

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: P517763

Luminaire Tested: HVL8-1-LD4-1STD-40-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: P517763
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1STD-40-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 780.0 lumens
Efficiency: N/A
Efficacy: 95.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

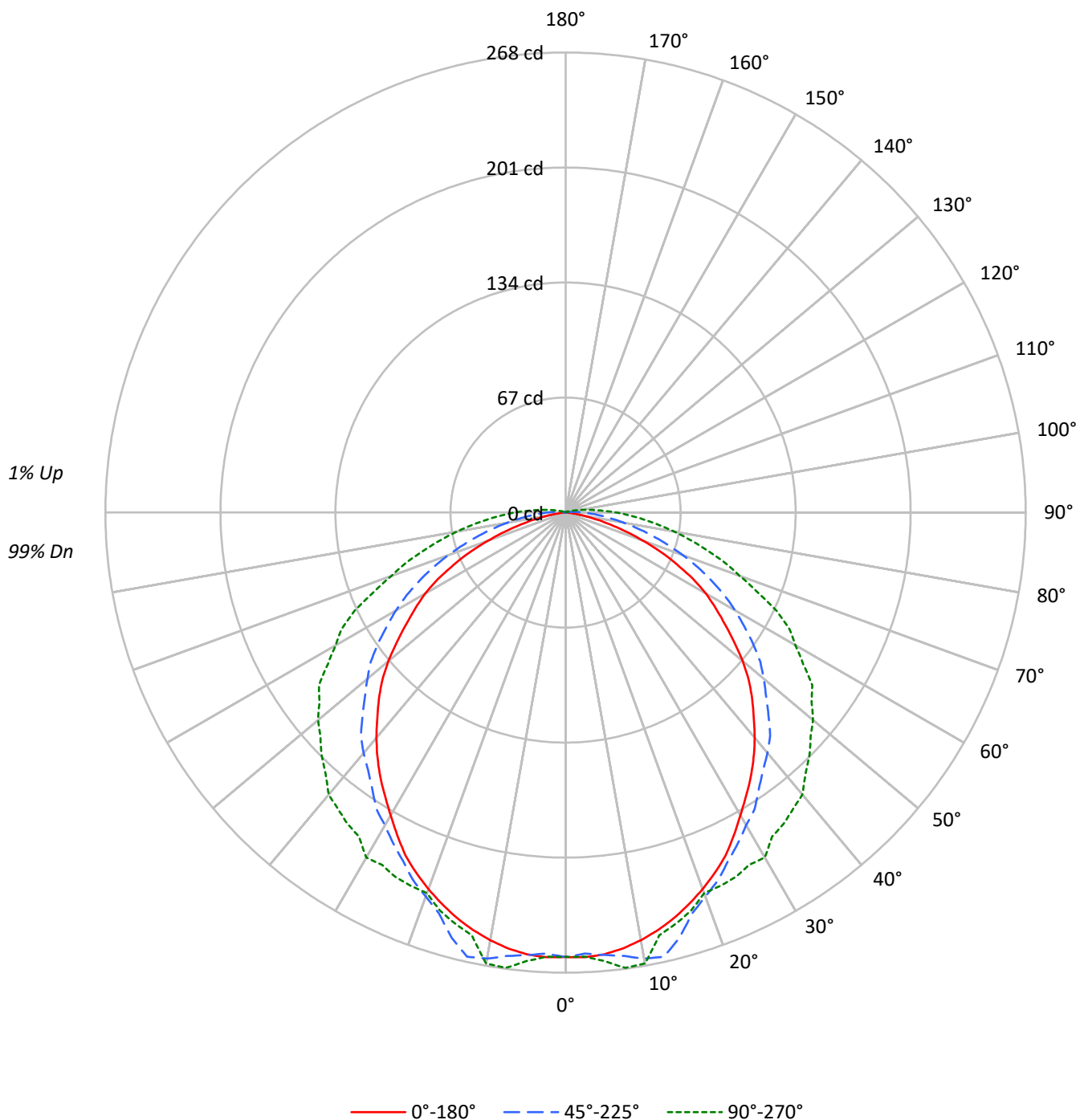
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4180	4180	4180
5°	4126	4088	4160
10°	4028	4111	4186
15°	3912	3971	3885
20°	3781	3693	3715
25°	3645	3507	3738
30°	3463	3352	3780
35°	3320	3207	3714
40°	3169	3091	3737
45°	3008	2947	3668
50°	2823	2800	3640
55°	2574	2641	3638
60°	2365	2437	3484
65°	2018	2198	3372
70°	1567	1902	3025
75°	1042	1557	2759
80°	521	1211	2480
85°	153	865	2185

