

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: P518209

Luminaire Tested: HVL8-8-LD4-2HI-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: P518209
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2HI-35-UNV-O-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13611.0 lumens
Efficiency: N/A
Efficacy: 79.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

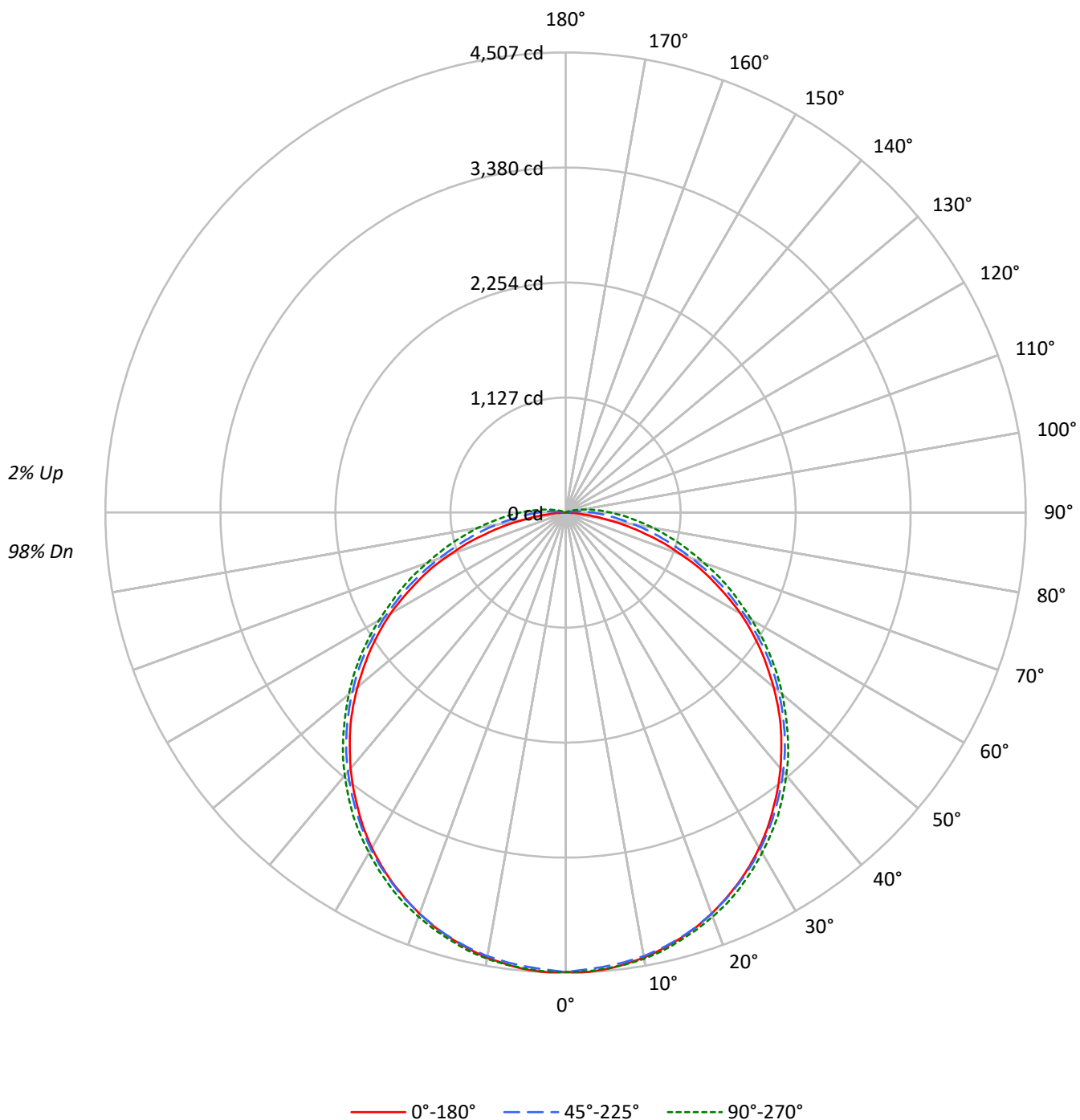
Input Watts (W): 172.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518209

CATALOG NUMBER: HVL8-8-LD4-2HI-35-UNV-O-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518209

CATALOG NUMBER: HVL8-8-LD4-2HI-35-UNV-O-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	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°	9085	9085	9085
5°	9084	8894	8891
10°	9040	8745	8713
15°	8979	8580	8499
20°	8913	8393	8292
25°	8831	8200	8080
30°	8734	7994	7841
35°	8607	7767	7603
40°	8477	7527	7326
45°	8338	7265	7027
50°	8151	6961	6705
55°	7952	6626	6350
60°	7715	6189	5936
65°	7311	5697	5526
70°	6717	5116	5048
75°	5858	4478	4615
80°	4544	3854	4218
85°	2620	3229	3841

