

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: P517729

Luminaire Tested: HVL8-1-LD4-1HI-35-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: P517729
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1HI-35-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1071.0 lumens
Efficiency: N/A
Efficacy: 100.1 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

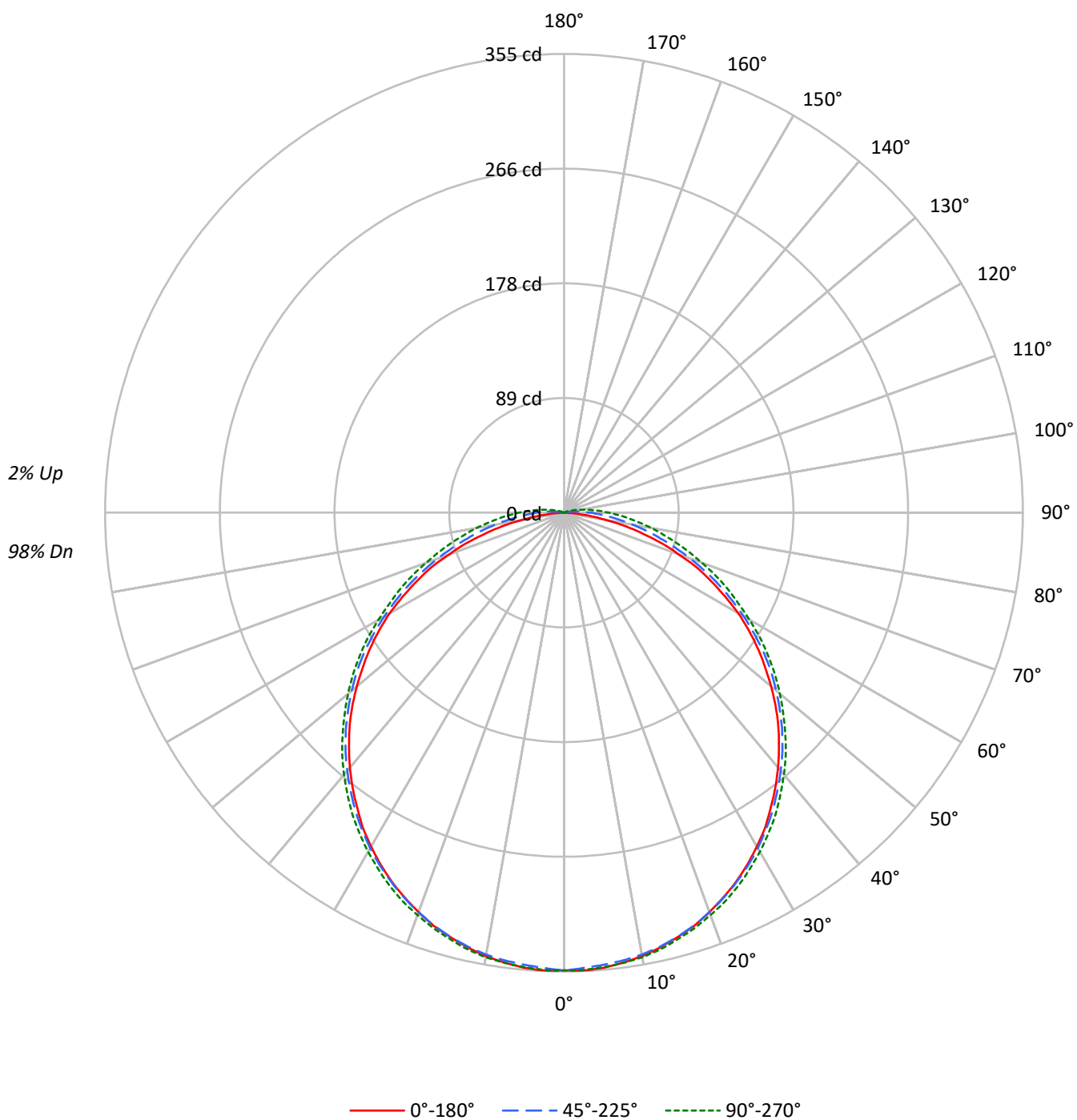
Input Watts (W): 10.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	5719	5719	5719
5°	5647	5549	5597
10°	5549	5410	5485
15°	5440	5263	5350
20°	5330	5104	5219
25°	5209	4943	5086
30°	5075	4777	4936
35°	4923	4596	4786
40°	4763	4409	4611
45°	4591	4210	4424
50°	4386	3984	4221
55°	4163	3738	3997
60°	3904	3436	3736
65°	3540	3100	3479
70°	3066	2716	3179
75°	2450	2302	2904
80°	1644	1894	2657
85°	701	1484	2420

