

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: P517796

Luminaire Tested: HVL8-1-LD4-2LO-40-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: P517796
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2LO-40-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1368.0 lumens
Efficiency: N/A
Efficacy: 119.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

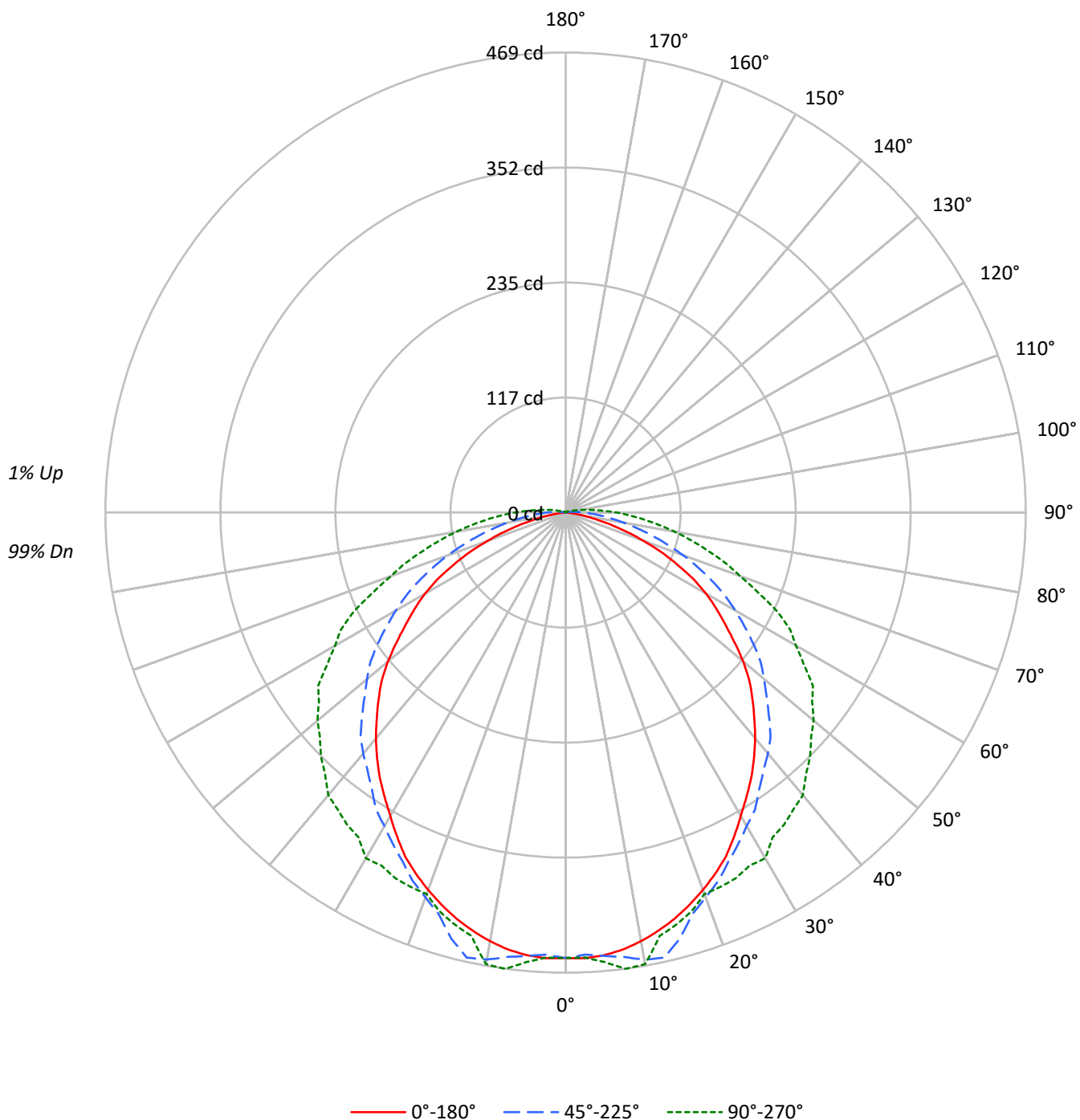
Input Watts (W): 11.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7332	7332	7332
5°	7236	7167	7296
10°	7065	7211	7341
15°	6861	6965	6815
20°	6630	6477	6517
25°	6394	6151	6557
30°	6075	5881	6629
35°	5825	5624	6512
40°	5558	5419	6552
45°	5276	5169	6435
50°	4952	4910	6386
55°	4515	4632	6382
60°	4149	4274	6109
65°	3538	3856	5914
70°	2749	3336	5303
75°	1827	2730	4840
80°	913	2127	4345
85°	274	1518	3827