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8338 cd/sqm

TEST NUMBER: P518209

CATALOG NUMBER: HVL8-8-LD4-2HI-35-UNV-O-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	426.0	3.1
10°-20°	1222.0	9.0
20°-30°	1854.1	13.6
30°-40°	2241.9	16.5
40°-50°	2339.3	17.2
50°-60°	2138.8	15.7
60°-70°	1667.3	12.2
70°-80°	1043.0	7.7
80°-90°	473.7	3.5
90°-100°	158.8	1.2
100°-110°	39.9	0.3
110°-120°	6.3	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°	3502.1	25.7
0°-40°	5744.0	42.2
0°-60°	10222.1	75.1
0°-90°	13406.1	98.5
90°-120°	204.9	1.5
90°-150°	204.9	1.5
90°-180°	205.0	1.5
0°-180°	13611.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4502	4502	4502	4502	4502	
5°	4492	4484	4464	4485	4485	427
15°	4321	4329	4317	4342	4340	1220
25°	4004	4007	4011	4045	4052	1845
35°	3544	3560	3575	3611	3626	2219
45°	2982	3009	3033	3063	3078	2298
55°	2327	2355	2398	2433	2449	2079
65°	1599	1627	1683	1750	1778	1582
75°	810	860	985	1103	1144	863
85°	140	259	445	588	640	177
90°	1	97	262	394	442	6
95°	1	26	136	246	284	1
105°	2	3	22	66	88	2
115°	3	3	4	12	17	2
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: P518209

CATALOG NUMBER: HVL8-8-LD4-2HI-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4501.7	4501.7	4501.7	4501.7	4501.7
2.5°	4507.0	4500.6	4480.5	4500.6	4499.6
5°	4492.1	4483.7	4463.5	4484.7	4484.7
7.5°	4462.4	4459.2	4441.2	4465.6	4465.6
10°	4427.4	4426.3	4411.5	4438.0	4439.1
12.5°	4378.6	4382.8	4369.0	4394.5	4397.7
15°	4321.3	4328.7	4317.0	4341.5	4340.4
17.5°	4258.7	4262.9	4254.4	4282.0	4281.0
20°	4181.2	4186.5	4180.1	4208.8	4212.0
22.5°	4095.2	4102.7	4101.6	4131.3	4139.8
25°	4004.0	4007.2	4011.4	4045.4	4051.7
27.5°	3903.2	3908.5	3915.9	3946.7	3953.0
30°	3792.8	3801.3	3809.8	3841.6	3850.1
32.5°	3676.1	3684.6	3695.2	3736.6	3740.8
35°	3544.5	3560.4	3575.3	3611.3	3626.2
37.5°	3412.9	3433.0	3446.8	3485.0	3496.7
40°	3273.9	3294.0	3316.3	3356.6	3364.1
42.5°	3128.5	3151.8	3178.4	3214.4	3227.2
45°	2982.0	3008.6	3033.0	3062.7	3077.5
47.5°	2823.9	2850.4	2880.2	2914.1	2923.7
50°	2660.5	2691.3	2723.1	2754.9	2771.9
52.5°	2492.8	2529.9	2566.0	2600.0	2615.9
55°	2327.3	2354.8	2398.4	2433.4	2449.3
57.5°	2155.3	2178.7	2218.0	2275.3	2283.7
60°	1980.2	2001.5	2041.8	2088.5	2107.6
62.5°	1787.1	1815.7	1858.2	1917.6	1934.6
65°	1599.3	1626.9	1683.1	1750.0	1777.5
67.5°	1417.8	1427.3	1499.5	1569.5	1614.1
70°	1203.4	1239.5	1323.3	1409.3	1443.3
72.5°	1018.8	1054.9	1147.2	1248.0	1290.4
75°	809.7	859.6	984.8	1102.6	1144.0
77.5°	626.1	681.3	836.2	955.1	1002.9
80°	437.2	523.2	691.9	825.6	877.6
82.5°	274.9	381.0	561.4	701.5	747.1
85°	140.1	258.9	444.7	587.9	639.9
87.5°	37.1	167.7	346.0	482.9	535.9
90°	1.1	96.6	262.1	393.7	441.5
92.5°	1.1	54.1	195.3	313.1	361.9
95°	1.1	25.5	135.8	246.2	284.4
97.5°	1.1	10.6	93.4	185.7	223.9
100°	1.1	5.3	59.4	134.8	167.7
102.5°	2.1	3.2	37.1	96.6	123.1
105°	2.1	3.2	22.3	65.8	88.1
107.5°	2.1	3.2	12.7	44.6	60.5
110°	3.2	3.2	7.4	27.6	40.3

TEST NUMBER: P518209

CATALOG NUMBER: HVL8-8-LD4-2HI-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.2	3.2	4.2	18.0	26.5
115°	3.2	3.2	4.2	11.7	17.0
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)