

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: P518287

Luminaire Tested: HVL8-8-LD4-3STD-35-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: P518287
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-3STD-35-UNV-C-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: 22015.0 lumens
Efficiency: N/A
Efficacy: 115.3 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

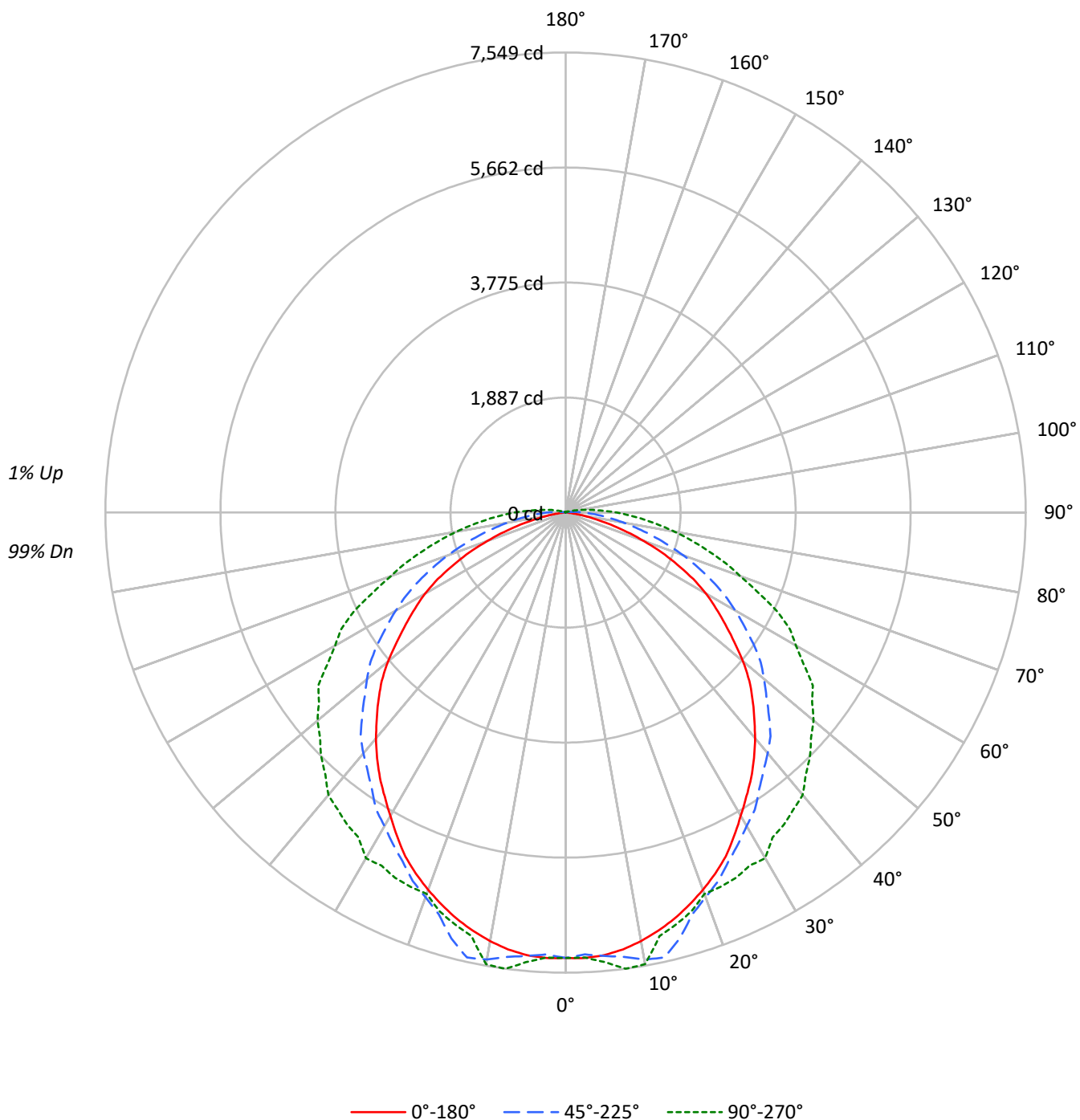
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518287

CATALOG NUMBER: HVL8-8-LD4-3STD-35-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518287

CATALOG NUMBER: HVL8-8-LD4-3STD-35-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	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°	14749	14749	14749
5°	14742	14546	14677
10°	14575	14761	14768
15°	14337	14379	13707
20°	14041	13486	13108
25°	13727	12918	13191
30°	13236	12464	13336
35°	12895	12034	13100
40°	12528	11715	13181
45°	12133	11300	12943
50°	11648	10864	12845
55°	10921	10398	12837
60°	10381	9750	12289
65°	9248	8975	11898
70°	7628	7960	10669
75°	5536	6722	9740
80°	3203	5473	8743
85°	1281	4183	7702

