

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: P517932

Luminaire Tested: HVL8-2-LD4-2LO-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: P517932
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2LO-30-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2580.9 lumens
Efficiency: N/A
Efficacy: 111.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

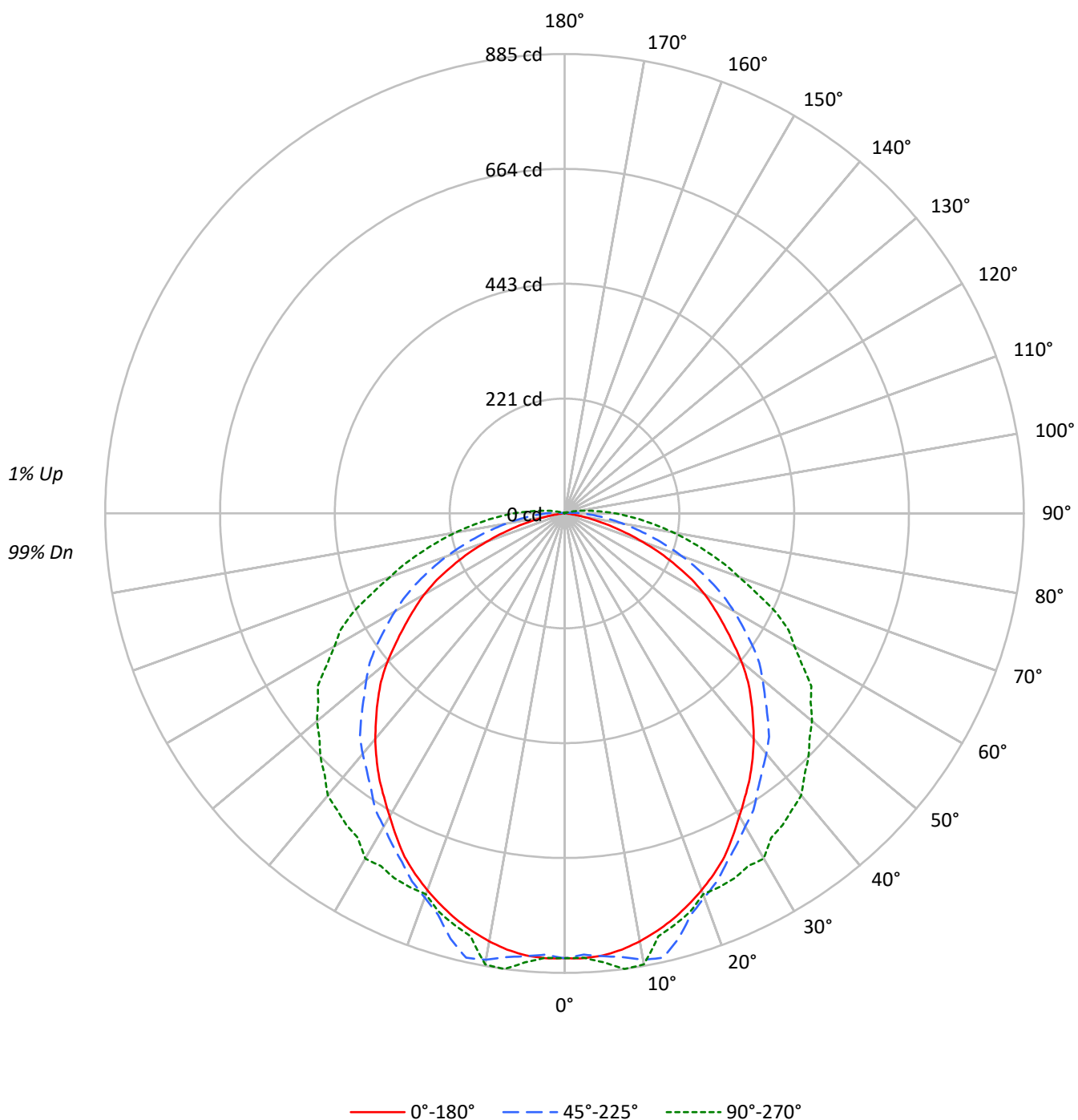
Input Watts (W): 23.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6917	6917	6917
5°	6876	6796	6883
10°	6761	6871	6926
15°	6613	6668	6428
20°	6440	6231	6148
25°	6257	5946	6186
30°	5993	5714	6254
35°	5797	5493	6143
40°	5587	5324	6181
45°	5361	5110	6070
50°	5092	4886	6023
55°	4713	4646	6020
60°	4408	4324	5763
65°	3844	3943	5579
70°	3077	3458	5003
75°	2134	2876	4568
80°	1140	2292	4101
85°	379	1692	3611

