

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: P517785

Luminaire Tested: HVL8-1-LD4-2HI-50-UNV-O-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: P517785
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-50-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1817.0 lumens
Efficiency: N/A
Efficacy: 84.5 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

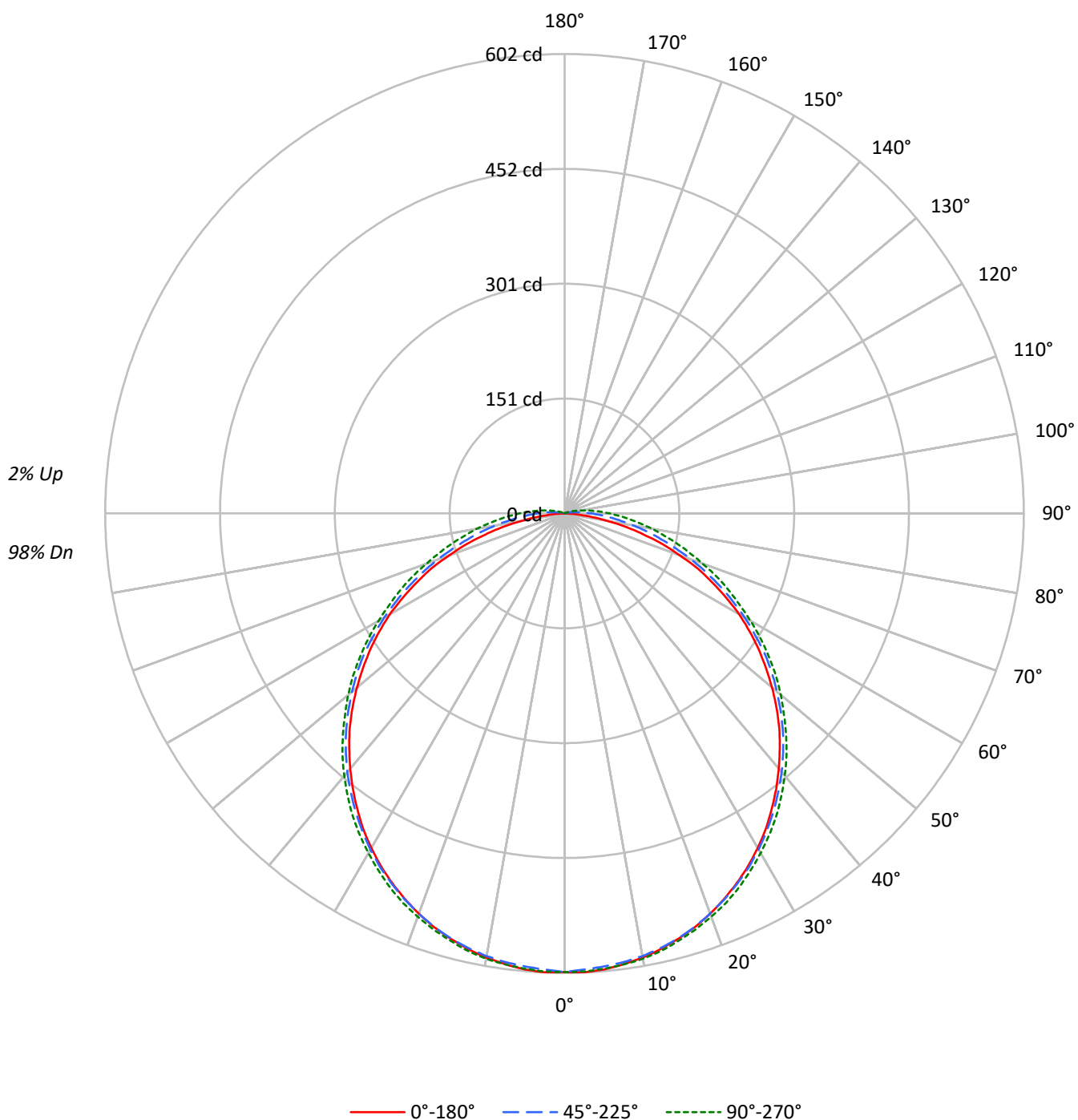
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	9704	9704	9704
5°	9580	9415	9496
10°	9413	9178	9305
15°	9231	8928	9077
20°	9042	8659	8856
25°	8835	8387	8630
30°	8611	8103	8374
35°	8352	7799	8120
40°	8080	7481	7824
45°	7791	7141	7504
50°	7443	6757	7160
55°	7064	6344	6783
60°	6625	5828	6341
65°	6009	5260	5901
70°	5203	4609	5392
75°	4157	3907	4928
80°	2791	3216	4507
85°	1192	2519	4101

