	0.1	0.1	0.6	1.4	1.6
122.5°	0.1	0.1	0.5	1.3	1.6
125°	0.1	0.1	0.4	1.0	1.4
127.5°	0.1	0.1	0.3	0.8	1.0
130°	0.1	0.1	0.3	0.6	0.8
132.5°	0.1	0.1	0.2	0.5	0.6
135°	0.1	0.1	0.1	0.3	0.5
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)