

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: P517757

Luminaire Tested: HVL8-1-LD4-1STD-30-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: P517757
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1STD-30-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 793.0 lumens
Efficiency: N/A
Efficacy: 96.7 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

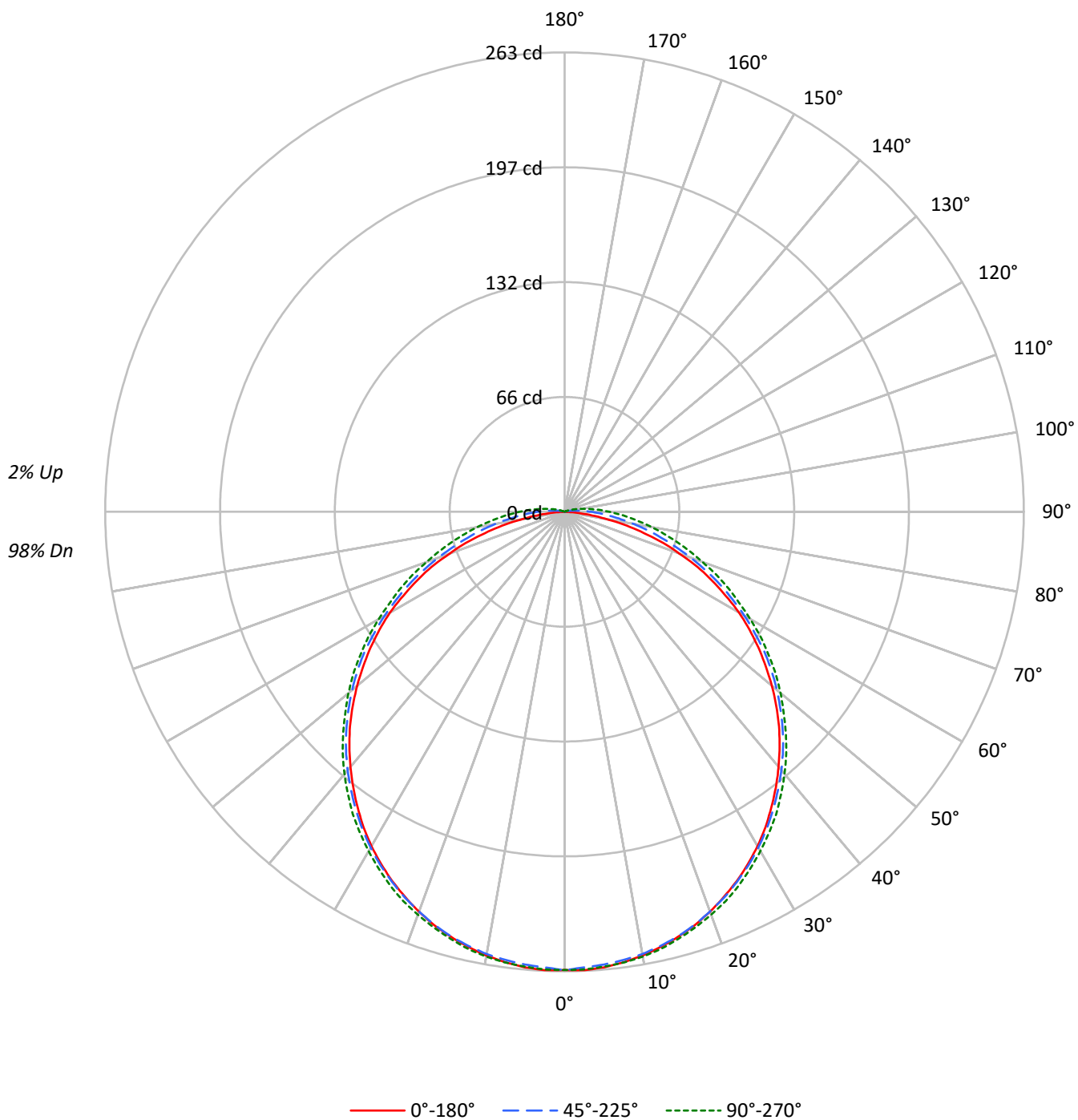
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	102	98	94	105	100	96	92	95	92	89		91	88	86		87
2	98	89	82	76	95	87	80	75	83	77	73		79	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	52		62	56	51		60
5	75	61	52	45	72	60	52	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°	4235	4235	4235
5°	4181	4110	4144
10°	4108	4005	4061
15°	4029	3896	3962
20°	3946	3779	3865
25°	3856	3660	3767
30°	3759	3537	3654
35°	3645	3403	3544
40°	3526	3265	3415
45°	3400	3116	3275
50°	3248	2950	3125
55°	3083	2768	2960
60°	2892	2544	2767
65°	2623	2297	2576
70°	2270	2011	2353
75°	1815	1705	2152
80°	1219	1403	1965
85°	523	1098	1791

