

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: P517912

Luminaire Tested: HVL8-2-LD4-1STD-50-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: P517912
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
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1888.0 lumens
Efficiency: N/A
Efficacy: 115.8 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

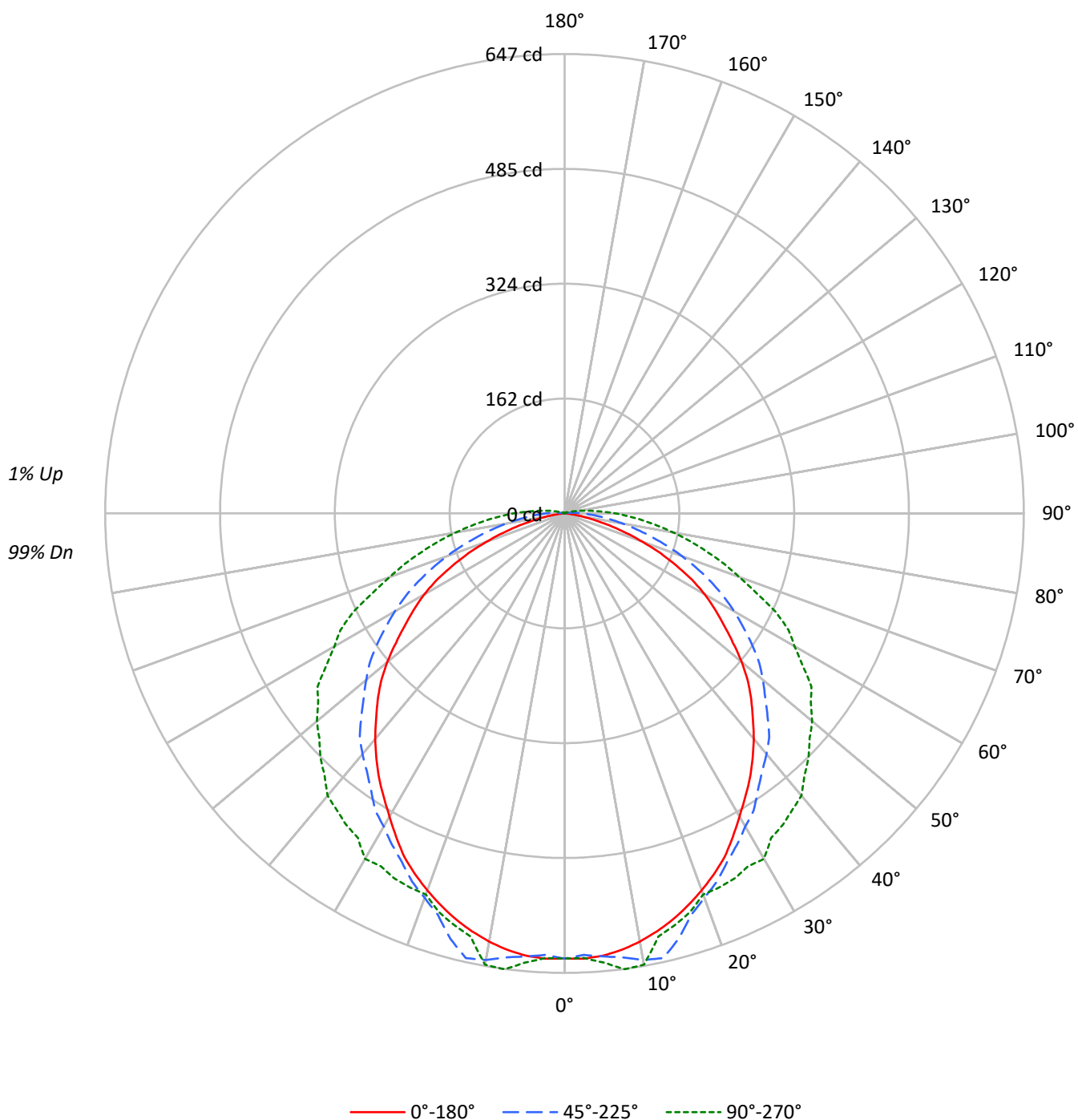
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5059	5059	5059
5°	5030	4971	5035
10°	4946	5026	5066
15°	4837	4878	4702
20°	4710	4557	4497
25°	4577	4349	4525
30°	4384	4180	4575
35°	4241	4018	4494
40°	4087	3894	4522
45°	3921	3738	4441
50°	3726	3574	4406
55°	3448	3398	4404
60°	3224	3163	4216
65°	2812	2885	4081
70°	2251	2530	3660
75°	1561	2104	3341
80°	833	1677	2999
85°	280	1238	2641

