

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: P517767

Luminaire Tested: HVL8-1-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: P517767
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1STD-50-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 821.0 lumens
Efficiency: N/A
Efficacy: 100.1 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

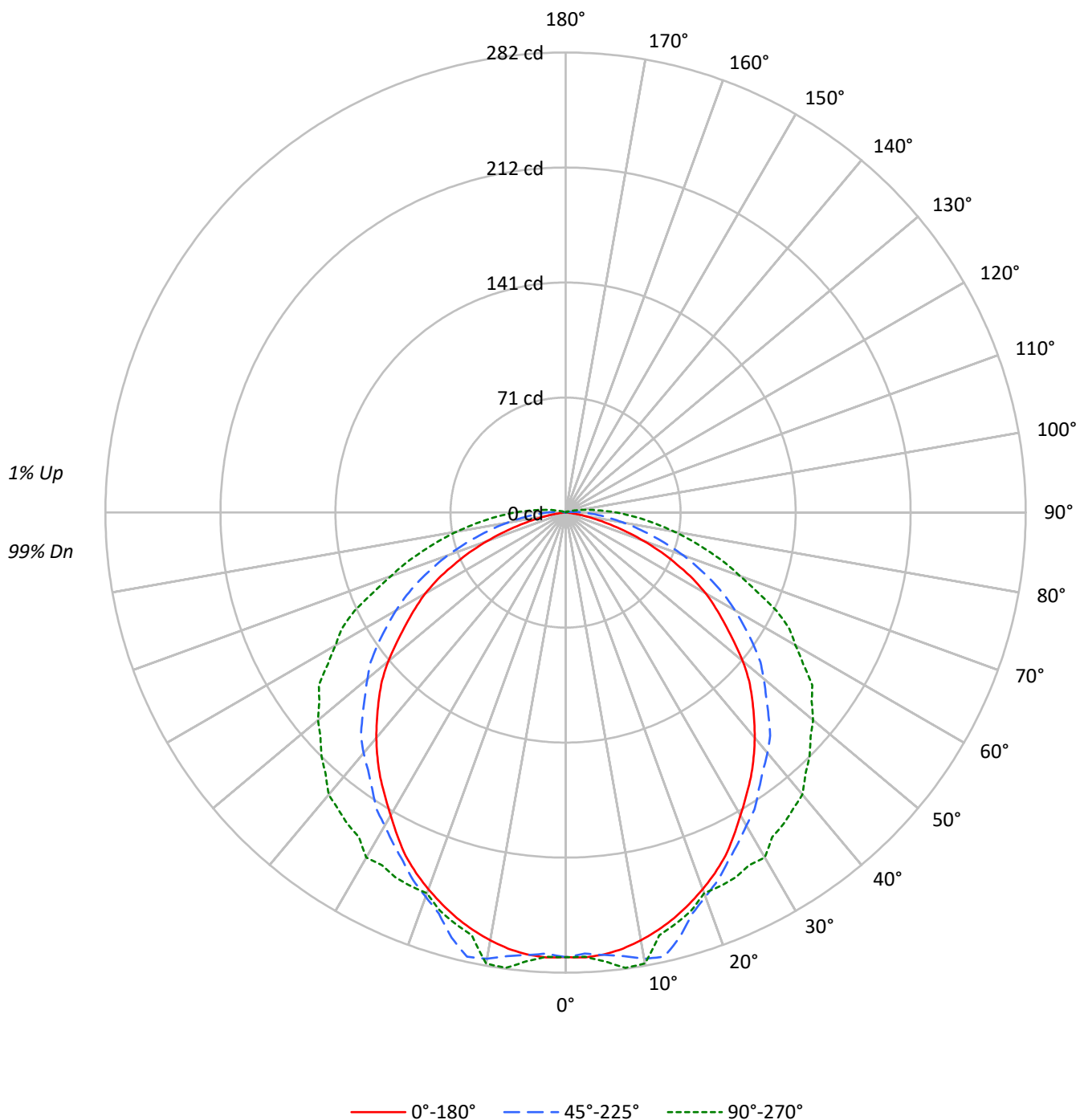
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	39	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°	4400	4400	4400
5°	4343	4301	4379
10°	4240	4328	4406
15°	4117	4180	4089
20°	3980	3887	3910
25°	3837	3692	3936
30°	3645	3529	3978
35°	3495	3376	3908
40°	3336	3253	3932
45°	3167	3102	3861
50°	2971	2946	3832
55°	2710	2780	3829
60°	2491	2566	3666
65°	2122	2315	3549
70°	1651	2003	3184
75°	1096	1637	2904
80°	550	1274	2607
85°	166	912	2300

