

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: P517900

Luminaire Tested: HVL8-2-LD4-1STD-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: P517900
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1STD-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: 1750.9 lumens
Efficiency: N/A
Efficacy: 107.4 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

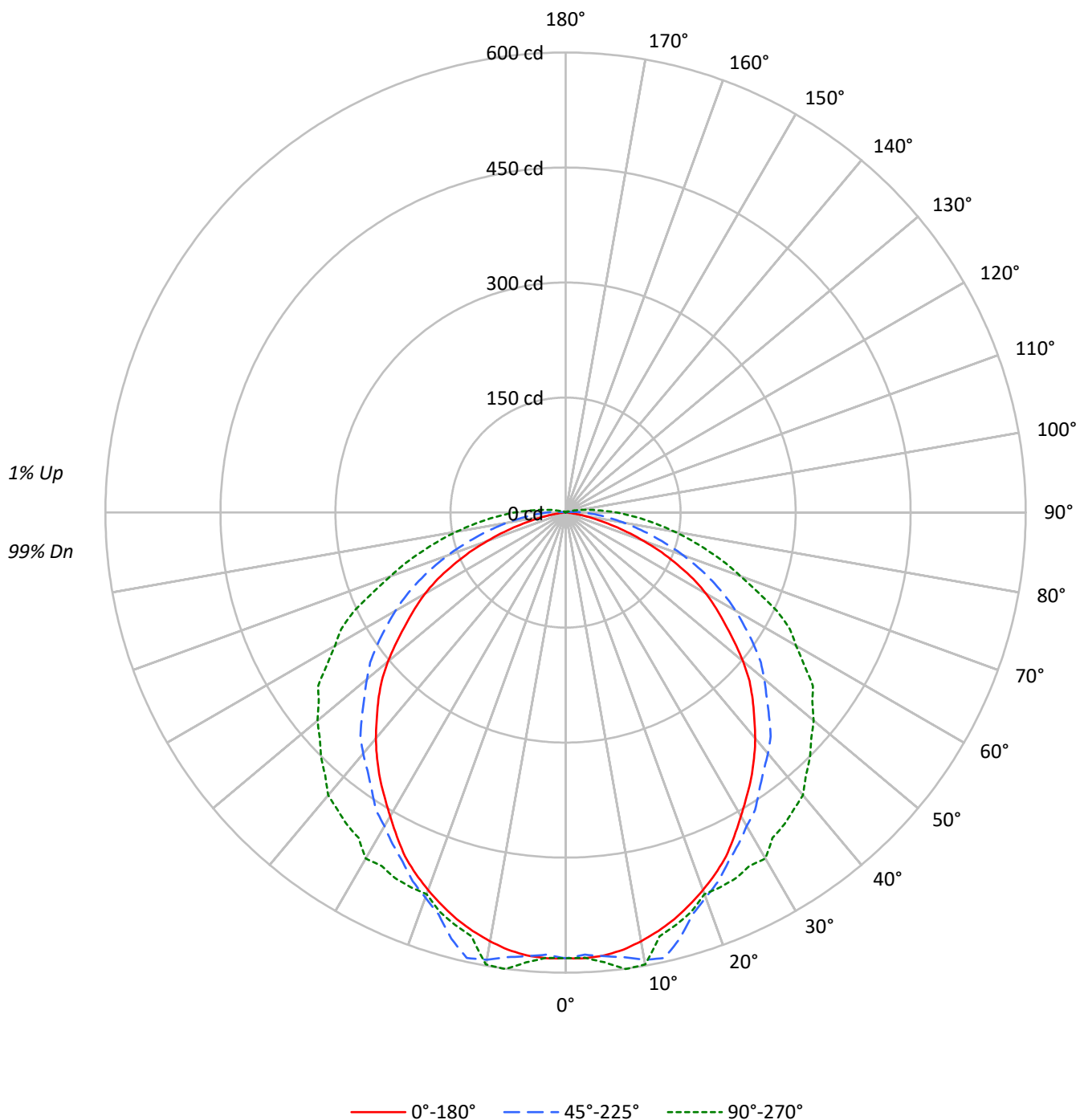
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
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	40	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°	4692	4692	4692
5°	4665	4610	4669
10°	4586	4661	4698
15°	4487	4523	4361
20°	4368	4227	4170
25°	4244	4033	4197
30°	4066	3876	4243
35°	3932	3727	4167
40°	3790	3612	4193
45°	3637	3466	4118
50°	3455	3314	4086
55°	3197	3152	4084
60°	2990	2934	3909
65°	2607	2676	3785
70°	2088	2346	3394
75°	1449	1951	3098
80°	773	1554	2782
85°	256	1148	2451

