

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: P518231

Luminaire Tested: HVL8-8-LD4-2LO-50-UNV-C-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: P518231
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2LO-50-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11131.0 lumens
Efficiency: N/A
Efficacy: 120.7 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

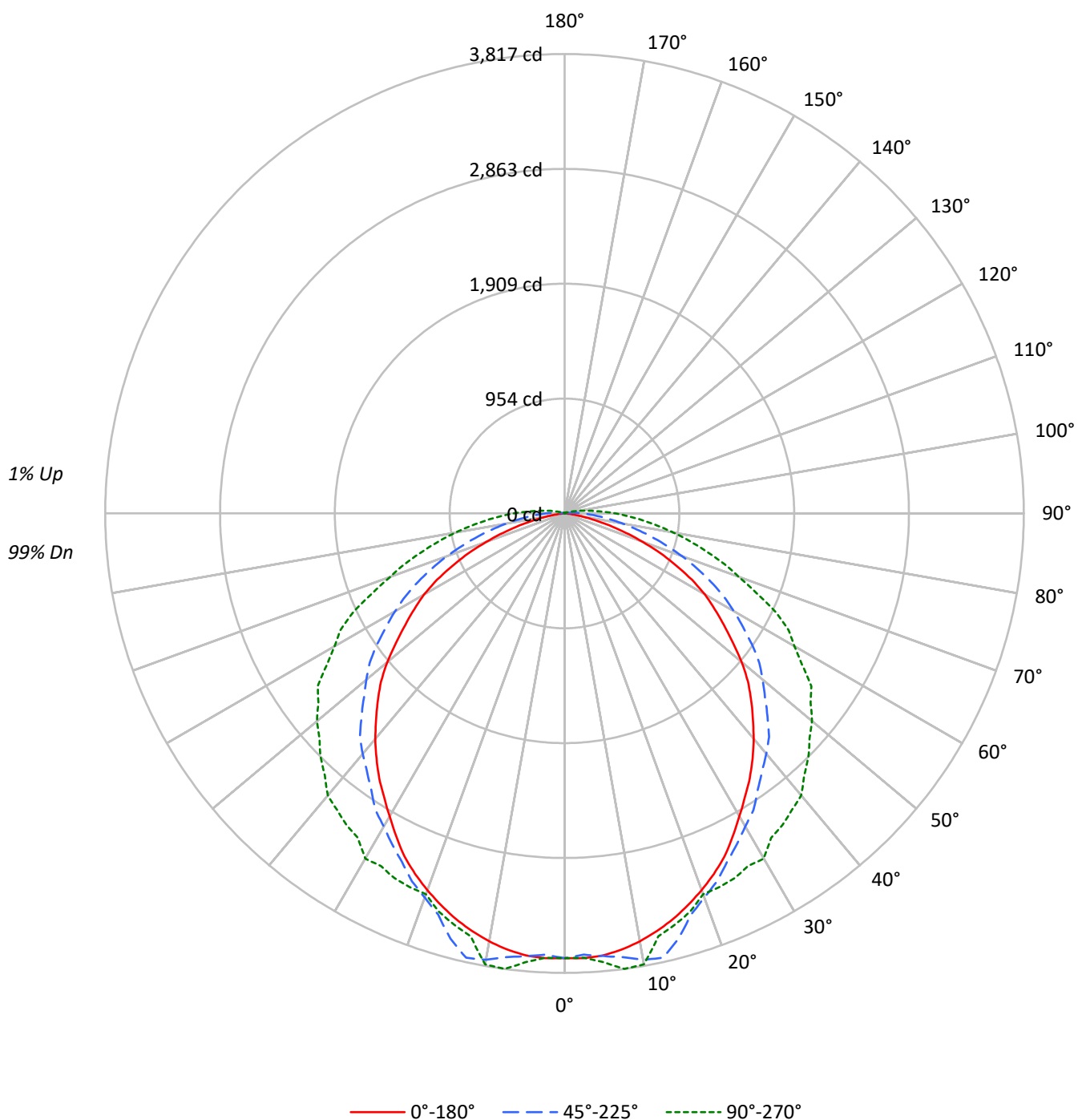
Input Watts (W): 92.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	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	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	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°	7457	7457	7457
5°	7454	7355	7421
10°	7369	7464	7467
15°	7249	7270	6930
20°	7099	6819	6628
25°	6940	6532	6669
30°	6692	6302	6743
35°	6520	6084	6623
40°	6334	5923	6665
45°	6135	5713	6544
50°	5889	5493	6494
55°	5522	5257	6491
60°	5249	4930	6214
65°	4676	4538	6015
70°	3857	4025	5394
75°	2799	3399	4924
80°	1619	2768	4421
85°	647	2115	3894

