

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: P517765

Luminaire Tested: HVL8-1-LD4-1STD-40-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: P517765
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-O-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: 840.0 lumens
Efficiency: N/A
Efficacy: 102.4 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

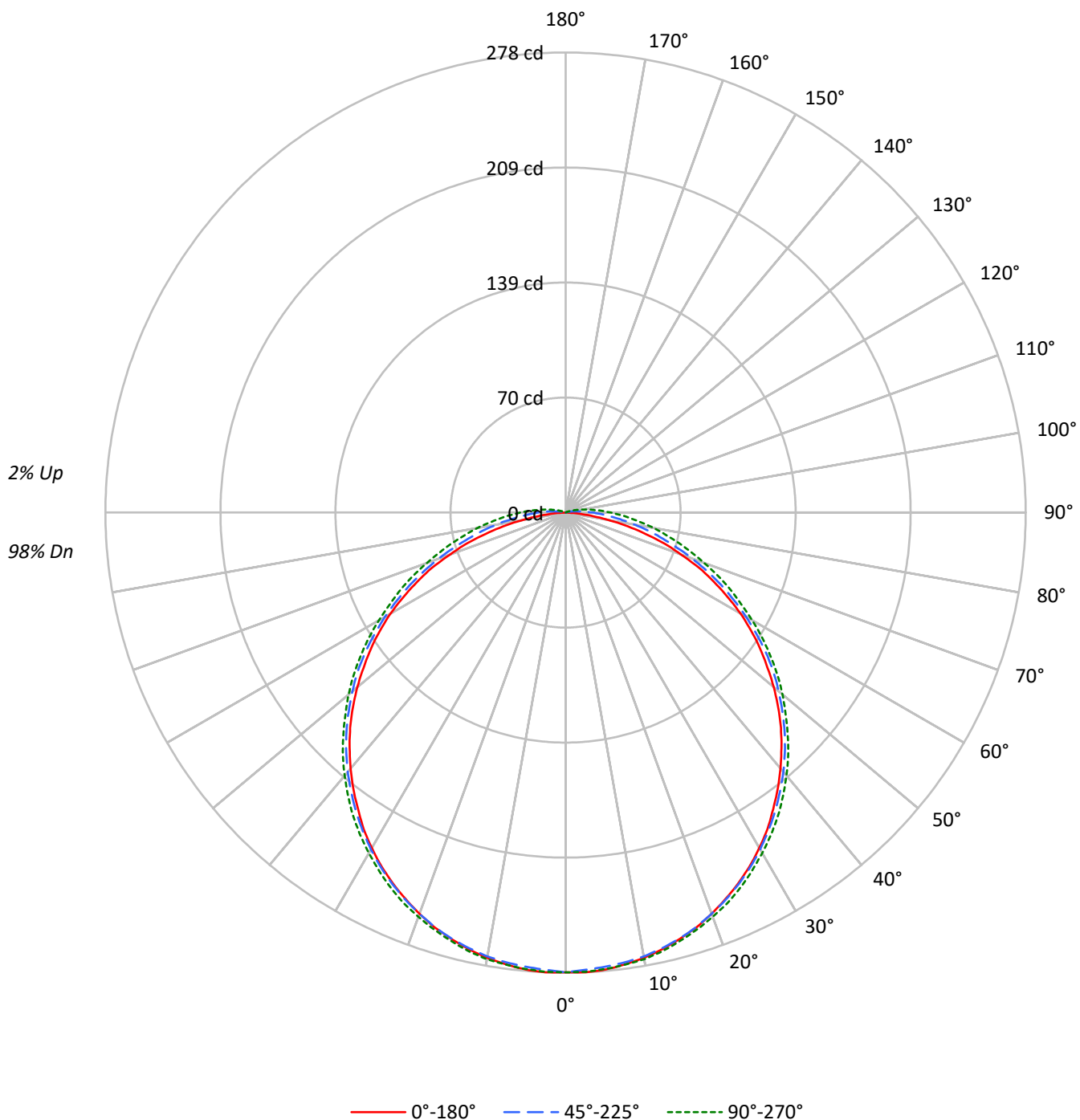
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4485	4485	4485
5°	4428	4353	4390
10°	4351	4244	4303
15°	4267	4127	4197
20°	4179	4004	4093
25°	4085	3878	3990
30°	3981	3746	3871
35°	3860	3604	3754
40°	3735	3459	3617
45°	3601	3302	3469
50°	3441	3125	3311
55°	3265	2932	3136
60°	3062	2694	2932
65°	2778	2432	2728
70°	2406	2131	2493
75°	1923	1806	2278
80°	1290	1486	2084
85°	548	1162	1897