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4118 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.9	3.2
10°-20°	159.1	9.1
20°-30°	236.7	13.5
30°-40°	284.5	16.2
40°-50°	299.5	17.1
50°-60°	277.9	15.9
60°-70°	219.7	12.5
70°-80°	134.2	7.7
80°-90°	58.5	3.3
90°-100°	18.2	1.0
100°-110°	4.1	0.2
110°-120°	1.6	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°	451.7	25.8
0°-40°	736.2	42.0
0°-60°	1313.5	75.0
0°-90°	1725.9	98.6
90°-120°	23.9	1.4
90°-150°	25.1	1.4
90°-180°	25.0	1.4
0°-180°	1750.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	581	581	581	581	581	
5°	580	579	581	587	589	55
15°	549	570	575	556	557	155
25°	495	527	503	518	526	227
35°	422	434	441	481	497	264
45°	345	347	375	435	451	266
55°	254	258	299	365	394	228
65°	161	166	211	279	304	159
75°	61	81	118	181	192	66
85°	5	19	46	89	102	8
90°	0	6	24	56	66	0
95°	0	1	10	31	38	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°	581.2	581.2	581.2	581.2	581.2
2.5°	581.9	580.4	577.2	580.3	581.1
5°	579.8	578.6	580.6	587.2	588.8
7.5°	575.0	579.5	584.8	596.6	600.4
10°	567.7	576.3	592.2	602.3	598.4
12.5°	559.0	573.4	594.9	575.2	566.1
15°	548.8	569.9	575.4	556.4	556.7
17.5°	536.8	566.9	549.7	549.3	545.8
20°	523.9	557.0	534.2	533.3	529.6
22.5°	510.1	543.8	520.5	518.6	528.5
25°	495.0	526.7	502.6	517.7	526.1
27.5°	476.2	504.2	487.7	509.0	519.5
30°	457.2	481.0	472.4	502.1	520.9
32.5°	439.3	456.7	459.9	499.5	502.6
35°	422.3	434.1	440.6	480.6	496.9
37.5°	403.8	406.9	424.2	472.7	488.4
40°	384.8	382.8	410.5	459.6	481.4
42.5°	364.4	363.7	395.9	453.1	464.0
45°	345.1	346.7	375.2	434.7	450.9
47.5°	325.4	327.4	355.6	414.4	434.5
50°	302.4	305.0	338.0	396.4	422.3
52.5°	277.5	282.5	321.0	379.4	405.5
55°	254.2	258.4	299.3	364.8	393.8
57.5°	232.9	235.4	276.9	346.4	368.3
60°	211.9	212.5	255.9	326.1	347.0
62.5°	187.9	189.0	234.2	302.0	330.1
65°	160.9	166.0	210.9	279.1	304.4
67.5°	135.7	144.6	187.1	258.0	271.3
70°	108.7	123.7	163.8	233.3	242.6
72.5°	83.9	101.6	139.8	205.5	218.7
75°	60.9	80.6	117.6	180.7	192.0
77.5°	41.0	61.1	96.7	153.2	168.2
80°	24.5	44.6	78.1	127.8	144.7
82.5°	12.6	30.0	60.6	107.2	122.3
85°	5.4	18.9	45.8	88.9	102.1
87.5°	1.5	10.8	33.7	71.9	83.0
90°	0.1	5.7	24.0	56.4	66.4
92.5°	0.1	2.7	16.9	42.6	50.3
95°	0.1	1.4	10.5	30.9	37.8
97.5°	0.1	0.8	6.4	21.9	27.7
100°	0.1	0.7	3.8	14.6	19.8
102.5°	0.1	0.8	2.6	9.2	12.9
105°	0.1	0.8	2.1	6.0	8.5
107.5°	0.2	0.8	1.9	4.5	5.9
110°	0.1	0.7	2.0	3.4	4.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	1.9	2.8	3.4
115°	0.1	0.5	1.7	2.7	2.8
117.5°	0.2	0.4	1.3	2.7	2.8
120°	0.2	0.2	1.1	2.6	3.0
122.5°	0.2	0.2	0.8	2.4	2.8
125°	0.1	0.2	0.7	1.8	2.5
127.5°	0.2	0.2	0.6	1.4	1.9
130°	0.2	0.2	0.5	1.1	1.4
132.5°	0.2	0.2	0.4	0.8	1.1
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)