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3668 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.9	3.2
10°-20°	70.9	9.1
20°-30°	105.4	13.5
30°-40°	126.7	16.2
40°-50°	133.4	17.1
50°-60°	123.8	15.9
60°-70°	97.9	12.5
70°-80°	59.8	7.7
80°-90°	26.0	3.3
90°-100°	8.1	1.0
100°-110°	1.8	0.2
110°-120°	0.7	0.1
120°-130°	0.4	0.1
130°-140°	0.1	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°	201.2	25.8
0°-40°	327.9	42.0
0°-60°	585.1	75.0
0°-90°	768.8	98.6
90°-120°	10.7	1.4
90°-150°	11.2	1.4
90°-180°	11.0	1.4
0°-180°	780.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	259	259	259	259	259	
5°	258	258	259	262	262	24
15°	244	254	256	248	248	69
25°	220	235	224	231	234	101
35°	188	193	196	214	221	118
45°	154	154	167	194	201	118
55°	113	115	133	162	175	102
65°	72	74	94	124	136	71
75°	27	36	52	80	86	30
85°	2	8	20	40	46	4
90°	0	2	11	25	30	0
95°	0	1	5	14	17	0
105°	0	0	1	3	4	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	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°	258.9	258.9	258.9	258.9	258.9
2.5°	259.2	258.5	257.1	258.5	258.9
5°	258.3	257.8	258.7	261.6	262.3
7.5°	256.1	258.1	260.5	265.8	267.5
10°	252.9	256.7	263.8	268.3	266.6
12.5°	249.0	255.4	265.0	256.2	252.2
15°	244.5	253.9	256.3	247.8	248.0
17.5°	239.1	252.5	244.9	244.7	243.1
20°	233.4	248.1	238.0	237.6	235.9
22.5°	227.2	242.3	231.9	231.0	235.4
25°	220.5	234.6	223.9	230.6	234.3
27.5°	212.1	224.6	217.3	226.7	231.4
30°	203.6	214.2	210.4	223.7	232.0
32.5°	195.7	203.4	204.9	222.5	223.9
35°	188.1	193.4	196.3	214.1	221.4
37.5°	179.9	181.3	189.0	210.6	217.6
40°	171.4	170.5	182.9	204.8	214.5
42.5°	162.3	162.0	176.4	201.8	206.7
45°	153.7	154.4	167.1	193.6	200.8
47.5°	144.9	145.8	158.4	184.6	193.6
50°	134.7	135.9	150.6	176.6	188.1
52.5°	123.6	125.8	143.0	169.0	180.6
55°	113.2	115.1	133.3	162.5	175.4
57.5°	103.7	104.9	123.4	154.3	164.1
60°	94.4	94.7	114.0	145.3	154.6
62.5°	83.7	84.2	104.3	134.5	147.0
65°	71.7	73.9	93.9	124.3	135.6
67.5°	60.4	64.4	83.3	114.9	120.8
70°	48.4	55.1	72.9	103.9	108.1
72.5°	37.4	45.3	62.3	91.6	97.4
75°	27.1	35.9	52.4	80.5	85.5
77.5°	18.2	27.2	43.1	68.3	74.9
80°	10.9	19.9	34.8	56.9	64.5
82.5°	5.6	13.3	27.0	47.7	54.5
85°	2.4	8.4	20.4	39.6	45.5
87.5°	0.7	4.8	15.0	32.0	37.0
90°	0.1	2.5	10.7	25.1	29.6
92.5°	0.1	1.2	7.5	19.0	22.4
95°	0.1	0.6	4.7	13.8	16.8
97.5°	0.1	0.4	2.8	9.8	12.3
100°	0.1	0.3	1.7	6.5	8.8
102.5°	0.1	0.4	1.2	4.1	5.7
105°	0.1	0.4	0.9	2.7	3.8
107.5°	0.1	0.4	0.8	2.0	2.6
110°	0.1	0.3	0.9	1.5	2.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	0.8	1.3	1.5
115°	0.1	0.2	0.7	1.2	1.3
117.5°	0.1	0.2	0.6	1.2	1.3
120°	0.1	0.1	0.5	1.2	1.3
122.5°	0.1	0.1	0.4	1.1	1.3
125°	0.1	0.1	0.3	0.8	1.1
127.5°	0.1	0.1	0.3	0.6	0.8
130°	0.1	0.1	0.2	0.5	0.6
132.5°	0.1	0.1	0.2	0.4	0.5
135°	0.1	0.1	0.1	0.3	0.4
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)