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 12943 cd/sqm

TEST NUMBER: P518287

CATALOG NUMBER: HVL8-8-LD4-3STD-35-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	702.4	3.2
10°-20°	2000.2	9.1
20°-30°	2976.0	13.5
30°-40°	3577.1	16.2
40°-50°	3765.2	17.1
50°-60°	3493.6	15.9
60°-70°	2762.3	12.5
70°-80°	1687.3	7.7
80°-90°	735.2	3.3
90°-100°	228.9	1.0
100°-110°	51.4	0.2
110°-120°	20.7	0.1
120°-130°	11.6	0.1
130°-140°	3.1	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°	5678.5	25.8
0°-40°	9255.7	42.0
0°-60°	16514.5	75.0
0°-90°	21699.3	98.6
90°-120°	300.9	1.4
90°-150°	315.7	1.4
90°-180°	316.0	1.4
0°-180°	22015.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7308	7308	7308	7308	7308	
5°	7290	7275	7300	7382	7403	691
15°	6900	7165	7235	6995	7000	1944
25°	6224	6622	6319	6508	6614	2857
35°	5310	5457	5539	6042	6248	3319
45°	4339	4359	4718	5465	5669	3345
55°	3196	3248	3763	4586	4951	2872
65°	2023	2087	2651	3509	3827	2004
75°	765	1014	1478	2272	2415	835
85°	68	238	576	1118	1283	106
90°	2	72	302	709	835	3
95°	2	18	132	388	475	1
105°	2	10	27	76	107	2
115°	2	6	21	34	36	2
125°	2	3	9	22	31	2
135°	3	3	3	7	10	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: P518287

CATALOG NUMBER: HVL8-8-LD4-3STD-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	7307.8	7307.8	7307.8	7307.8	7307.8
2.5°	7316.7	7297.4	7257.2	7295.9	7306.3
5°	7289.9	7275.0	7300.3	7382.2	7403.1
7.5°	7228.9	7285.5	7352.4	7501.3	7548.9
10°	7138.1	7245.3	7446.2	7572.8	7523.6
12.5°	7027.9	7209.5	7479.0	7231.9	7117.2
15°	6899.9	7164.9	7234.8	6995.2	6999.6
17.5°	6749.5	7127.7	6911.8	6905.8	6862.7
20°	6587.3	7002.6	6716.8	6704.9	6658.7
22.5°	6413.1	6837.4	6544.1	6520.3	6645.3
25°	6224.0	6621.5	6319.3	6508.4	6614.1
27.5°	5987.4	6338.7	6131.7	6399.7	6532.2
30°	5747.7	6046.9	5939.7	6313.4	6548.6
32.5°	5522.9	5741.7	5781.9	6280.6	6319.3
35°	5310.0	5457.4	5539.3	6042.4	6247.9
37.5°	5076.3	5116.5	5333.8	5942.7	6140.7
40°	4838.1	4812.8	5161.1	5778.9	6052.9
42.5°	4582.1	4573.1	4978.0	5697.1	5834.0
45°	4339.4	4358.8	4717.5	5464.8	5668.8
47.5°	4090.8	4116.1	4470.4	5210.3	5463.3
50°	3802.0	3834.8	4250.1	4984.0	5310.0
52.5°	3489.4	3551.9	4035.7	4769.6	5098.6
55°	3196.1	3248.2	3763.3	4586.5	4951.2
57.5°	2928.2	2959.4	3482.0	4355.8	4631.2
60°	2664.7	2672.1	3217.0	4099.7	4363.2
62.5°	2362.5	2375.9	2944.5	3797.5	4150.4
65°	2023.1	2087.1	2651.3	3508.7	3827.3
67.5°	1706.0	1817.6	2352.1	3243.8	3410.5
70°	1366.6	1555.6	2058.8	2932.6	3050.2
72.5°	1055.5	1277.3	1758.1	2584.3	2749.5
75°	765.2	1013.8	1478.2	2271.7	2414.6
77.5°	515.1	768.1	1216.2	1926.3	2115.4
80°	308.2	561.2	982.5	1606.3	1819.1
82.5°	157.8	376.6	762.2	1347.2	1537.8
85°	68.5	238.2	576.1	1118.0	1283.2
87.5°	19.4	135.5	424.3	903.6	1043.5
90°	1.5	71.5	302.2	708.6	835.1
92.5°	1.5	34.2	212.9	535.9	632.7
95°	1.5	17.9	132.5	388.5	474.9
97.5°	1.5	10.4	80.4	275.4	348.3
100°	1.5	8.9	47.6	183.1	248.6
102.5°	1.5	10.4	32.8	116.1	162.3
105°	1.5	10.4	26.8	75.9	107.2
107.5°	3.0	10.4	23.8	56.6	74.4
110°	1.5	8.9	25.3	43.2	58.1

TEST NUMBER: P518287

CATALOG NUMBER: HVL8-8-LD4-3STD-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.0	7.4	23.8	35.7	43.2
115°	1.5	6.0	20.8	34.2	35.7
117.5°	3.0	4.5	16.4	34.2	35.7
120°	3.0	3.0	13.4	32.8	37.2
122.5°	3.0	3.0	10.4	29.8	35.7
125°	1.5	3.0	8.9	22.3	31.3
127.5°	3.0	3.0	7.4	17.9	23.8
130°	3.0	3.0	6.0	13.4	17.9
132.5°	3.0	3.0	4.5	10.4	13.4
135°	3.0	3.0	3.0	7.4	10.4
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)