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°	26.2	3.2
10°-20°	74.6	9.1
20°-30°	111.0	13.5
30°-40°	133.4	16.2
40°-50°	140.4	17.1
50°-60°	130.3	15.9
60°-70°	103.0	12.5
70°-80°	62.9	7.7
80°-90°	27.4	3.3
90°-100°	8.5	1.0
100°-110°	1.9	0.2
110°-120°	0.8	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°	211.8	25.8
0°-40°	345.2	42.0
0°-60°	615.9	75.0
0°-90°	809.2	98.6
90°-120°	11.2	1.4
90°-150°	11.8	1.4
90°-180°	12.0	1.5
0°-180°	821.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	272	272	272	272	272	
5°	272	271	272	275	276	26
15°	257	267	270	261	261	72
25°	232	247	236	243	247	107
35°	198	204	207	225	233	124
45°	162	163	176	204	211	125
55°	119	121	140	171	185	107
65°	75	78	99	131	143	75
75°	28	38	55	85	90	31
85°	3	9	22	42	48	4
90°	0	3	11	26	31	0
95°	0	1	5	14	18	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°	272.5	272.5	272.5	272.5	272.5
2.5°	272.9	272.1	270.6	272.1	272.5
5°	271.9	271.3	272.2	275.3	276.1
7.5°	269.6	271.7	274.2	279.7	281.5
10°	266.2	270.2	277.7	282.4	280.6
12.5°	262.1	268.9	278.9	269.7	265.4
15°	257.3	267.2	269.8	260.9	261.0
17.5°	251.7	265.8	257.8	257.5	255.9
20°	245.7	261.1	250.5	250.0	248.3
22.5°	239.2	255.0	244.0	243.2	247.8
25°	232.1	246.9	235.7	242.7	246.7
27.5°	223.3	236.4	228.7	238.7	243.6
30°	214.3	225.5	221.5	235.4	244.2
32.5°	206.0	214.1	215.6	234.2	235.7
35°	198.0	203.5	206.6	225.3	233.0
37.5°	189.3	190.8	198.9	221.6	229.0
40°	180.4	179.5	192.5	215.5	225.7
42.5°	170.9	170.5	185.6	212.5	217.6
45°	161.8	162.6	175.9	203.8	211.4
47.5°	152.6	153.5	166.7	194.3	203.7
50°	141.8	143.0	158.5	185.9	198.0
52.5°	130.1	132.5	150.5	177.9	190.1
55°	119.2	121.1	140.3	171.0	184.6
57.5°	109.2	110.4	129.9	162.4	172.7
60°	99.4	99.7	120.0	152.9	162.7
62.5°	88.1	88.6	109.8	141.6	154.8
65°	75.4	77.8	98.9	130.9	142.7
67.5°	63.6	67.8	87.7	121.0	127.2
70°	51.0	58.0	76.8	109.4	113.8
72.5°	39.4	47.6	65.6	96.4	102.5
75°	28.5	37.8	55.1	84.7	90.0
77.5°	19.2	28.6	45.4	71.8	78.9
80°	11.5	20.9	36.6	59.9	67.8
82.5°	5.9	14.0	28.4	50.2	57.3
85°	2.6	8.9	21.5	41.7	47.9
87.5°	0.7	5.1	15.8	33.7	38.9
90°	0.1	2.7	11.3	26.4	31.1
92.5°	0.1	1.3	7.9	20.0	23.6
95°	0.1	0.7	4.9	14.5	17.7
97.5°	0.1	0.4	3.0	10.3	13.0
100°	0.1	0.3	1.8	6.8	9.3
102.5°	0.1	0.4	1.2	4.3	6.1
105°	0.1	0.4	1.0	2.8	4.0
107.5°	0.1	0.4	0.9	2.1	2.8
110°	0.1	0.3	0.9	1.6	2.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	0.9	1.3	1.6
115°	0.1	0.2	0.8	1.3	1.3
117.5°	0.1	0.2	0.6	1.3	1.3
120°	0.1	0.1	0.5	1.2	1.4
122.5°	0.1	0.1	0.4	1.1	1.3
125°	0.1	0.1	0.3	0.8	1.2
127.5°	0.1	0.1	0.3	0.7	0.9
130°	0.1	0.1	0.2	0.5	0.7
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)