

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: P517911

Luminaire Tested: HVL8-2-LD4-1STD-50-UNV-C-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: P517911
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1STD-50-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1642.0 lumens
Efficiency: N/A
Efficacy: 100.7 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

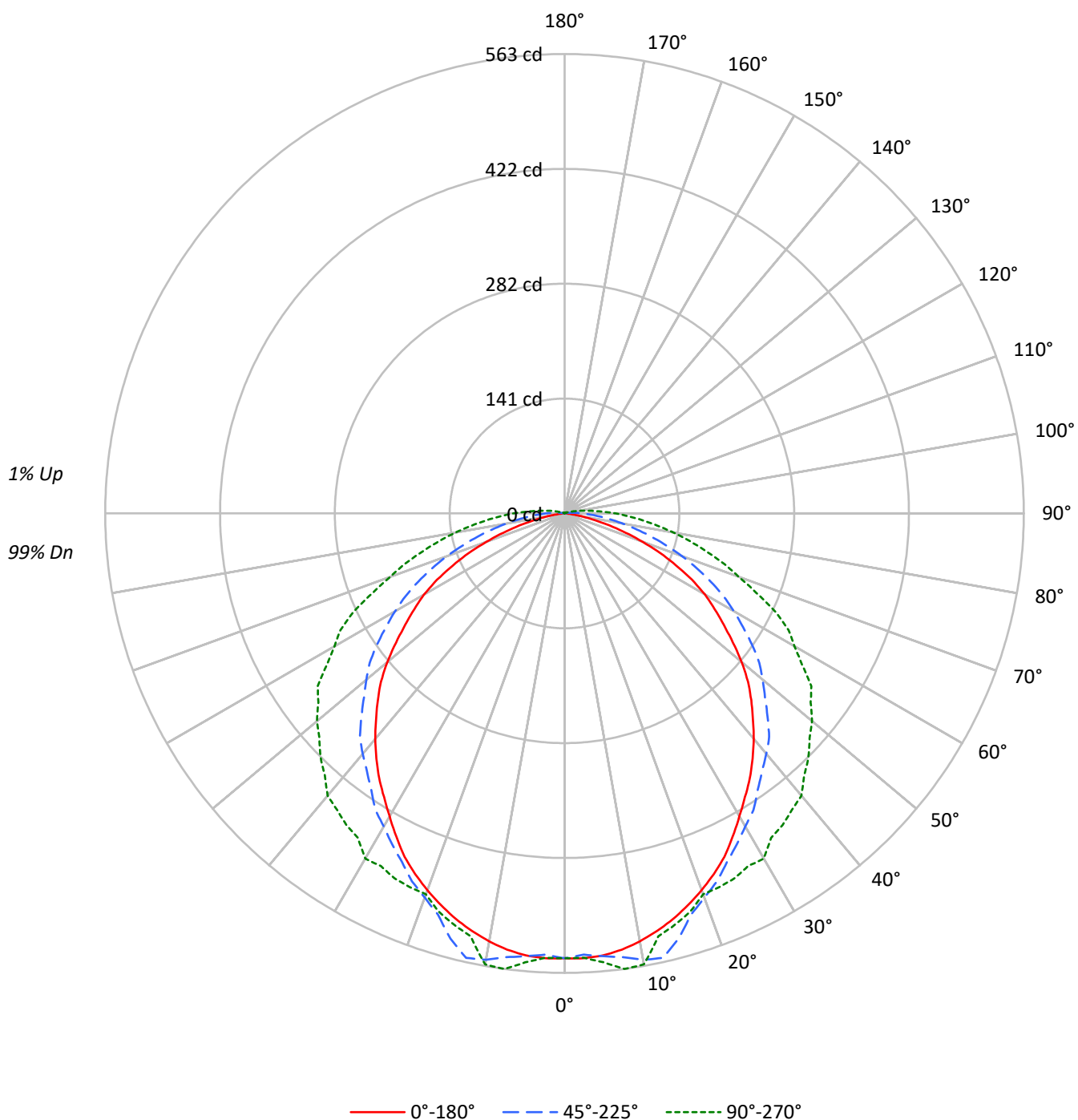
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	4401	4401	4401
5°	4374	4323	4379
10°	4301	4371	4406
15°	4207	4242	4090
20°	4097	3964	3910
25°	3980	3782	3935
30°	3813	3635	3978
35°	3688	3494	3908
40°	3555	3386	3933
45°	3411	3251	3861
50°	3240	3108	3833
55°	2998	2956	3830
60°	2803	2750	3666
65°	2445	2508	3550
70°	1957	2200	3183
75°	1358	1830	2906
80°	726	1458	2609
85°	242	1078	2298