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6070 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	82.3	3.2
10°-20°	234.5	9.1
20°-30°	348.9	13.5
30°-40°	419.4	16.2
40°-50°	441.4	17.1
50°-60°	409.6	15.9
60°-70°	323.9	12.5
70°-80°	197.8	7.7
80°-90°	86.2	3.3
90°-100°	26.8	1.0
100°-110°	6.0	0.2
110°-120°	2.4	0.1
120°-130°	1.3	0.1
130°-140°	0.4	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°	665.7	25.8
0°-40°	1085.1	42.0
0°-60°	1936.1	75.0
0°-90°	2544.0	98.6
90°-120°	35.3	1.4
90°-150°	37.0	1.4
90°-180°	37.0	1.4
0°-180°	2580.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	857	857	857	857	857	
5°	855	853	856	866	868	81
15°	809	840	848	820	821	228
25°	730	776	741	763	775	335
35°	622	640	649	708	732	389
45°	509	511	553	641	665	392
55°	375	381	441	538	580	337
65°	237	245	311	411	449	235
75°	90	119	173	266	283	98
85°	8	28	68	131	150	12
90°	0	8	35	83	98	0
95°	0	2	16	46	56	0
105°	0	1	3	9	13	0
115°	0	1	2	4	4	0
125°	0	0	1	3	4	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°	856.8	856.8	856.8	856.8	856.8
2.5°	857.8	855.5	850.8	855.4	856.6
5°	854.7	852.9	855.9	865.5	867.9
7.5°	847.5	854.1	862.0	879.4	885.0
10°	836.9	849.4	873.0	887.8	882.1
12.5°	823.9	845.2	876.8	847.9	834.4
15°	808.9	840.0	848.2	820.1	820.6
17.5°	791.3	835.6	810.3	809.6	804.6
20°	772.3	821.0	787.5	786.1	780.7
22.5°	751.9	801.6	767.2	764.4	779.1
25°	729.7	776.3	740.9	763.0	775.4
27.5°	701.9	743.1	718.9	750.3	765.8
30°	673.8	708.9	696.4	740.2	767.7
32.5°	647.5	673.1	677.9	736.3	740.9
35°	622.5	639.8	649.4	708.4	732.5
37.5°	595.1	599.8	625.3	696.7	719.9
40°	567.2	564.2	605.1	677.5	709.6
42.5°	537.2	536.1	583.6	667.9	684.0
45°	508.7	511.0	553.1	640.7	664.6
47.5°	479.6	482.6	524.1	610.8	640.5
50°	445.7	449.6	498.3	584.3	622.5
52.5°	409.1	416.4	473.1	559.2	597.8
55°	374.7	380.8	441.2	537.7	580.5
57.5°	343.3	347.0	408.2	510.7	543.0
60°	312.4	313.3	377.2	480.6	511.5
62.5°	277.0	278.5	345.2	445.2	486.6
65°	237.2	244.7	310.8	411.4	448.7
67.5°	200.0	213.1	275.8	380.3	399.8
70°	160.2	182.4	241.4	343.8	357.6
72.5°	123.7	149.7	206.1	303.0	322.4
75°	89.7	118.9	173.3	266.3	283.1
77.5°	60.4	90.1	142.6	225.8	248.0
80°	36.1	65.8	115.2	188.3	213.3
82.5°	18.5	44.2	89.4	157.9	180.3
85°	8.0	27.9	67.5	131.1	150.4
87.5°	2.3	15.9	49.7	105.9	122.3
90°	0.2	8.4	35.4	83.1	97.9
92.5°	0.2	4.0	25.0	62.8	74.2
95°	0.2	2.1	15.5	45.6	55.7
97.5°	0.2	1.2	9.4	32.3	40.8
100°	0.2	1.0	5.6	21.5	29.1
102.5°	0.2	1.2	3.8	13.6	19.0
105°	0.2	1.2	3.1	8.9	12.6
107.5°	0.3	1.2	2.8	6.6	8.7
110°	0.2	1.0	3.0	5.1	6.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.9	2.8	4.2	5.1
115°	0.2	0.7	2.4	4.0	4.2
117.5°	0.3	0.5	1.9	4.0	4.2
120°	0.3	0.3	1.6	3.8	4.4
122.5°	0.3	0.3	1.2	3.5	4.2
125°	0.2	0.3	1.0	2.6	3.7
127.5°	0.3	0.3	0.9	2.1	2.8
130°	0.3	0.3	0.7	1.6	2.1
132.5°	0.3	0.3	0.5	1.2	1.6
135°	0.3	0.3	0.3	0.9	1.2
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)