

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: P517332

Luminaire Tested: HVL12-2-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: P517332
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1STD-40-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1938.0 lumens
Efficiency: N/A
Efficacy: 116.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

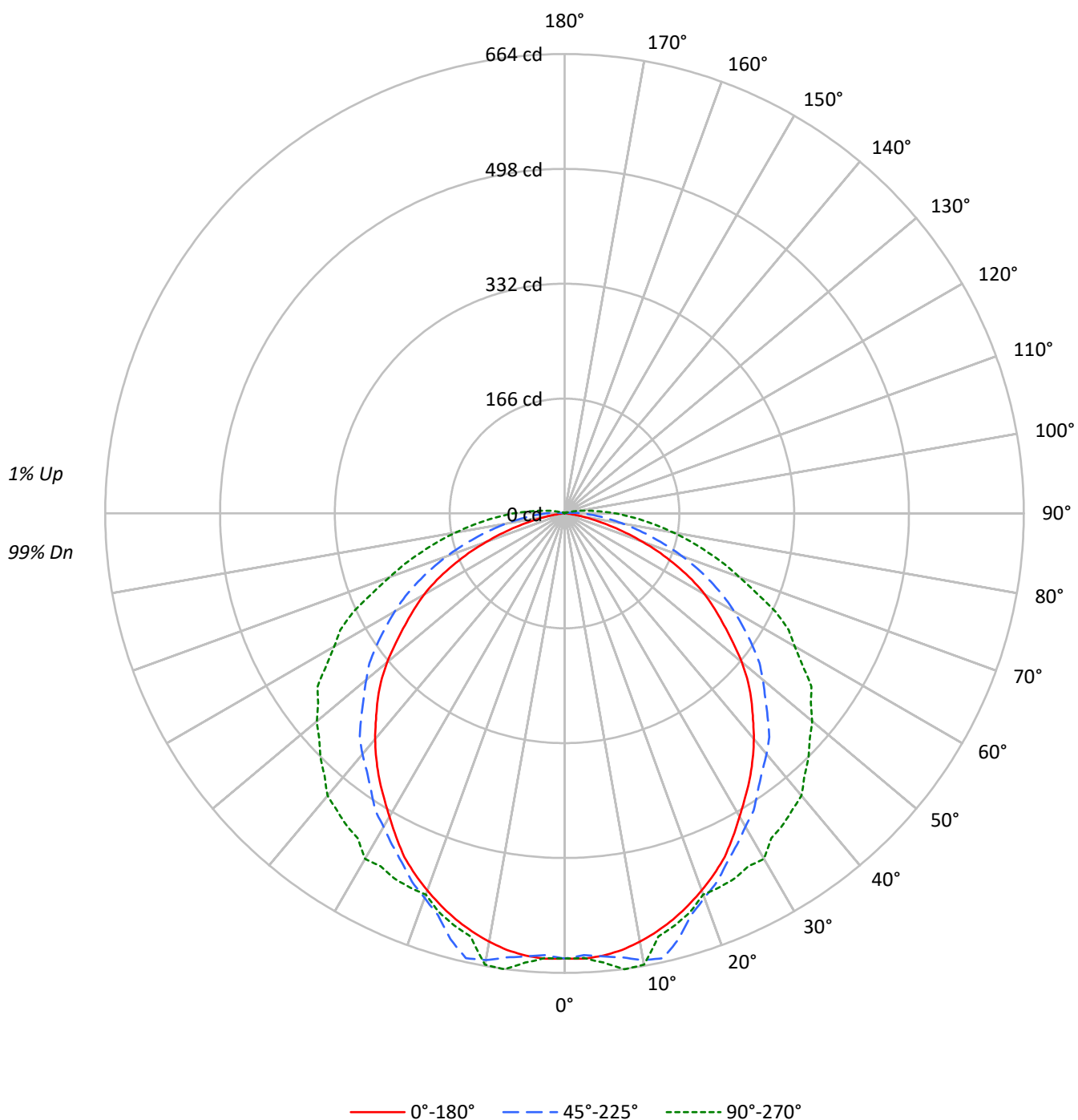
Input Watts (W): 16.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3462	3462	3462
5°	3442	3419	3470
10°	3384	3474	3516
15°	3310	3388	3287
20°	3224	3182	3165
25°	3132	3052	3208
30°	3000	2949	3268
35°	2902	2851	3236
40°	2797	2779	3284
45°	2684	2686	3255
50°	2549	2587	3265
55°	2360	2482	3304
60°	2207	2334	3208
65°	1924	2155	3161
70°	1540	1919	2898
75°	1069	1630	2725
80°	570	1339	2551
85°	190	1036	2402

