

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: P518034

Luminaire Tested: HVL8-4-LD4-1LO-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: P518034
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1LO-35-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

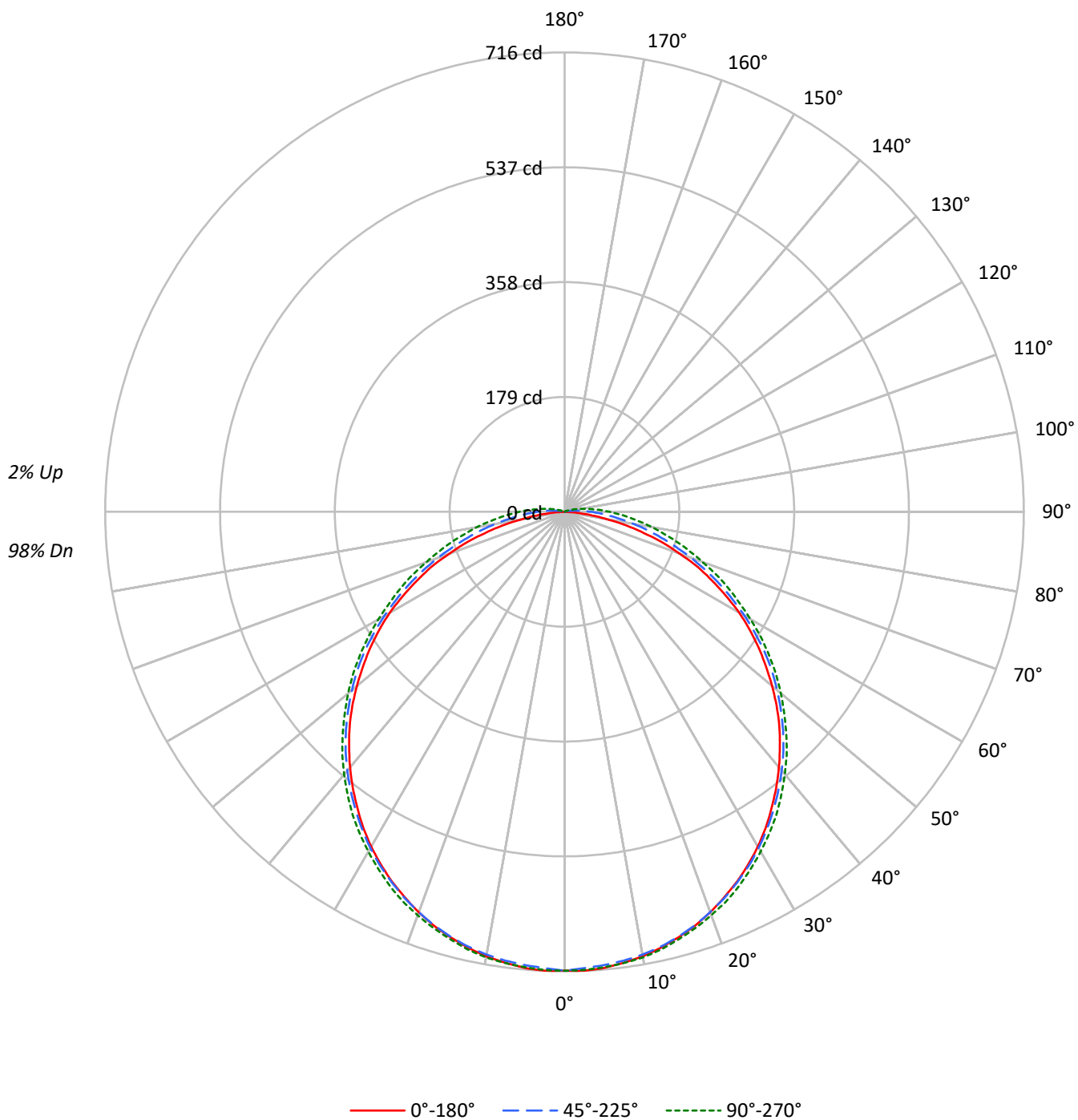
Lumens per Lamp: N/A
Luminaire Lumens: 2162.0 lumens
Efficiency: N/A
Efficacy: 94.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 23
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°	2886	2886	2886
5°	2881	2822	2825
10°	2862	2771	2768
15°	2837	2715	2700
20°	2810	2653	2634
25°	2779	2589	2567
30°	2742	2521	2491
35°	2696	2445	2415
40°	2647	2366	2328
45°	2596	2280	2232
50°	2528	2180	2130
55°	2456	2071	2018
60°	2368	1929	1886
65°	2227	1770	1755
70°	2025	1583	1604
75°	1736	1378	1466
80°	1305	1177	1340
85°	700	974	1220

