

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: P517808

Luminaire Tested: HVL8-1-LD4-2STD-35-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: P517808
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-35-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1745.0 lumens
Efficiency: N/A
Efficacy: 107.1 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

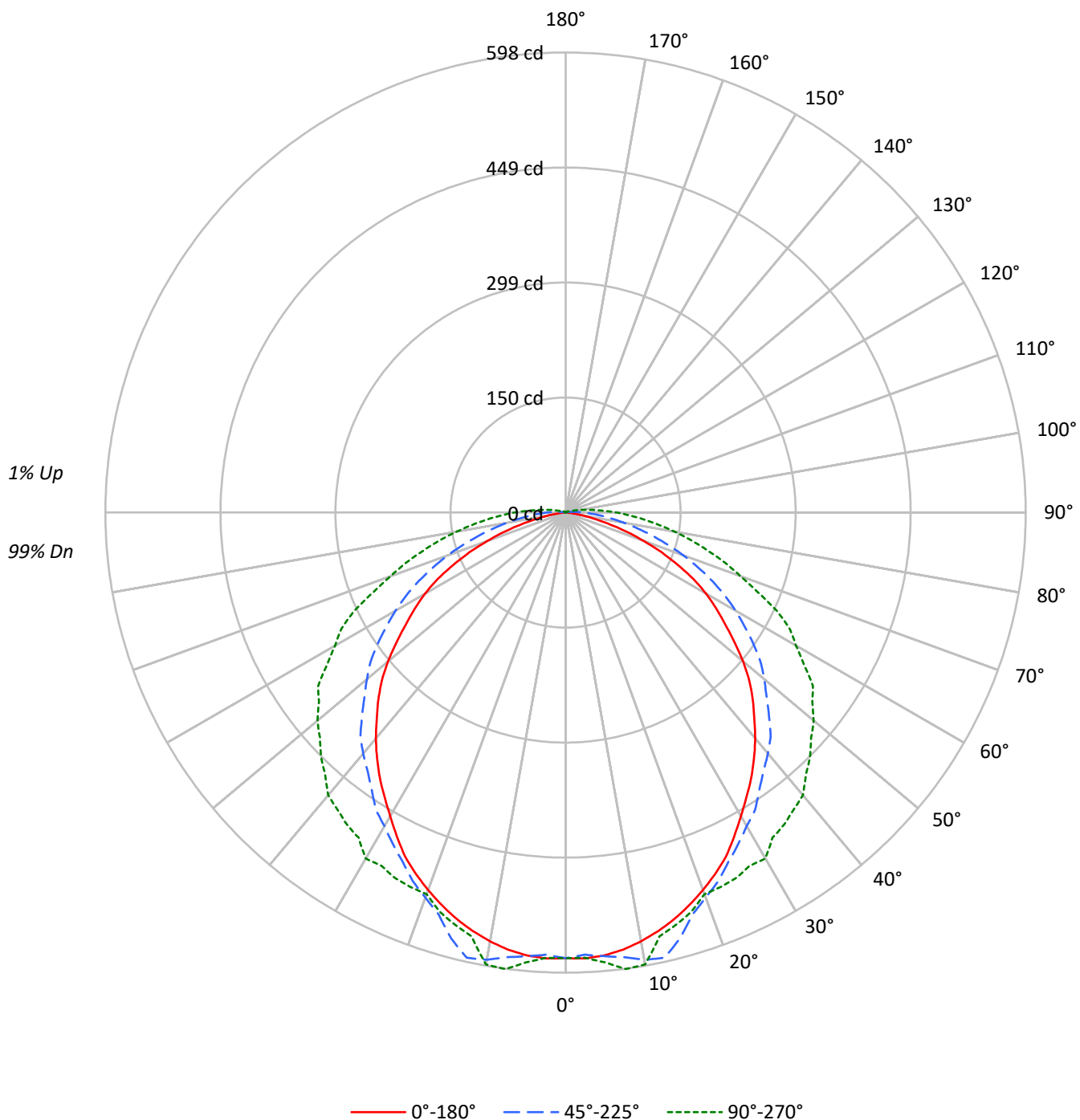
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517808

CATALOG NUMBER: HVL8-1-LD4-2STD-35-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517808

CATALOG NUMBER: HVL8-1-LD4-2STD-35-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°	9352	9352	9352
5°	9230	9144	9307
10°	9011	9198	9365
15°	8751	8885	8691
20°	8458	8262	8312
25°	8154	7845	8365
30°	7748	7501	8457
35°	7429	7174	8306
40°	7091	6913	8359
45°	6732	6594	8207
50°	6316	6263	8145
55°	5759	5910	8141
60°	5292	5452	7792
65°	4514	4921	7545
70°	3507	4257	6766
75°	2334	3482	6176
80°	1166	2712	5545
85°	344	1938	4883