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6435 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.6	3.2
10°-20°	124.3	9.1
20°-30°	184.9	13.5
30°-40°	222.3	16.2
40°-50°	234.0	17.1
50°-60°	217.1	15.9
60°-70°	171.6	12.5
70°-80°	104.9	7.7
80°-90°	45.7	3.3
90°-100°	14.2	1.0
100°-110°	3.2	0.2
110°-120°	1.3	0.1
120°-130°	0.7	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°	352.9	25.8
0°-40°	575.1	42.0
0°-60°	1026.2	75.0
0°-90°	1348.4	98.6
90°-120°	18.7	1.4
90°-150°	19.6	1.4
90°-180°	20.0	1.5
0°-180°	1368.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	454	454	454	454	454	
5°	453	452	454	459	460	43
15°	429	445	450	435	435	121
25°	387	412	393	404	411	178
35°	330	339	344	376	388	206
45°	270	271	293	340	352	208
55°	199	202	234	285	308	178
65°	126	130	165	218	238	124
75°	48	63	92	141	150	52
85°	4	15	36	70	80	7
90°	0	4	19	44	52	0
95°	0	1	8	24	30	0
105°	0	1	2	5	7	0
115°	0	0	1	2	2	0
125°	0	0	1	1	2	0
135°	0	0	0	0	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°	454.1	454.1	454.1	454.1	454.1
2.5°	454.7	453.5	451.0	453.4	454.0
5°	453.0	452.1	453.6	458.7	460.0
7.5°	449.2	452.7	456.9	466.1	469.1
10°	443.6	450.2	462.7	470.6	467.5
12.5°	436.7	448.0	464.7	449.4	442.3
15°	428.8	445.2	449.6	434.7	435.0
17.5°	419.4	442.9	429.5	429.1	426.4
20°	409.3	435.1	417.4	416.6	413.8
22.5°	398.5	424.9	406.6	405.2	412.9
25°	386.8	411.5	392.7	404.4	411.0
27.5°	372.1	393.9	381.0	397.7	405.9
30°	357.2	375.8	369.1	392.3	406.9
32.5°	343.2	356.8	359.3	390.3	392.7
35°	330.0	339.1	344.2	375.5	388.2
37.5°	315.4	317.9	331.4	369.3	381.6
40°	300.6	299.1	320.7	359.1	376.1
42.5°	284.7	284.2	309.3	354.0	362.5
45°	269.6	270.9	293.1	339.6	352.3
47.5°	254.2	255.8	277.8	323.8	339.5
50°	236.3	238.3	264.1	309.7	330.0
52.5°	216.8	220.7	250.8	296.4	316.8
55°	198.6	201.8	233.8	285.0	307.7
57.5°	182.0	183.9	216.4	270.7	287.8
60°	165.6	166.0	199.9	254.8	271.1
62.5°	146.8	147.6	183.0	236.0	257.9
65°	125.7	129.7	164.7	218.0	237.8
67.5°	106.0	112.9	146.2	201.6	211.9
70°	84.9	96.7	127.9	182.2	189.5
72.5°	65.6	79.4	109.2	160.6	170.9
75°	47.5	63.0	91.9	141.2	150.0
77.5°	32.0	47.7	75.6	119.7	131.4
80°	19.1	34.9	61.1	99.8	113.0
82.5°	9.8	23.4	47.4	83.7	95.6
85°	4.3	14.8	35.8	69.5	79.7
87.5°	1.2	8.4	26.4	56.1	64.8
90°	0.1	4.4	18.8	44.0	51.9
92.5°	0.1	2.1	13.2	33.3	39.3
95°	0.1	1.1	8.2	24.1	29.5
97.5°	0.1	0.6	5.0	17.1	21.6
100°	0.1	0.6	3.0	11.4	15.4
102.5°	0.1	0.6	2.0	7.2	10.1
105°	0.1	0.6	1.7	4.7	6.7
107.5°	0.2	0.6	1.5	3.5	4.6
110°	0.1	0.6	1.6	2.7	3.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.5	2.2	2.7
115°	0.1	0.4	1.3	2.1	2.2
117.5°	0.2	0.3	1.0	2.1	2.2
120°	0.2	0.2	0.8	2.0	2.3
122.5°	0.2	0.2	0.6	1.9	2.2
125°	0.1	0.2	0.6	1.4	1.9
127.5°	0.2	0.2	0.5	1.1	1.5
130°	0.2	0.2	0.4	0.8	1.1
132.5°	0.2	0.2	0.3	0.6	0.8
135°	0.2	0.2	0.2	0.5	0.6
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)