

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: P518211

Luminaire Tested: HVL8-8-LD4-2HI-40-UNV-C-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P518211
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2HI-40-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18144.0 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

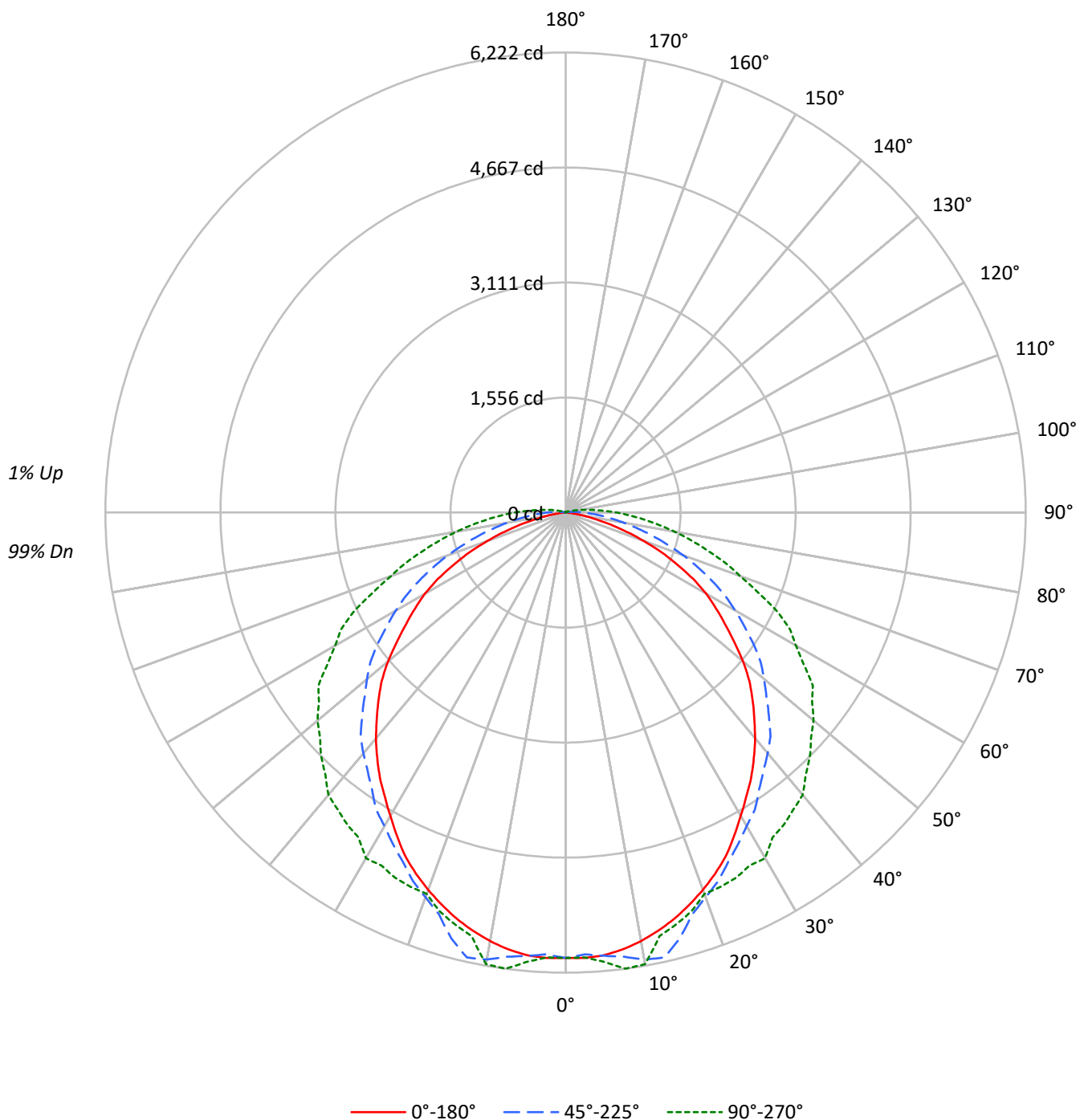
Input Watts (W): 172.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P518211

CATALOG NUMBER: HVL8-8-LD4-2HI-40-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518211

CATALOG NUMBER: HVL8-8-LD4-2HI-40-UNV-C-EDD-90

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	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	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	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	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°	12155	12155	12155
5°	12150	11989	12096
10°	12012	12166	12171
15°	11816	11850	11297
20°	11572	11114	10803
25°	11313	10647	10871
30°	10908	10272	10991
35°	10627	9918	10797
40°	10325	9655	10863
45°	9999	9313	10667
50°	9600	8954	10586
55°	9001	8569	10580
60°	8556	8036	10128
65°	7622	7397	9805
70°	6286	6560	8793
75°	4563	5540	8027
80°	2640	4511	7206
85°	1055	3447	6348