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3861 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.4	3.2
10°-20°	149.2	9.1
20°-30°	222.0	13.5
30°-40°	266.8	16.2
40°-50°	280.8	17.1
50°-60°	260.6	15.9
60°-70°	206.0	12.5
70°-80°	125.9	7.7
80°-90°	54.8	3.3
90°-100°	17.1	1.0
100°-110°	3.8	0.2
110°-120°	1.5	0.1
120°-130°	0.9	0.1
130°-140°	0.2	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°	423.5	25.8
0°-40°	690.3	42.0
0°-60°	1231.7	75.0
0°-90°	1618.4	98.6
90°-120°	22.5	1.4
90°-150°	23.6	1.4
90°-180°	24.0	1.5
0°-180°	1642.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	545	545	545	545	545	
5°	544	543	544	551	552	52
15°	515	534	540	522	522	145
25°	464	494	471	485	493	213
35°	396	407	413	451	466	248
45°	324	325	352	408	423	250
55°	238	242	281	342	369	214
65°	151	156	198	262	286	149
75°	57	76	110	169	180	62
85°	5	18	43	83	96	8
90°	0	5	22	53	62	0
95°	0	1	10	29	35	0
105°	0	1	2	6	8	0
115°	0	0	2	3	3	0
125°	0	0	1	2	2	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°	545.1	545.1	545.1	545.1	545.1
2.5°	545.7	544.3	541.3	544.2	544.9
5°	543.7	542.6	544.5	550.6	552.2
7.5°	539.2	543.4	548.4	559.5	563.0
10°	532.4	540.4	555.4	564.8	561.2
12.5°	524.2	537.7	557.8	539.4	530.8
15°	514.6	534.4	539.6	521.7	522.1
17.5°	503.4	531.6	515.5	515.1	511.9
20°	491.3	522.3	501.0	500.1	496.6
22.5°	478.3	510.0	488.1	486.3	495.6
25°	464.2	493.9	471.3	485.4	493.3
27.5°	446.6	472.8	457.3	477.3	487.2
30°	428.7	451.0	443.0	470.9	488.4
32.5°	411.9	428.2	431.2	468.4	471.3
35°	396.1	407.0	413.1	450.7	466.0
37.5°	378.6	381.6	397.8	443.2	458.0
40°	360.9	359.0	384.9	431.0	451.5
42.5°	341.8	341.1	371.3	424.9	435.1
45°	323.7	325.1	351.9	407.6	422.8
47.5°	305.1	307.0	333.4	388.6	407.5
50°	283.6	286.0	317.0	371.7	396.1
52.5°	260.3	264.9	301.0	355.7	380.3
55°	238.4	242.3	280.7	342.1	369.3
57.5°	218.4	220.7	259.7	324.9	345.4
60°	198.7	199.3	239.9	305.8	325.4
62.5°	176.2	177.2	219.6	283.2	309.6
65°	150.9	155.7	197.7	261.7	285.5
67.5°	127.2	135.6	175.4	241.9	254.4
70°	101.9	116.0	153.6	218.7	227.5
72.5°	78.7	95.3	131.1	192.8	205.1
75°	57.1	75.6	110.3	169.4	180.1
77.5°	38.4	57.3	90.7	143.7	157.8
80°	23.0	41.9	73.3	119.8	135.7
82.5°	11.8	28.1	56.8	100.5	114.7
85°	5.1	17.8	43.0	83.4	95.7
87.5°	1.4	10.1	31.6	67.4	77.8
90°	0.1	5.3	22.5	52.9	62.3
92.5°	0.1	2.6	15.9	40.0	47.2
95°	0.1	1.3	9.9	29.0	35.4
97.5°	0.1	0.8	6.0	20.5	26.0
100°	0.1	0.7	3.6	13.7	18.5
102.5°	0.1	0.8	2.4	8.7	12.1
105°	0.1	0.8	2.0	5.7	8.0
107.5°	0.2	0.8	1.8	4.2	5.6
110°	0.1	0.7	1.9	3.2	4.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	1.8	2.7	3.2
115°	0.1	0.4	1.6	2.6	2.7
117.5°	0.2	0.3	1.2	2.6	2.7
120°	0.2	0.2	1.0	2.4	2.8
122.5°	0.2	0.2	0.8	2.2	2.7
125°	0.1	0.2	0.7	1.7	2.3
127.5°	0.2	0.2	0.6	1.3	1.8
130°	0.2	0.2	0.4	1.0	1.3
132.5°	0.2	0.2	0.3	0.8	1.0
135°	0.2	0.2	0.2	0.6	0.8
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)