

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: P517905

Luminaire Tested: HVL8-2-LD4-1STD-35-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: P517905
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1STD-35-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1664.0 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

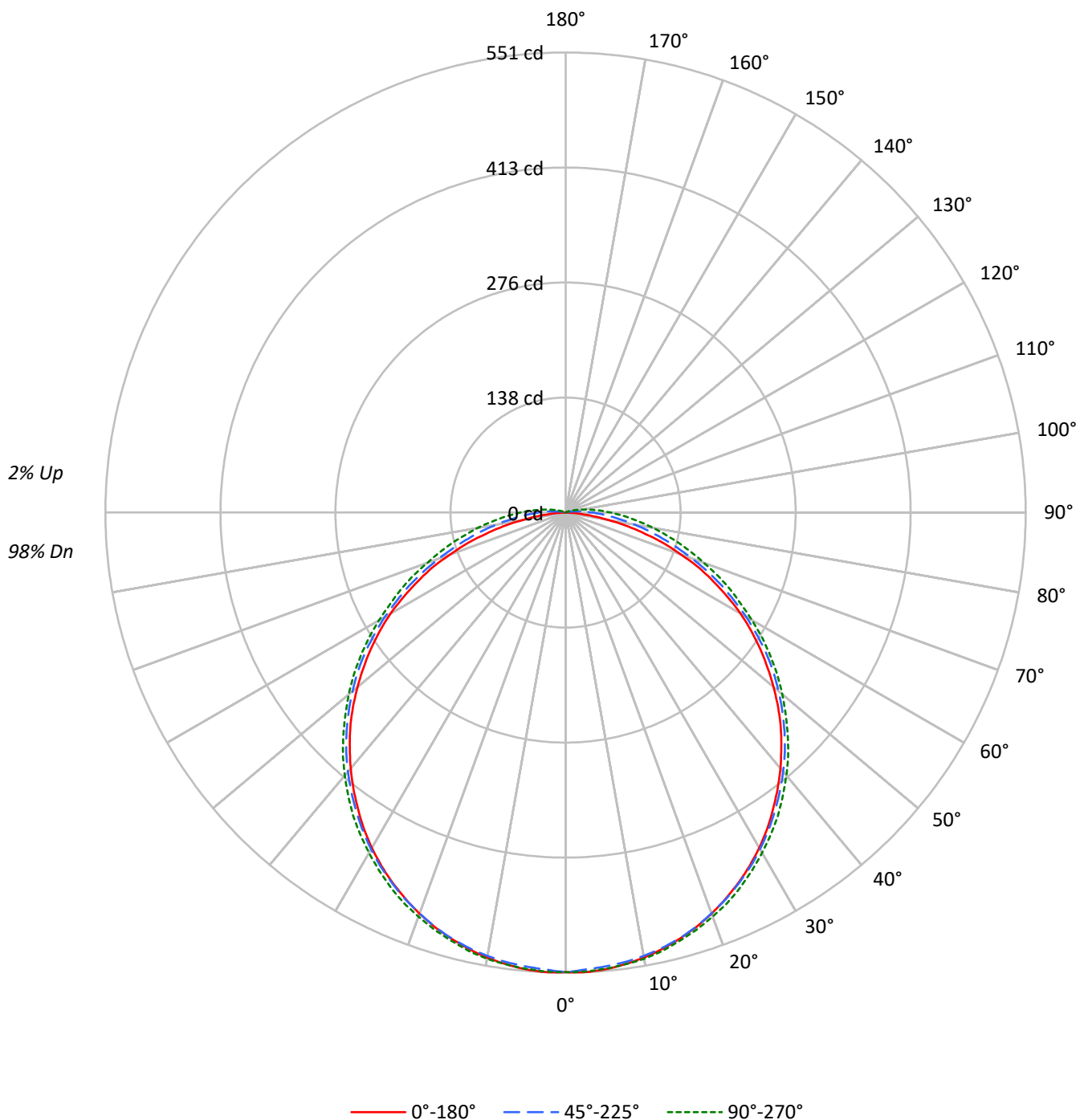
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4443	4443	4443
5°	4418	4333	4348
10°	4373	4244	4261
15°	4319	4149	4156
20°	4262	4043	4055
25°	4197	3936	3951
30°	4124	3822	3834
35°	4035	3697	3718
40°	3942	3567	3583
45°	3842	3426	3436
50°	3716	3264	3279
55°	3578	3087	3105
60°	3416	2862	2903
65°	3168	2611	2702
70°	2825	2318	2468
75°	2355	1998	2257
80°	1689	1683	2063
85°	811	1364	1877