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7791 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.9	3.1
10°-20°	163.1	9.0
20°-30°	247.5	13.6
30°-40°	299.3	16.5
40°-50°	312.3	17.2
50°-60°	285.5	15.7
60°-70°	222.6	12.3
70°-80°	139.2	7.7
80°-90°	63.2	3.5
90°-100°	21.2	1.2
100°-110°	5.3	0.3
110°-120°	0.8	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	467.5	25.7
0°-40°	766.8	42.2
0°-60°	1364.6	75.1
0°-90°	1789.7	98.5
90°-120°	27.4	1.5
90°-150°	27.4	1.5
90°-180°	27.0	1.5
0°-180°	1817.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	601	601	601	601	601	
5°	600	598	596	599	599	57
15°	577	578	576	580	579	163
25°	534	535	536	540	541	246
35°	473	475	477	482	484	296
45°	398	402	405	409	411	307
55°	311	314	320	325	327	278
65°	214	217	225	234	237	211
75°	108	115	132	147	153	115
85°	19	35	59	78	85	24
90°	0	13	35	53	59	1
95°	0	3	18	33	38	0
105°	0	0	3	9	12	0
115°	0	0	1	2	2	0
125°	0	0	0	0	0	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°	601.0	601.0	601.0	601.0	601.0
2.5°	601.7	600.8	598.1	600.8	600.7
5°	599.7	598.5	595.9	598.7	598.7
7.5°	595.7	595.3	592.9	596.1	596.1
10°	591.0	590.9	588.9	592.5	592.6
12.5°	584.5	585.1	583.2	586.6	587.1
15°	576.9	577.9	576.3	579.6	579.4
17.5°	568.5	569.1	567.9	571.6	571.5
20°	558.2	558.9	558.0	561.9	562.3
22.5°	546.7	547.7	547.5	551.5	552.6
25°	534.5	534.9	535.5	540.0	540.9
27.5°	521.1	521.8	522.8	526.9	527.7
30°	506.3	507.5	508.6	512.8	514.0
32.5°	490.7	491.9	493.3	498.8	499.4
35°	473.2	475.3	477.3	482.1	484.1
37.5°	455.6	458.3	460.1	465.2	466.8
40°	437.0	439.7	442.7	448.1	449.1
42.5°	417.6	420.8	424.3	429.1	430.8
45°	398.1	401.6	404.9	408.9	410.8
47.5°	377.0	380.5	384.5	389.0	390.3
50°	355.2	359.3	363.5	367.8	370.0
52.5°	332.8	337.7	342.6	347.1	349.2
55°	310.7	314.4	320.2	324.8	327.0
57.5°	287.7	290.8	296.1	303.7	304.9
60°	264.4	267.2	272.6	278.8	281.4
62.5°	238.6	242.4	248.1	256.0	258.3
65°	213.5	217.2	224.7	233.6	237.3
67.5°	189.3	190.5	200.2	209.5	215.5
70°	160.7	165.5	176.7	188.1	192.7
72.5°	136.0	140.8	153.1	166.6	172.3
75°	108.1	114.8	131.5	147.2	152.7
77.5°	83.6	91.0	111.6	127.5	133.9
80°	58.4	69.8	92.4	110.2	117.2
82.5°	36.7	50.9	74.9	93.6	99.7
85°	18.7	34.6	59.4	78.5	85.4
87.5°	5.0	22.4	46.2	64.5	71.5
90°	0.1	12.9	35.0	52.6	58.9
92.5°	0.1	7.2	26.1	41.8	48.3
95°	0.1	3.4	18.1	32.9	38.0
97.5°	0.1	1.4	12.5	24.8	29.9
100°	0.1	0.7	7.9	18.0	22.4
102.5°	0.3	0.4	5.0	12.9	16.4
105°	0.3	0.4	3.0	8.8	11.8
107.5°	0.3	0.4	1.7	6.0	8.1
110°	0.4	0.4	1.0	3.7	5.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.6	2.4	3.5
115°	0.4	0.4	0.6	1.6	2.3
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)