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10667 cd/sqm

TEST NUMBER: P518211

CATALOG NUMBER: HVL8-8-LD4-2HI-40-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	578.9	3.2
10°-20°	1648.5	9.1
20°-30°	2452.7	13.5
30°-40°	2948.2	16.2
40°-50°	3103.1	17.1
50°-60°	2879.4	15.9
60°-70°	2276.6	12.5
70°-80°	1390.6	7.7
80°-90°	605.9	3.3
90°-100°	188.6	1.0
100°-110°	42.4	0.2
110°-120°	17.0	0.1
120°-130°	9.6	0.1
130°-140°	2.6	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°	4680.0	25.8
0°-40°	7628.2	42.0
0°-60°	13610.7	75.0
0°-90°	17883.8	98.6
90°-120°	248.0	1.4
90°-150°	260.2	1.4
90°-180°	260.0	1.4
0°-180°	18144.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6023	6023	6023	6023	6023	
5°	6008	5996	6017	6084	6101	569
15°	5687	5905	5963	5765	5769	1602
25°	5130	5457	5208	5364	5451	2355
35°	4376	4498	4565	4980	5149	2735
45°	3576	3592	3888	4504	4672	2757
55°	2634	2677	3102	3780	4081	2367
65°	1667	1720	2185	2892	3154	1651
75°	631	836	1218	1872	1990	688
85°	56	196	475	921	1058	87
90°	1	59	249	584	688	3
95°	1	15	109	320	391	1
105°	1	9	22	63	88	2
115°	1	5	17	28	29	2
125°	1	2	7	18	26	2
135°	2	2	2	6	9	1
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: P518211

CATALOG NUMBER: HVL8-8-LD4-2HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6022.8	6022.8	6022.8	6022.8	6022.8
2.5°	6030.2	6014.2	5981.1	6013.0	6021.6
5°	6008.1	5995.8	6016.7	6084.2	6101.3
7.5°	5957.8	6004.4	6059.6	6182.3	6221.6
10°	5883.0	5971.3	6136.9	6241.2	6200.7
12.5°	5792.2	5941.8	6163.9	5960.2	5865.8
15°	5686.7	5905.0	5962.7	5765.2	5768.9
17.5°	5562.7	5874.4	5696.5	5691.6	5656.0
20°	5429.0	5771.3	5535.7	5525.9	5487.9
22.5°	5285.5	5635.1	5393.4	5373.8	5476.9
25°	5129.6	5457.2	5208.2	5364.0	5451.1
27.5°	4934.6	5224.1	5053.6	5274.4	5383.6
30°	4737.0	4983.6	4895.3	5203.3	5397.1
32.5°	4551.8	4732.1	4765.3	5176.3	5208.2
35°	4376.3	4497.8	4565.3	4980.0	5149.3
37.5°	4183.7	4216.8	4396.0	4897.8	5060.9
40°	3987.4	3966.5	4253.6	4762.8	4988.5
42.5°	3776.4	3769.0	4102.7	4695.3	4808.2
45°	3576.4	3592.3	3888.0	4503.9	4672.0
47.5°	3371.5	3392.4	3684.4	4294.1	4502.7
50°	3133.5	3160.5	3502.8	4107.6	4376.3
52.5°	2875.8	2927.4	3326.1	3931.0	4202.1
55°	2634.1	2677.1	3101.6	3780.1	4080.6
57.5°	2413.3	2439.1	2869.7	3589.9	3816.9
60°	2196.1	2202.3	2651.3	3378.9	3596.0
62.5°	1947.1	1958.1	2426.8	3129.8	3420.6
65°	1667.3	1720.1	2185.1	2891.8	3154.3
67.5°	1406.0	1498.0	1938.5	2673.4	2810.8
70°	1126.3	1282.1	1696.8	2417.0	2513.9
72.5°	869.9	1052.7	1449.0	2129.9	2266.1
75°	630.6	835.5	1218.3	1872.2	1990.0
77.5°	424.5	633.1	1002.4	1587.6	1743.4
80°	254.0	462.5	809.7	1323.8	1499.3
82.5°	130.1	310.4	628.2	1110.3	1267.4
85°	56.4	196.3	474.8	921.4	1057.6
87.5°	15.9	111.6	349.7	744.7	860.1
90°	1.2	58.9	249.1	584.0	688.3
92.5°	1.2	28.2	175.4	441.7	521.4
95°	1.2	14.7	109.2	320.2	391.4
97.5°	1.2	8.6	66.3	227.0	287.1
100°	1.2	7.4	39.3	150.9	204.9
102.5°	1.2	8.6	27.0	95.7	133.7
105°	1.2	8.6	22.1	62.6	88.3
107.5°	2.5	8.6	19.6	46.6	61.3
110°	1.2	7.4	20.9	35.6	47.8

TEST NUMBER: P518211

CATALOG NUMBER: HVL8-8-LD4-2HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.5	6.1	19.6	29.4	35.6
115°	1.2	4.9	17.2	28.2	29.4
117.5°	2.5	3.7	13.5	28.2	29.4
120°	2.5	2.5	11.0	27.0	30.7
122.5°	2.5	2.5	8.6	24.5	29.4
125°	1.2	2.5	7.4	18.4	25.8
127.5°	2.5	2.5	6.1	14.7	19.6
130°	2.5	2.5	4.9	11.0	14.7
132.5°	2.5	2.5	3.7	8.6	11.0
135°	2.5	2.5	2.5	6.1	8.6
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)