

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: P517764

Luminaire Tested: HVL8-1-LD4-1STD-40-UNV-C-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: P517764
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1STD-40-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 928.0 lumens
Efficiency: N/A
Efficacy: 113.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

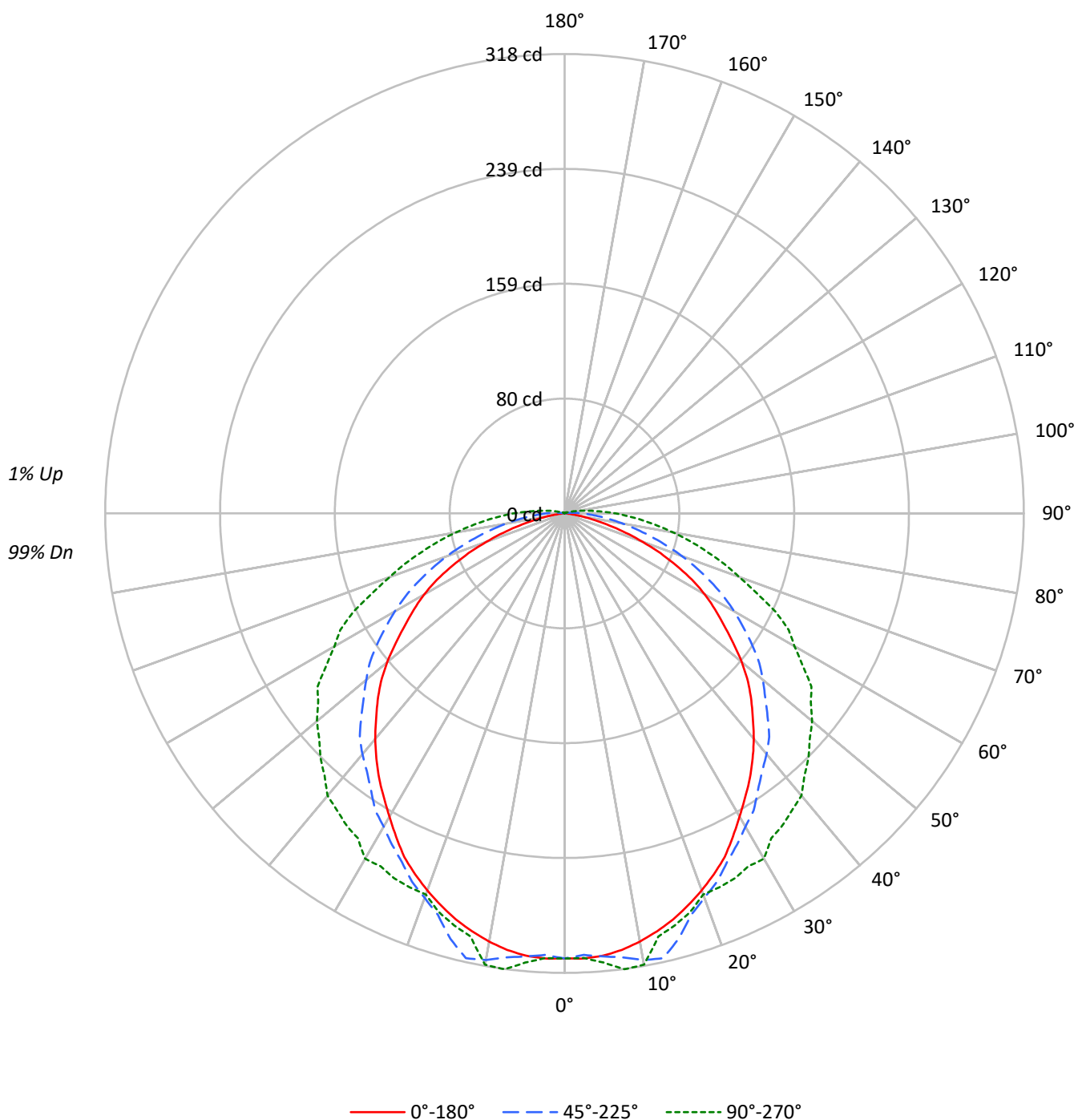
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517764

CATALOG NUMBER: HVL8-1-LD4-1STD-40-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517764

CATALOG NUMBER: HVL8-1-LD4-1STD-40-UNV-C-EDD

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°	4973	4973	4973
5°	4909	4862	4950
10°	4792	4892	4979
15°	4655	4725	4623
20°	4499	4393	4421
25°	4337	4173	4448
30°	4121	3990	4497
35°	3950	3815	4418
40°	3770	3677	4444
45°	3580	3508	4366
50°	3359	3331	4331
55°	3063	3142	4329
60°	2814	2899	4144
65°	2401	2617	4011
70°	1865	2264	3599
75°	1242	1851	3285
80°	621	1441	2949
85°	185	1031	2598