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4441 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.2	3.2
10°-20°	171.5	9.1
20°-30°	255.2	13.5
30°-40°	306.8	16.2
40°-50°	322.9	17.1
50°-60°	299.6	15.9
60°-70°	236.9	12.5
70°-80°	144.7	7.7
80°-90°	63.0	3.3
90°-100°	19.6	1.0
100°-110°	4.4	0.2
110°-120°	1.8	0.1
120°-130°	1.0	0.1
130°-140°	0.3	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°	487.0	25.8
0°-40°	793.8	42.0
0°-60°	1416.3	75.0
0°-90°	1860.9	98.6
90°-120°	25.8	1.4
90°-150°	27.1	1.4
90°-180°	27.0	1.4
0°-180°	1888.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	627	627	627	627	627	
5°	625	624	626	633	635	59
15°	592	614	620	600	600	167
25°	534	568	542	558	567	245
35°	455	468	475	518	536	285
45°	372	374	405	469	486	287
55°	274	279	323	393	425	246
65°	174	179	227	301	328	172
75°	66	87	127	195	207	72
85°	6	20	49	96	110	9
90°	0	6	26	61	72	0
95°	0	2	11	33	41	0
105°	0	1	2	6	9	0
115°	0	0	2	3	3	0
125°	0	0	1	2	3	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°	626.7	626.7	626.7	626.7	626.7
2.5°	627.5	625.8	622.4	625.7	626.6
5°	625.2	623.9	626.1	633.1	634.9
7.5°	619.9	624.8	630.5	643.3	647.4
10°	612.2	621.4	638.6	649.4	645.2
12.5°	602.7	618.3	641.4	620.2	610.4
15°	591.7	614.5	620.5	599.9	600.3
17.5°	578.8	611.3	592.8	592.2	588.5
20°	564.9	600.5	576.0	575.0	571.1
22.5°	550.0	586.4	561.2	559.2	569.9
25°	533.8	567.9	541.9	558.2	567.2
27.5°	513.5	543.6	525.9	548.8	560.2
30°	492.9	518.6	509.4	541.4	561.6
32.5°	473.6	492.4	495.9	538.6	541.9
35°	455.4	468.0	475.0	518.2	535.8
37.5°	435.3	438.8	457.4	509.6	526.6
40°	414.9	412.7	442.6	495.6	519.1
42.5°	393.0	392.2	426.9	488.6	500.3
45°	372.1	373.8	404.6	468.7	486.2
47.5°	350.8	353.0	383.4	446.8	468.5
50°	326.1	328.9	364.5	427.4	455.4
52.5°	299.2	304.6	346.1	409.0	437.3
55°	274.1	278.6	322.7	393.3	424.6
57.5°	251.1	253.8	298.6	373.6	397.2
60°	228.5	229.2	275.9	351.6	374.2
62.5°	202.6	203.8	252.5	325.7	355.9
65°	173.5	179.0	227.4	300.9	328.2
67.5°	146.3	155.9	201.7	278.2	292.5
70°	117.2	133.4	176.6	251.5	261.6
72.5°	90.5	109.5	150.8	221.6	235.8
75°	65.6	86.9	126.8	194.8	207.1
77.5°	44.2	65.9	104.3	165.2	181.4
80°	26.4	48.1	84.3	137.8	156.0
82.5°	13.5	32.3	65.4	115.5	131.9
85°	5.9	20.4	49.4	95.9	110.0
87.5°	1.7	11.6	36.4	77.5	89.5
90°	0.1	6.1	25.9	60.8	71.6
92.5°	0.1	2.9	18.3	46.0	54.3
95°	0.1	1.5	11.4	33.3	40.7
97.5°	0.1	0.9	6.9	23.6	29.9
100°	0.1	0.8	4.1	15.7	21.3
102.5°	0.1	0.9	2.8	10.0	13.9
105°	0.1	0.9	2.3	6.5	9.2
107.5°	0.3	0.9	2.0	4.9	6.4
110°	0.1	0.8	2.2	3.7	5.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.6	2.0	3.1	3.7
115°	0.1	0.5	1.8	2.9	3.1
117.5°	0.3	0.4	1.4	2.9	3.1
120°	0.3	0.3	1.1	2.8	3.2
122.5°	0.3	0.3	0.9	2.6	3.1
125°	0.1	0.3	0.8	1.9	2.7
127.5°	0.3	0.3	0.6	1.5	2.0
130°	0.3	0.3	0.5	1.1	1.5
132.5°	0.3	0.3	0.4	0.9	1.1
135°	0.3	0.3	0.3	0.6	0.9
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)