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6544 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	355.1	3.2
10°-20°	1011.3	9.1
20°-30°	1504.7	13.5
30°-40°	1808.6	16.2
40°-50°	1903.7	17.1
50°-60°	1766.4	15.9
60°-70°	1396.7	12.5
70°-80°	853.1	7.7
80°-90°	371.7	3.3
90°-100°	115.7	1.0
100°-110°	26.0	0.2
110°-120°	10.5	0.1
120°-130°	5.9	0.1
130°-140°	1.6	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°	2871.1	25.8
0°-40°	4679.7	42.0
0°-60°	8349.9	75.0
0°-90°	10971.4	98.6
90°-120°	152.2	1.4
90°-150°	159.6	1.4
90°-180°	160.0	1.4
0°-180°	11131.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3695	3695	3695	3695	3695	
5°	3686	3678	3691	3732	3743	349
15°	3489	3623	3658	3537	3539	983
25°	3147	3348	3195	3291	3344	1445
35°	2685	2759	2801	3055	3159	1678
45°	2194	2204	2385	2763	2866	1691
55°	1616	1642	1903	2319	2503	1452
65°	1023	1055	1340	1774	1935	1013
75°	387	513	747	1149	1221	422
85°	35	120	291	565	649	54
90°	1	36	153	358	422	2
95°	1	9	67	196	240	1
105°	1	5	14	38	54	1
115°	1	3	10	17	18	1
125°	1	2	4	11	16	1
135°	2	2	2	4	5	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3694.9	3694.9	3694.9	3694.9	3694.9
2.5°	3699.4	3689.6	3669.3	3688.9	3694.1
5°	3685.9	3678.3	3691.1	3732.5	3743.1
7.5°	3655.0	3683.6	3717.5	3792.7	3816.8
10°	3609.1	3663.3	3764.9	3828.9	3804.0
12.5°	3553.4	3645.2	3781.4	3656.5	3598.5
15°	3488.7	3622.6	3658.0	3536.8	3539.1
17.5°	3412.6	3603.8	3494.7	3491.7	3469.8
20°	3330.6	3540.6	3396.1	3390.1	3366.7
22.5°	3242.5	3457.0	3308.8	3296.7	3359.9
25°	3146.9	3347.9	3195.1	3290.7	3344.1
27.5°	3027.3	3204.9	3100.3	3235.8	3302.7
30°	2906.1	3057.4	3003.2	3192.1	3311.0
32.5°	2792.4	2903.1	2923.4	3175.5	3195.1
35°	2684.8	2759.3	2800.7	3055.1	3159.0
37.5°	2566.6	2586.9	2696.8	3004.7	3104.8
40°	2446.2	2433.4	2609.5	2921.9	3060.4
42.5°	2316.7	2312.2	2516.9	2880.5	2949.7
45°	2194.1	2203.8	2385.2	2763.1	2866.2
47.5°	2068.4	2081.1	2260.3	2634.4	2762.3
50°	1922.3	1938.9	2148.9	2520.0	2684.8
52.5°	1764.3	1795.9	2040.5	2411.6	2577.9
55°	1616.0	1642.3	1902.8	2319.0	2503.4
57.5°	1480.5	1496.3	1760.5	2202.3	2341.6
60°	1347.3	1351.1	1626.5	2072.9	2206.1
62.5°	1194.5	1201.3	1488.8	1920.1	2098.5
65°	1022.9	1055.3	1340.5	1774.1	1935.1
67.5°	862.6	919.0	1189.2	1640.1	1724.4
70°	691.0	786.5	1041.0	1482.8	1542.2
72.5°	533.6	645.8	888.9	1306.6	1390.2
75°	386.9	512.6	747.4	1148.6	1220.8
77.5°	260.4	388.4	614.9	974.0	1069.6
80°	155.8	283.8	496.8	812.1	919.8
82.5°	79.8	190.4	385.4	681.2	777.5
85°	34.6	120.4	291.3	565.3	648.8
87.5°	9.8	68.5	214.5	456.9	527.6
90°	0.8	36.1	152.8	358.3	422.3
92.5°	0.8	17.3	107.6	271.0	319.9
95°	0.8	9.0	67.0	196.4	240.1
97.5°	0.8	5.3	40.6	139.2	176.1
100°	0.8	4.5	24.1	92.6	125.7
102.5°	0.8	5.3	16.6	58.7	82.0
105°	0.8	5.3	13.5	38.4	54.2
107.5°	1.5	5.3	12.0	28.6	37.6
110°	0.8	4.5	12.8	21.8	29.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	3.8	12.0	18.1	21.8
115°	0.8	3.0	10.5	17.3	18.1
117.5°	1.5	2.3	8.3	17.3	18.1
120°	1.5	1.5	6.8	16.6	18.8
122.5°	1.5	1.5	5.3	15.1	18.1
125°	0.8	1.5	4.5	11.3	15.8
127.5°	1.5	1.5	3.8	9.0	12.0
130°	1.5	1.5	3.0	6.8	9.0
132.5°	1.5	1.5	2.3	5.3	6.8
135°	1.5	1.5	1.5	3.8	5.3
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)