

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: P517810

Luminaire Tested: HVL8-1-LD4-2STD-35-UNV-O-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: P517810
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-35-UNV-O-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1580.0 lumens
Efficiency: N/A
Efficacy: 96.9 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

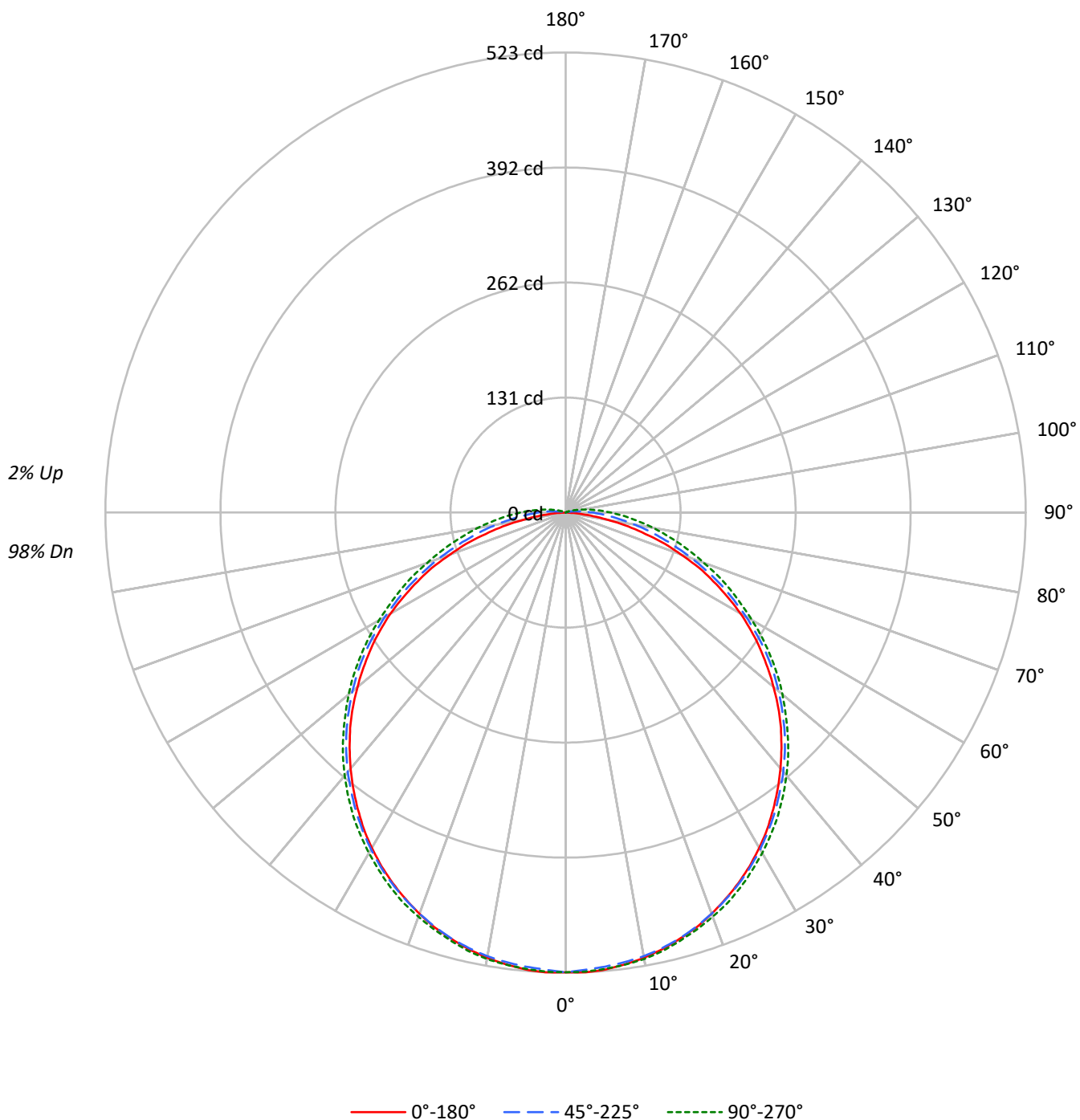
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8438	8438	8438
5°	8331	8186	8257
10°	8185	7981	8092
15°	8026	7763	7892
20°	7863	7529	7700
25°	7683	7294	7503
30°	7488	7046	7281
35°	7263	6781	7060
40°	7026	6506	6803
45°	6776	6210	6525
50°	6471	5876	6227
55°	6143	5516	5897
60°	5761	5067	5514
65°	5223	4574	5130
70°	4523	4007	4687
75°	3615	3396	4285
80°	2428	2795	3918
85°	1039	2188	3568