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3842 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.1	3.1
10°-20°	149.4	9.0
20°-30°	226.7	13.6
30°-40°	274.1	16.5
40°-50°	286.0	17.2
50°-60°	261.5	15.7
60°-70°	203.8	12.2
70°-80°	127.5	7.7
80°-90°	57.9	3.5
90°-100°	19.4	1.2
100°-110°	4.9	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°	428.1	25.7
0°-40°	702.2	42.2
0°-60°	1249.7	75.1
0°-90°	1639.0	98.5
90°-120°	25.0	1.5
90°-150°	25.0	1.5
90°-180°	25.0	1.5
0°-180°	1664.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	550	550	550	550	550	
5°	549	548	546	548	548	52
15°	528	529	528	531	531	149
25°	490	490	490	495	495	226
35°	433	435	437	442	443	271
45°	365	368	371	374	376	281
55°	284	288	293	298	299	254
65°	196	199	206	214	217	193
75°	99	105	120	135	140	106
85°	17	32	54	72	78	22
90°	0	12	32	48	54	1
95°	0	3	17	30	35	0
105°	0	0	3	8	11	0
115°	0	0	0	1	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°	550.4	550.4	550.4	550.4	550.4
2.5°	551.0	550.2	547.8	550.2	550.1
5°	549.2	548.1	545.7	548.3	548.3
7.5°	545.6	545.2	543.0	545.9	545.9
10°	541.3	541.1	539.3	542.6	542.7
12.5°	535.3	535.8	534.1	537.2	537.6
15°	528.3	529.2	527.8	530.8	530.6
17.5°	520.6	521.2	520.1	523.5	523.4
20°	511.2	511.8	511.0	514.5	514.9
22.5°	500.7	501.6	501.4	505.1	506.1
25°	489.5	489.9	490.4	494.6	495.3
27.5°	477.2	477.8	478.7	482.5	483.3
30°	463.7	464.7	465.8	469.7	470.7
32.5°	449.4	450.5	451.7	456.8	457.3
35°	433.3	435.3	437.1	441.5	443.3
37.5°	417.2	419.7	421.4	426.1	427.5
40°	400.2	402.7	405.4	410.4	411.3
42.5°	382.5	385.3	388.6	393.0	394.5
45°	364.6	367.8	370.8	374.4	376.2
47.5°	345.2	348.5	352.1	356.3	357.4
50°	325.3	329.0	332.9	336.8	338.9
52.5°	304.8	309.3	313.7	317.9	319.8
55°	284.5	287.9	293.2	297.5	299.4
57.5°	263.5	266.4	271.2	278.2	279.2
60°	242.1	244.7	249.6	255.3	257.7
62.5°	218.5	222.0	227.2	234.4	236.5
65°	195.5	198.9	205.8	213.9	217.3
67.5°	173.3	174.5	183.3	191.9	197.3
70°	147.1	151.5	161.8	172.3	176.4
72.5°	124.5	129.0	140.2	152.6	157.8
75°	99.0	105.1	120.4	134.8	139.9
77.5°	76.5	83.3	102.2	116.8	122.6
80°	53.5	64.0	84.6	100.9	107.3
82.5°	33.6	46.6	68.6	85.8	91.3
85°	17.1	31.7	54.4	71.9	78.2
87.5°	4.5	20.5	42.3	59.0	65.5
90°	0.1	11.8	32.0	48.1	54.0
92.5°	0.1	6.6	23.9	38.3	44.2
95°	0.1	3.1	16.6	30.1	34.8
97.5°	0.1	1.3	11.4	22.7	27.4
100°	0.1	0.6	7.3	16.5	20.5
102.5°	0.3	0.4	4.5	11.8	15.0
105°	0.3	0.4	2.7	8.0	10.8
107.5°	0.3	0.4	1.6	5.4	7.4
110°	0.4	0.4	0.9	3.4	4.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.5	2.2	3.2
115°	0.4	0.4	0.5	1.4	2.1
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)