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3304 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.8	3.2
10°-20°	176.1	9.1
20°-30°	262.0	13.5
30°-40°	314.9	16.2
40°-50°	331.4	17.1
50°-60°	307.5	15.9
60°-70°	243.2	12.5
70°-80°	148.5	7.7
80°-90°	64.7	3.3
90°-100°	20.1	1.0
100°-110°	4.5	0.2
110°-120°	1.8	0.1
120°-130°	1.0	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°	499.9	25.8
0°-40°	814.8	42.0
0°-60°	1453.8	75.0
0°-90°	1910.2	98.6
90°-120°	26.5	1.4
90°-150°	27.8	1.4
90°-180°	28.0	1.4
0°-180°	1938.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	643	643	643	643	643	
5°	642	640	643	650	652	61
15°	607	631	637	616	616	171
25°	548	583	556	573	582	252
35°	467	480	488	532	550	292
45°	382	384	415	481	499	294
55°	281	286	331	404	436	253
65°	178	184	233	309	337	176
75°	67	89	130	200	213	74
85°	6	21	51	98	113	9
90°	0	6	27	62	74	0
95°	0	2	12	34	42	0
105°	0	1	2	7	9	0
115°	0	0	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	643.3	643.3	643.3	643.3	643.3
2.5°	644.1	642.4	638.9	642.3	643.2
5°	641.7	640.4	642.7	649.9	651.7
7.5°	636.4	641.3	647.2	660.3	664.5
10°	628.4	637.8	655.5	666.6	662.3
12.5°	618.7	634.7	658.4	636.6	626.5
15°	607.4	630.7	636.9	615.8	616.2
17.5°	594.2	627.5	608.5	607.9	604.1
20°	579.9	616.4	591.3	590.2	586.2
22.5°	564.6	601.9	576.1	574.0	585.0
25°	547.9	582.9	556.3	572.9	582.2
27.5°	527.1	558.0	539.8	563.4	575.0
30°	506.0	532.3	522.9	555.8	576.5
32.5°	486.2	505.4	509.0	552.9	556.3
35°	467.4	480.4	487.6	531.9	550.0
37.5°	446.9	450.4	469.5	523.1	540.6
40°	425.9	423.7	454.3	508.7	532.8
42.5°	403.4	402.6	438.2	501.5	513.6
45°	382.0	383.7	415.3	481.1	499.0
47.5°	360.1	362.3	393.5	458.7	480.9
50°	334.7	337.6	374.1	438.7	467.4
52.5°	307.2	312.7	355.3	419.9	448.8
55°	281.4	285.9	331.3	403.8	435.9
57.5°	257.8	260.5	306.5	383.4	407.7
60°	234.6	235.2	283.2	360.9	384.1
62.5°	208.0	209.2	259.2	334.3	365.4
65°	178.1	183.7	233.4	308.9	336.9
67.5°	150.2	160.0	207.1	285.6	300.2
70°	120.3	136.9	181.2	258.2	268.5
72.5°	92.9	112.4	154.8	227.5	242.0
75°	67.4	89.2	130.1	200.0	212.6
77.5°	45.3	67.6	107.1	169.6	186.2
80°	27.1	49.4	86.5	141.4	160.1
82.5°	13.9	33.2	67.1	118.6	135.4
85°	6.0	21.0	50.7	98.4	113.0
87.5°	1.7	11.9	37.3	79.5	91.9
90°	0.1	6.3	26.6	62.4	73.5
92.5°	0.1	3.0	18.7	47.2	55.7
95°	0.1	1.6	11.7	34.2	41.8
97.5°	0.1	0.9	7.1	24.2	30.7
100°	0.1	0.8	4.2	16.1	21.9
102.5°	0.1	0.9	2.9	10.2	14.3
105°	0.1	0.9	2.4	6.7	9.4
107.5°	0.3	0.9	2.1	5.0	6.6
110°	0.1	0.8	2.2	3.8	5.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.1	3.1	3.8
115°	0.1	0.5	1.8	3.0	3.1
117.5°	0.3	0.4	1.4	3.0	3.1
120°	0.3	0.3	1.2	2.9	3.3
122.5°	0.3	0.3	0.9	2.6	3.1
125°	0.1	0.3	0.8	2.0	2.8
127.5°	0.3	0.3	0.7	1.6	2.1
130°	0.3	0.3	0.5	1.2	1.6
132.5°	0.3	0.3	0.4	0.9	1.2
135°	0.3	0.3	0.3	0.7	0.9
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)