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4591 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.5	3.1
10°-20°	96.2	9.0
20°-30°	145.9	13.6
30°-40°	176.4	16.5
40°-50°	184.1	17.2
50°-60°	168.3	15.7
60°-70°	131.2	12.2
70°-80°	82.1	7.7
80°-90°	37.3	3.5
90°-100°	12.5	1.2
100°-110°	3.2	0.3
110°-120°	0.5	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°	275.6	25.7
0°-40°	452.0	42.2
0°-60°	804.3	75.1
0°-90°	1054.9	98.5
90°-120°	16.2	1.5
90°-150°	16.2	1.5
90°-180°	16.0	1.5
0°-180°	1071.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	354	354	354	354	354	
5°	354	353	351	353	353	34
15°	340	341	340	342	342	96
25°	315	315	316	318	319	145
35°	279	280	281	284	285	175
45°	235	237	239	241	242	181
55°	183	185	189	192	193	164
65°	126	128	132	138	140	125
75°	64	68	78	87	90	68
85°	11	20	35	46	50	14
90°	0	8	21	31	35	0
95°	0	2	11	19	22	0
105°	0	0	2	5	7	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°	354.2	354.2	354.2	354.2	354.2
2.5°	354.6	354.1	352.6	354.1	354.1
5°	353.5	352.8	351.2	352.9	352.9
7.5°	351.1	350.9	349.5	351.4	351.4
10°	348.4	348.3	347.1	349.2	349.3
12.5°	344.5	344.9	343.8	345.8	346.0
15°	340.0	340.6	339.7	341.6	341.5
17.5°	335.1	335.4	334.8	336.9	336.9
20°	329.0	329.4	328.9	331.2	331.4
22.5°	322.2	322.8	322.7	325.1	325.7
25°	315.1	315.3	315.6	318.3	318.8
27.5°	307.1	307.5	308.1	310.5	311.1
30°	298.4	299.1	299.8	302.3	303.0
32.5°	289.3	289.9	290.8	294.0	294.4
35°	278.9	280.2	281.3	284.2	285.3
37.5°	268.5	270.1	271.2	274.2	275.1
40°	257.6	259.2	260.9	264.1	264.7
42.5°	246.2	248.0	250.1	252.9	253.9
45°	234.6	236.7	238.7	241.0	242.2
47.5°	222.2	224.3	226.6	229.3	230.1
50°	209.3	211.8	214.3	216.8	218.1
52.5°	196.1	199.1	201.9	204.6	205.8
55°	183.1	185.3	188.7	191.5	192.7
57.5°	169.6	171.4	174.5	179.0	179.7
60°	155.8	157.5	160.7	164.3	165.8
62.5°	140.6	142.9	146.2	150.9	152.2
65°	125.8	128.0	132.4	137.7	139.9
67.5°	111.6	112.3	118.0	123.5	127.0
70°	94.7	97.5	104.1	110.9	113.6
72.5°	80.2	83.0	90.3	98.2	101.5
75°	63.7	67.6	77.5	86.8	90.0
77.5°	49.3	53.6	65.8	75.2	78.9
80°	34.4	41.2	54.4	65.0	69.1
82.5°	21.6	30.0	44.2	55.2	58.8
85°	11.0	20.4	35.0	46.3	50.4
87.5°	2.9	13.2	27.2	38.0	42.2
90°	0.1	7.6	20.6	31.0	34.7
92.5°	0.1	4.3	15.4	24.6	28.5
95°	0.1	2.0	10.7	19.4	22.4
97.5°	0.1	0.8	7.3	14.6	17.6
100°	0.1	0.4	4.7	10.6	13.2
102.5°	0.2	0.3	2.9	7.6	9.7
105°	0.2	0.3	1.8	5.2	6.9
107.5°	0.2	0.3	1.0	3.5	4.8
110°	0.3	0.3	0.6	2.2	3.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.3	0.3	1.4	2.1
115°	0.3	0.3	0.3	0.9	1.3
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)