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8207 cd/sqm

TEST NUMBER: P517808

CATALOG NUMBER: HVL8-1-LD4-2STD-35-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.7	3.2
10°-20°	158.5	9.1
20°-30°	235.9	13.5
30°-40°	283.5	16.2
40°-50°	298.5	17.1
50°-60°	276.9	15.9
60°-70°	219.0	12.5
70°-80°	133.8	7.7
80°-90°	58.3	3.3
90°-100°	18.1	1.0
100°-110°	4.1	0.2
110°-120°	1.6	0.1
120°-130°	0.9	0.1
130°-140°	0.2	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°	450.1	25.8
0°-40°	733.6	42.0
0°-60°	1309.0	75.0
0°-90°	1720.0	98.6
90°-120°	23.8	1.4
90°-150°	25.0	1.4
90°-180°	25.0	1.4
0°-180°	1745.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	579	579	579	579	579	
5°	578	577	579	585	587	55
15°	547	568	574	554	555	154
25°	493	525	501	516	524	226
35°	421	433	439	479	495	263
45°	344	346	374	433	449	265
55°	253	258	298	364	392	228
65°	160	165	210	278	303	159
75°	61	80	117	180	191	66
85°	5	19	46	89	102	8
90°	0	6	24	56	66	0
95°	0	1	10	31	38	0
105°	0	1	2	6	8	0
115°	0	0	2	3	3	0
125°	0	0	1	2	2	0
135°	0	0	0	1	1	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: P517808

CATALOG NUMBER: HVL8-1-LD4-2STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	579.2	579.2	579.2	579.2	579.2
2.5°	580.0	578.4	575.2	578.3	579.1
5°	577.8	576.6	578.7	585.1	586.8
7.5°	573.0	577.5	582.8	594.6	598.4
10°	565.8	574.3	590.2	600.2	596.4
12.5°	557.1	571.5	592.8	573.2	564.1
15°	546.9	567.9	573.5	554.5	554.8
17.5°	535.0	565.0	547.9	547.4	544.0
20°	522.1	555.1	532.4	531.5	527.8
22.5°	508.3	542.0	518.7	516.8	526.7
25°	493.3	524.8	500.9	515.9	524.3
27.5°	474.6	502.4	486.0	507.3	517.8
30°	455.6	479.3	470.8	500.4	519.1
32.5°	437.8	455.1	458.3	497.8	500.9
35°	420.9	432.6	439.1	478.9	495.2
37.5°	402.4	405.6	422.8	471.0	486.7
40°	383.5	381.5	409.1	458.1	479.8
42.5°	363.2	362.5	394.6	451.6	462.4
45°	344.0	345.5	373.9	433.2	449.3
47.5°	324.3	326.3	354.3	413.0	433.0
50°	301.4	304.0	336.9	395.1	420.9
52.5°	276.6	281.5	319.9	378.1	404.1
55°	253.3	257.5	298.3	363.5	392.5
57.5°	232.1	234.6	276.0	345.3	367.1
60°	211.2	211.8	255.0	325.0	345.8
62.5°	187.3	188.3	233.4	301.0	329.0
65°	160.4	165.4	210.2	278.1	303.4
67.5°	135.2	144.1	186.4	257.1	270.3
70°	108.3	123.3	163.2	232.5	241.8
72.5°	83.7	101.2	139.4	204.8	217.9
75°	60.7	80.4	117.2	180.1	191.4
77.5°	40.8	60.9	96.4	152.7	167.7
80°	24.4	44.5	77.9	127.3	144.2
82.5°	12.5	29.9	60.4	106.8	121.9
85°	5.4	18.9	45.7	88.6	101.7
87.5°	1.5	10.7	33.6	71.6	82.7
90°	0.1	5.7	24.0	56.2	66.2
92.5°	0.1	2.7	16.9	42.5	50.1
95°	0.1	1.4	10.5	30.8	37.6
97.5°	0.1	0.8	6.4	21.8	27.6
100°	0.1	0.7	3.8	14.5	19.7
102.5°	0.1	0.8	2.6	9.2	12.9
105°	0.1	0.8	2.1	6.0	8.5
107.5°	0.2	0.8	1.9	4.5	5.9
110°	0.1	0.7	2.0	3.4	4.6

TEST NUMBER: P517808

CATALOG NUMBER: HVL8-1-LD4-2STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	1.9	2.8	3.4
115°	0.1	0.5	1.7	2.7	2.8
117.5°	0.2	0.4	1.3	2.7	2.8
120°	0.2	0.2	1.1	2.6	2.9
122.5°	0.2	0.2	0.8	2.4	2.8
125°	0.1	0.2	0.7	1.8	2.5
127.5°	0.2	0.2	0.6	1.4	1.9
130°	0.2	0.2	0.5	1.1	1.4
132.5°	0.2	0.2	0.4	0.8	1.1
135°	0.2	0.2	0.2	0.6	0.8
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)