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4366 cd/sqm

TEST NUMBER: P517764

CATALOG NUMBER: HVL8-1-LD4-1STD-40-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	29.6	3.2
10°-20°	84.3	9.1
20°-30°	125.5	13.5
30°-40°	150.8	16.2
40°-50°	158.7	17.1
50°-60°	147.3	15.9
60°-70°	116.4	12.5
70°-80°	71.1	7.7
80°-90°	31.0	3.3
90°-100°	9.7	1.0
100°-110°	2.2	0.2
110°-120°	0.9	0.1
120°-130°	0.5	0.1
130°-140°	0.1	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°	239.4	25.8
0°-40°	390.2	42.0
0°-60°	696.1	75.0
0°-90°	914.7	98.6
90°-120°	12.7	1.4
90°-150°	13.3	1.4
90°-180°	13.0	1.4
0°-180°	928.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	308	308	308	308	308	
5°	307	307	308	311	312	29
15°	291	302	305	295	295	82
25°	262	279	266	274	279	120
35°	224	230	234	255	263	140
45°	183	184	199	230	239	141
55°	135	137	159	193	209	121
65°	85	88	112	148	161	84
75°	32	43	62	96	102	35
85°	3	10	24	47	54	4
90°	0	3	13	30	35	0
95°	0	1	6	16	20	0
105°	0	0	1	3	4	0
115°	0	0	1	1	2	0
125°	0	0	0	1	1	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: P517764

CATALOG NUMBER: HVL8-1-LD4-1STD-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	308.0	308.0	308.0	308.0	308.0
2.5°	308.4	307.6	305.9	307.5	308.0
5°	307.3	306.7	307.7	311.2	312.1
7.5°	304.7	307.1	309.9	316.2	318.2
10°	300.9	305.4	313.9	319.2	317.1
12.5°	296.2	303.9	315.3	304.8	300.0
15°	290.9	302.0	305.0	294.9	295.1
17.5°	284.5	300.5	291.4	291.1	289.3
20°	277.7	295.2	283.1	282.6	280.7
22.5°	270.3	288.2	275.9	274.9	280.1
25°	262.4	279.1	266.4	274.3	278.8
27.5°	252.4	267.2	258.5	269.8	275.4
30°	242.3	254.9	250.4	266.1	276.0
32.5°	232.8	242.0	243.7	264.7	266.4
35°	223.8	230.0	233.5	254.7	263.4
37.5°	214.0	215.7	224.8	250.5	258.8
40°	203.9	202.9	217.6	243.6	255.1
42.5°	193.1	192.8	209.8	240.1	245.9
45°	182.9	183.7	198.9	230.4	239.0
47.5°	172.4	173.5	188.4	219.6	230.3
50°	160.3	161.6	179.2	210.1	223.8
52.5°	147.1	149.7	170.1	201.1	214.9
55°	134.7	136.9	158.6	193.3	208.7
57.5°	123.4	124.7	146.8	183.6	195.2
60°	112.3	112.6	135.6	172.8	183.9
62.5°	99.6	100.2	124.1	160.1	175.0
65°	85.3	88.0	111.8	147.9	161.3
67.5°	71.9	76.6	99.1	136.7	143.8
70°	57.6	65.6	86.8	123.6	128.6
72.5°	44.5	53.8	74.1	108.9	115.9
75°	32.3	42.7	62.3	95.8	101.8
77.5°	21.7	32.4	51.3	81.2	89.2
80°	13.0	23.7	41.4	67.7	76.7
82.5°	6.7	15.9	32.1	56.8	64.8
85°	2.9	10.0	24.3	47.1	54.1
87.5°	0.8	5.7	17.9	38.1	44.0
90°	0.1	3.0	12.7	29.9	35.2
92.5°	0.1	1.4	9.0	22.6	26.7
95°	0.1	0.8	5.6	16.4	20.0
97.5°	0.1	0.4	3.4	11.6	14.7
100°	0.1	0.4	2.0	7.7	10.5
102.5°	0.1	0.4	1.4	4.9	6.8
105°	0.1	0.4	1.1	3.2	4.5
107.5°	0.1	0.4	1.0	2.4	3.1
110°	0.1	0.4	1.1	1.8	2.4

TEST NUMBER: P517764

CATALOG NUMBER: HVL8-1-LD4-1STD-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	1.0	1.5	1.8
115°	0.1	0.3	0.9	1.4	1.5
117.5°	0.1	0.2	0.7	1.4	1.5
120°	0.1	0.1	0.6	1.4	1.6
122.5°	0.1	0.1	0.4	1.3	1.5
125°	0.1	0.1	0.4	0.9	1.3
127.5°	0.1	0.1	0.3	0.8	1.0
130°	0.1	0.1	0.3	0.6	0.8
132.5°	0.1	0.1	0.2	0.4	0.6
135°	0.1	0.1	0.1	0.3	0.4
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)