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6776 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.5	3.1
10°-20°	141.9	9.0
20°-30°	215.2	13.6
30°-40°	260.2	16.5
40°-50°	271.5	17.2
50°-60°	248.3	15.7
60°-70°	193.5	12.2
70°-80°	121.1	7.7
80°-90°	55.0	3.5
90°-100°	18.4	1.2
100°-110°	4.6	0.3
110°-120°	0.7	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°	406.5	25.7
0°-40°	666.8	42.2
0°-60°	1186.6	75.1
0°-90°	1556.2	98.5
90°-120°	23.8	1.5
90°-150°	23.8	1.5
90°-180°	24.0	1.5
0°-180°	1580.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	523	523	523	523	523	
5°	522	520	518	521	521	50
15°	502	502	501	504	504	142
25°	465	465	466	470	470	214
35°	412	413	415	419	421	258
45°	346	349	352	356	357	267
55°	270	273	278	282	284	241
65°	186	189	195	203	206	184
75°	94	100	114	128	133	100
85°	16	30	52	68	74	21
90°	0	11	30	46	51	1
95°	0	3	16	29	33	0
105°	0	0	3	8	10	0
115°	0	0	0	1	2	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°	522.6	522.6	522.6	522.6	522.6
2.5°	523.2	522.4	520.1	522.4	522.3
5°	521.5	520.5	518.1	520.6	520.6
7.5°	518.0	517.6	515.5	518.4	518.4
10°	513.9	513.8	512.1	515.2	515.3
12.5°	508.3	508.8	507.2	510.1	510.5
15°	501.6	502.5	501.1	504.0	503.8
17.5°	494.4	494.9	493.9	497.1	496.9
20°	485.4	486.0	485.2	488.6	488.9
22.5°	475.4	476.2	476.1	479.6	480.6
25°	464.8	465.2	465.7	469.6	470.3
27.5°	453.1	453.7	454.6	458.1	458.9
30°	440.3	441.3	442.2	445.9	446.9
32.5°	426.7	427.7	428.9	433.7	434.2
35°	411.5	413.3	415.0	419.2	420.9
37.5°	396.2	398.5	400.1	404.6	405.9
40°	380.0	382.4	385.0	389.6	390.5
42.5°	363.2	365.9	369.0	373.1	374.6
45°	346.2	349.2	352.1	355.5	357.2
47.5°	327.8	330.9	334.3	338.3	339.4
50°	308.8	312.4	316.1	319.8	321.8
52.5°	289.4	293.7	297.9	301.8	303.7
55°	270.2	273.4	278.4	282.5	284.3
57.5°	250.2	252.9	257.5	264.1	265.1
60°	229.9	232.3	237.0	242.4	244.7
62.5°	207.5	210.8	215.7	222.6	224.6
65°	185.6	188.8	195.4	203.1	206.3
67.5°	164.6	165.7	174.1	182.2	187.4
70°	139.7	143.9	153.6	163.6	167.5
72.5°	118.3	122.5	133.2	144.9	149.8
75°	94.0	99.8	114.3	128.0	132.8
77.5°	72.7	79.1	97.1	110.9	116.4
80°	50.8	60.7	80.3	95.8	101.9
82.5°	31.9	44.2	65.2	81.4	86.7
85°	16.3	30.1	51.6	68.2	74.3
87.5°	4.3	19.5	40.2	56.1	62.2
90°	0.1	11.2	30.4	45.7	51.2
92.5°	0.1	6.3	22.7	36.3	42.0
95°	0.1	3.0	15.8	28.6	33.0
97.5°	0.1	1.2	10.8	21.6	26.0
100°	0.1	0.6	6.9	15.6	19.5
102.5°	0.2	0.4	4.3	11.2	14.3
105°	0.2	0.4	2.6	7.6	10.2
107.5°	0.2	0.4	1.5	5.2	7.0
110°	0.4	0.4	0.9	3.2	4.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.5	2.1	3.1
115°	0.4	0.4	0.5	1.4	2.0
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)