

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: P518050

Luminaire Tested: HVL8-4-LD4-1STD-35-UNV-O-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: P518050
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1STD-35-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2785.0 lumens
Efficiency: N/A
Efficacy: 85.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

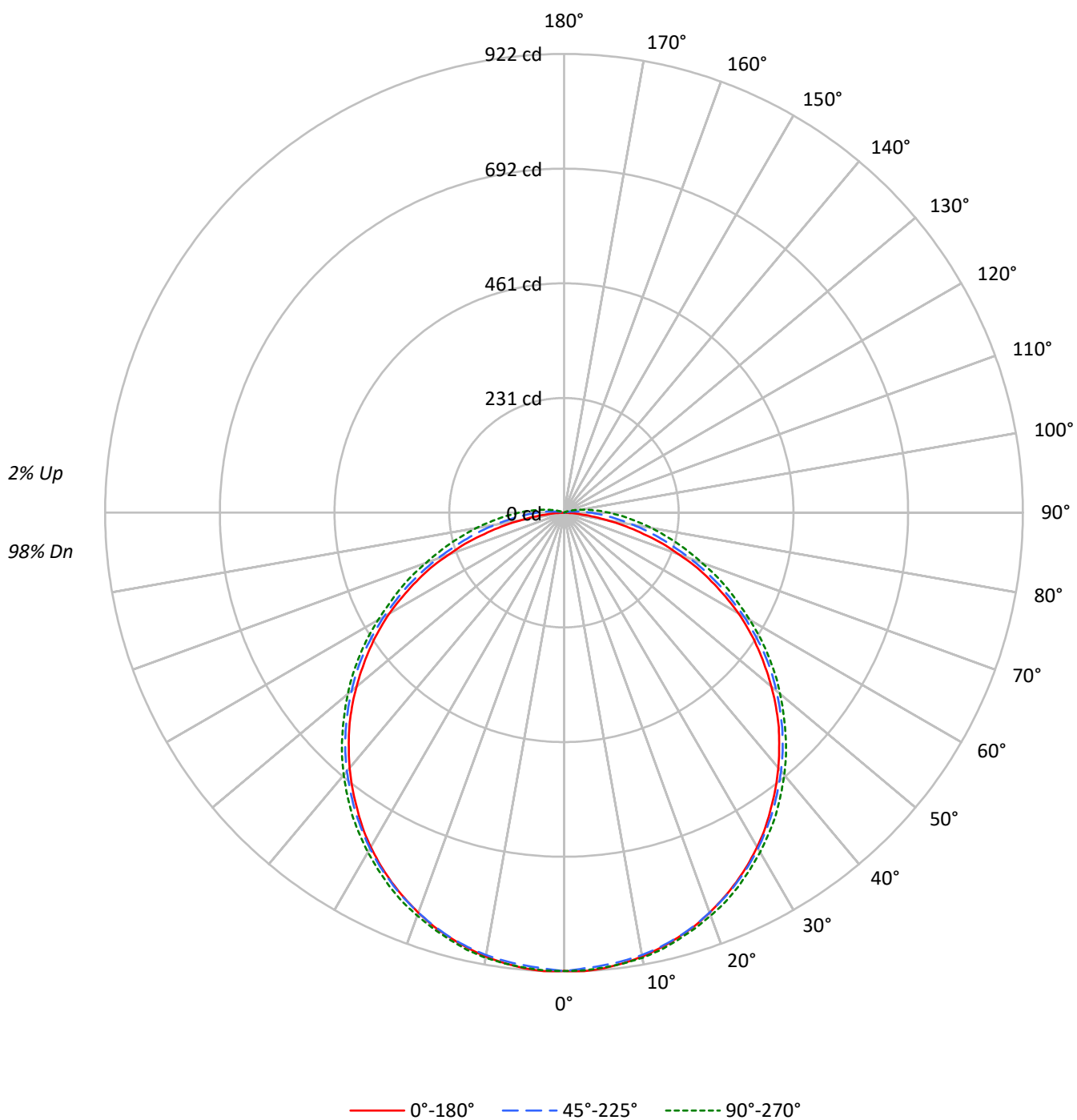
Input Watts (W): 32.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	3718	3718	3718
5°	3711	3635	3638
10°	3686	3570	3566
15°	3654	3498	3478
20°	3620	3417	3393
25°	3579	3335	3307
30°	3532	3247	3209
35°	3472	3150	3112
40°	3411	3048	2998
45°	3344	2937	2876
50°	3257	2809	2744
55°	3163	2667	2599
60°	3051	2485	2429
65°	2869	2281	2261
70°	2607	2040	2066
75°	2236	1776	1889
80°	1683	1517	1726
85°	900	1255	1571