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2596 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.7	3.1
10°-20°	194.1	9.0
20°-30°	294.5	13.6
30°-40°	356.1	16.5
40°-50°	371.6	17.2
50°-60°	339.7	15.7
60°-70°	264.8	12.2
70°-80°	165.7	7.7
80°-90°	75.2	3.5
90°-100°	25.2	1.2
100°-110°	6.3	0.3
110°-120°	1.0	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°	556.3	25.7
0°-40°	912.4	42.2
0°-60°	1623.7	75.1
0°-90°	2129.4	98.5
90°-120°	32.5	1.5
90°-150°	32.5	1.5
90°-180°	33.0	1.5
0°-180°	2162.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	715	715	715	715	715	
5°	714	712	709	712	712	68
15°	686	688	686	690	689	194
25°	636	636	637	643	644	293
35°	563	566	568	574	576	352
45°	474	478	482	486	489	365
55°	370	374	381	386	389	330
65°	254	258	267	278	282	251
75°	129	136	156	175	182	137
85°	22	41	71	93	102	28
90°	0	15	42	62	70	1
95°	0	4	22	39	45	0
105°	0	0	4	10	14	0
115°	0	0	1	2	3	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

TEST NUMBER: P518034

CATALOG NUMBER: HVL8-4-LD4-1LO-35-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	715.1	715.1	715.1	715.1	715.1
2.5°	715.9	714.9	711.7	714.9	714.7
5°	713.5	712.2	709.0	712.4	712.4
7.5°	708.8	708.3	705.5	709.3	709.3
10°	703.3	703.1	700.7	704.9	705.1
12.5°	695.5	696.2	694.0	698.0	698.5
15°	686.4	687.6	685.7	689.6	689.4
17.5°	676.5	677.1	675.8	680.2	680.0
20°	664.2	665.0	664.0	668.5	669.0
22.5°	650.5	651.7	651.5	656.2	657.6
25°	636.0	636.5	637.2	642.6	643.6
27.5°	620.0	620.8	622.0	626.9	627.9
30°	602.5	603.8	605.2	610.2	611.6
32.5°	583.9	585.3	586.9	593.5	594.2
35°	563.0	565.5	567.9	573.6	576.0
37.5°	542.1	545.3	547.5	553.6	555.4
40°	520.0	523.2	526.8	533.2	534.4
42.5°	496.9	500.6	504.9	510.6	512.6
45°	473.7	477.9	481.8	486.5	488.8
47.5°	448.6	452.8	457.5	462.9	464.4
50°	422.6	427.5	432.5	437.6	440.3
52.5°	396.0	401.9	407.6	413.0	415.5
55°	369.7	374.0	381.0	386.5	389.1
57.5°	342.4	346.1	352.3	361.4	362.8
60°	314.5	317.9	324.3	331.7	334.8
62.5°	283.9	288.4	295.2	304.6	307.3
65°	254.0	258.4	267.3	278.0	282.3
67.5°	225.2	226.7	238.2	249.3	256.4
70°	191.2	196.9	210.2	223.9	229.3
72.5°	161.8	167.6	182.2	198.2	205.0
75°	128.6	136.5	156.4	175.1	181.7
77.5°	99.5	108.2	132.8	151.7	159.3
80°	69.4	83.1	109.9	131.1	139.4
82.5°	43.7	60.5	89.2	111.4	118.7
85°	22.3	41.1	70.6	93.4	101.6
87.5°	5.9	26.6	55.0	76.7	85.1
90°	0.2	15.3	41.6	62.5	70.1
92.5°	0.2	8.6	31.0	49.7	57.5
95°	0.2	4.0	21.6	39.1	45.2
97.5°	0.2	1.7	14.8	29.5	35.6
100°	0.2	0.8	9.4	21.4	26.6
102.5°	0.3	0.5	5.9	15.3	19.6
105°	0.3	0.5	3.5	10.5	14.0
107.5°	0.3	0.5	2.0	7.1	9.6
110°	0.5	0.5	1.2	4.4	6.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.7	2.9	4.2
115°	0.5	0.5	0.7	1.9	2.7
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)