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3601 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.3	3.1
10°-20°	75.4	9.0
20°-30°	114.4	13.6
30°-40°	138.4	16.5
40°-50°	144.4	17.2
50°-60°	132.0	15.7
60°-70°	102.9	12.2
70°-80°	64.4	7.7
80°-90°	29.2	3.5
90°-100°	9.8	1.2
100°-110°	2.5	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°	216.1	25.7
0°-40°	354.5	42.2
0°-60°	630.9	75.1
0°-90°	827.4	98.5
90°-120°	12.7	1.5
90°-150°	12.7	1.5
90°-180°	13.0	1.5
0°-180°	840.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	278	278	278	278	278	
5°	277	277	276	277	277	26
15°	267	267	266	268	268	75
25°	247	247	248	250	250	114
35°	219	220	221	223	224	137
45°	184	186	187	189	190	142
55°	144	145	148	150	151	128
65°	99	100	104	108	110	98
75°	50	53	61	68	71	53
85°	9	16	27	36	40	11
90°	0	6	16	24	27	0
95°	0	2	8	15	18	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°	277.8	277.8	277.8	277.8	277.8
2.5°	278.1	277.8	276.5	277.8	277.7
5°	277.2	276.7	275.5	276.8	276.8
7.5°	275.4	275.2	274.1	275.6	275.6
10°	273.2	273.2	272.3	273.9	274.0
12.5°	270.2	270.5	269.6	271.2	271.4
15°	266.7	267.1	266.4	267.9	267.9
17.5°	262.8	263.1	262.6	264.3	264.2
20°	258.0	258.4	258.0	259.7	259.9
22.5°	252.7	253.2	253.1	255.0	255.5
25°	247.1	247.3	247.6	249.7	250.1
27.5°	240.9	241.2	241.7	243.6	244.0
30°	234.1	234.6	235.1	237.1	237.6
32.5°	226.9	227.4	228.0	230.6	230.9
35°	218.7	219.7	220.6	222.9	223.8
37.5°	210.6	211.9	212.7	215.1	215.8
40°	202.0	203.3	204.7	207.2	207.6
42.5°	193.1	194.5	196.2	198.4	199.2
45°	184.0	185.7	187.2	189.0	189.9
47.5°	174.3	175.9	177.7	179.8	180.4
50°	164.2	166.1	168.1	170.0	171.1
52.5°	153.8	156.1	158.4	160.5	161.4
55°	143.6	145.3	148.0	150.2	151.2
57.5°	133.0	134.5	136.9	140.4	140.9
60°	122.2	123.5	126.0	128.9	130.1
62.5°	110.3	112.1	114.7	118.3	119.4
65°	98.7	100.4	103.9	108.0	109.7
67.5°	87.5	88.1	92.5	96.9	99.6
70°	74.3	76.5	81.7	87.0	89.1
72.5°	62.9	65.1	70.8	77.0	79.6
75°	50.0	53.0	60.8	68.0	70.6
77.5°	38.6	42.0	51.6	58.9	61.9
80°	27.0	32.3	42.7	51.0	54.2
82.5°	17.0	23.5	34.6	43.3	46.1
85°	8.6	16.0	27.4	36.3	39.5
87.5°	2.3	10.3	21.4	29.8	33.1
90°	0.1	6.0	16.2	24.3	27.2
92.5°	0.1	3.3	12.1	19.3	22.3
95°	0.1	1.6	8.4	15.2	17.6
97.5°	0.1	0.7	5.8	11.5	13.8
100°	0.1	0.3	3.7	8.3	10.3
102.5°	0.1	0.2	2.3	6.0	7.6
105°	0.1	0.2	1.4	4.1	5.4
107.5°	0.1	0.2	0.8	2.8	3.7
110°	0.2	0.2	0.5	1.7	2.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.2	0.3	1.1	1.6
115°	0.2	0.2	0.3	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)