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3400 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.8	3.1
10°-20°	71.2	9.0
20°-30°	108.0	13.6
30°-40°	130.6	16.5
40°-50°	136.3	17.2
50°-60°	124.6	15.7
60°-70°	97.2	12.3
70°-80°	60.8	7.7
80°-90°	27.6	3.5
90°-100°	9.3	1.2
100°-110°	2.3	0.3
110°-120°	0.4	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°	204.0	25.7
0°-40°	334.7	42.2
0°-60°	595.6	75.1
0°-90°	781.1	98.5
90°-120°	11.9	1.5
90°-150°	11.9	1.5
90°-180°	12.0	1.5
0°-180°	793.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	262	262	262	262	262	
5°	262	261	260	261	261	25
15°	252	252	252	253	253	71
25°	233	234	234	236	236	107
35°	206	207	208	210	211	129
45°	174	175	177	178	179	134
55°	136	137	140	142	143	121
65°	93	95	98	102	104	92
75°	47	50	57	64	67	50
85°	8	15	26	34	37	10
90°	0	6	15	23	26	0
95°	0	2	8	14	17	0
105°	0	0	1	4	5	0
115°	0	0	0	1	1	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°	262.3	262.3	262.3	262.3	262.3
2.5°	262.6	262.2	261.0	262.2	262.2
5°	261.7	261.2	260.1	261.3	261.3
7.5°	260.0	259.8	258.8	260.2	260.2
10°	257.9	257.9	257.0	258.6	258.6
12.5°	255.1	255.4	254.5	256.0	256.2
15°	251.8	252.2	251.5	252.9	252.9
17.5°	248.1	248.4	247.9	249.5	249.4
20°	243.6	243.9	243.5	245.2	245.4
22.5°	238.6	239.0	239.0	240.7	241.2
25°	233.3	233.5	233.7	235.7	236.1
27.5°	227.4	227.7	228.1	229.9	230.3
30°	221.0	221.5	222.0	223.8	224.3
32.5°	214.2	214.7	215.3	217.7	217.9
35°	206.5	207.4	208.3	210.4	211.3
37.5°	198.8	200.0	200.8	203.0	203.7
40°	190.7	191.9	193.2	195.6	196.0
42.5°	182.3	183.6	185.2	187.3	188.0
45°	173.7	175.3	176.7	178.4	179.3
47.5°	164.5	166.1	167.8	169.8	170.3
50°	155.0	156.8	158.7	160.5	161.5
52.5°	145.2	147.4	149.5	151.5	152.4
55°	135.6	137.2	139.7	141.8	142.7
57.5°	125.6	126.9	129.2	132.6	133.1
60°	115.4	116.6	119.0	121.7	122.8
62.5°	104.1	105.8	108.3	111.7	112.7
65°	93.2	94.8	98.1	102.0	103.6
67.5°	82.6	83.2	87.4	91.4	94.0
70°	70.1	72.2	77.1	82.1	84.1
72.5°	59.4	61.5	66.8	72.7	75.2
75°	47.2	50.1	57.4	64.2	66.7
77.5°	36.5	39.7	48.7	55.6	58.4
80°	25.5	30.5	40.3	48.1	51.1
82.5°	16.0	22.2	32.7	40.9	43.5
85°	8.2	15.1	25.9	34.3	37.3
87.5°	2.2	9.8	20.2	28.1	31.2
90°	0.1	5.6	15.3	22.9	25.7
92.5°	0.1	3.2	11.4	18.2	21.1
95°	0.1	1.5	7.9	14.3	16.6
97.5°	0.1	0.6	5.4	10.8	13.0
100°	0.1	0.3	3.5	7.9	9.8
102.5°	0.1	0.2	2.2	5.6	7.2
105°	0.1	0.2	1.3	3.8	5.1
107.5°	0.1	0.2	0.7	2.6	3.5
110°	0.2	0.2	0.4	1.6	2.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.2	0.2	1.1	1.5
115°	0.2	0.2	0.2	0.7	1.0
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)