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3344 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.2	3.1
10°-20°	250.0	9.0
20°-30°	379.4	13.6
30°-40°	458.7	16.5
40°-50°	478.6	17.2
50°-60°	437.6	15.7
60°-70°	341.2	12.2
70°-80°	213.4	7.7
80°-90°	96.9	3.5
90°-100°	32.5	1.2
100°-110°	8.2	0.3
110°-120°	1.3	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°	716.6	25.7
0°-40°	1175.3	42.2
0°-60°	2091.6	75.1
0°-90°	2743.1	98.5
90°-120°	42.0	1.5
90°-150°	42.0	1.5
90°-180°	42.0	1.5
0°-180°	2785.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	921	921	921	921	921	
5°	919	917	913	918	918	87
15°	884	886	883	888	888	250
25°	819	820	821	828	829	378
35°	725	728	732	739	742	454
45°	610	616	621	627	630	470
55°	476	482	491	498	501	425
65°	327	333	344	358	364	324
75°	166	176	202	226	234	177
85°	29	53	91	120	131	36
90°	0	20	54	81	90	1
95°	0	5	28	50	58	0
105°	0	1	5	14	18	0
115°	1	1	1	2	4	0
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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	921.1	921.1	921.1	921.1	921.1
2.5°	922.2	920.9	916.8	920.9	920.7
5°	919.2	917.4	913.3	917.6	917.6
7.5°	913.1	912.4	908.7	913.7	913.7
10°	905.9	905.7	902.7	908.1	908.3
12.5°	895.9	896.8	894.0	899.2	899.8
15°	884.2	885.7	883.3	888.3	888.1
17.5°	871.4	872.3	870.5	876.2	875.9
20°	855.5	856.6	855.3	861.2	861.8
22.5°	837.9	839.5	839.2	845.3	847.1
25°	819.3	819.9	820.8	827.7	829.0
27.5°	798.6	799.7	801.2	807.5	808.8
30°	776.1	777.8	779.5	786.0	787.8
32.5°	752.2	753.9	756.1	764.6	765.4
35°	725.2	728.5	731.5	738.9	742.0
37.5°	698.3	702.4	705.3	713.1	715.5
40°	669.9	674.0	678.6	686.8	688.3
42.5°	640.1	644.9	650.3	657.7	660.3
45°	610.2	615.6	620.6	626.7	629.7
47.5°	577.8	583.2	589.3	596.3	598.2
50°	544.4	550.7	557.2	563.7	567.2
52.5°	510.1	517.7	525.0	532.0	535.3
55°	476.2	481.8	490.7	497.9	501.2
57.5°	441.0	445.8	453.8	465.5	467.3
60°	405.2	409.5	417.8	427.3	431.2
62.5°	365.7	371.5	380.2	392.4	395.8
65°	327.2	332.9	344.4	358.1	363.7
67.5°	290.1	292.1	306.8	321.2	330.3
70°	246.2	253.6	270.8	288.4	295.3
72.5°	208.5	215.8	234.7	255.4	264.0
75°	165.7	175.9	201.5	225.6	234.1
77.5°	128.1	139.4	171.1	195.4	205.2
80°	89.5	107.1	141.6	168.9	179.6
82.5°	56.2	78.0	114.9	143.5	152.9
85°	28.7	53.0	91.0	120.3	130.9
87.5°	7.6	34.3	70.8	98.8	109.7
90°	0.2	19.8	53.6	80.6	90.3
92.5°	0.2	11.1	40.0	64.1	74.0
95°	0.2	5.2	27.8	50.4	58.2
97.5°	0.2	2.2	19.1	38.0	45.8
100°	0.2	1.1	12.2	27.6	34.3
102.5°	0.4	0.7	7.6	19.8	25.2
105°	0.4	0.7	4.6	13.5	18.0
107.5°	0.4	0.7	2.6	9.1	12.4
110°	0.7	0.7	1.5	5.6	8.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	0.7	0.9	3.7	5.4
115°	0.7	0.7	0.9	2.4	3.5
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)