

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: P517845

Luminaire Tested: HVL8-1-LD4-3LO-40-UNV-O-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: P517845
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3LO-40-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1954.0 lumens
Efficiency: N/A
Efficacy: 116.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

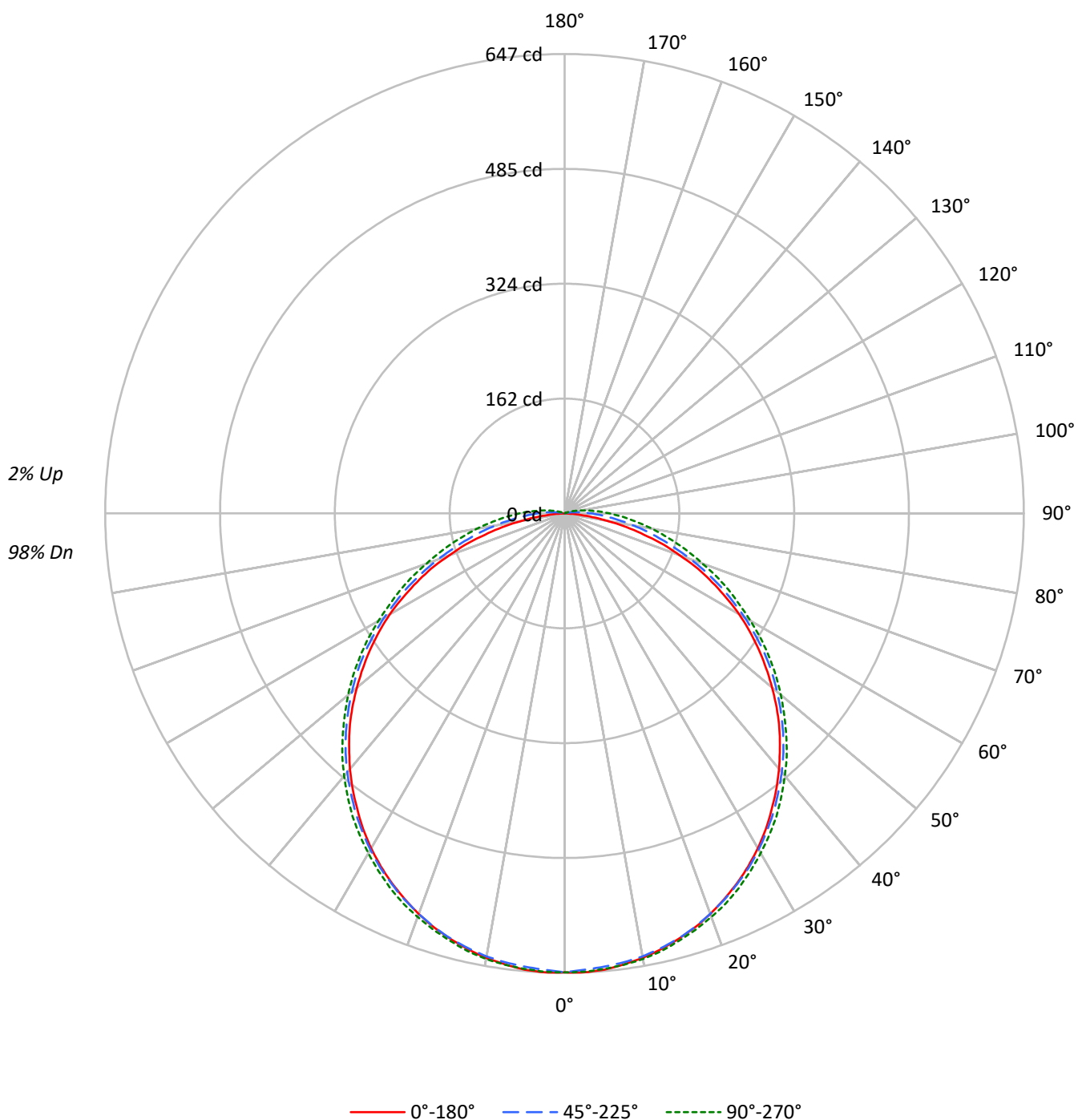
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10435	10435	10435
5°	10302	10125	10211
10°	10123	9870	10007
15°	9927	9602	9761
20°	9724	9312	9523
25°	9501	9020	9281
30°	9260	8714	9004
35°	8980	8387	8732
40°	8691	8045	8413
45°	8378	7679	8070
50°	8003	7267	7700
55°	7596	6821	7293
60°	7124	6266	6818
65°	6462	5656	6347
70°	5595	4956	5798
75°	4469	4201	5299
80°	3002	3456	4845
85°	1282	2706	4413

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8378 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.2	3.1
10°-20°	175.4	9.0
20°-30°	266.2	13.6
30°-40°	321.8	16.5
40°-50°	335.8	17.2
50°-60°	307.0	15.7
60°-70°	239.4	12.2
70°-80°	149.7	7.7
80°-90°	68.0	3.5
90°-100°	22.8	1.2
100°-110°	5.7	0.3
110°-120°	0.9	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°	502.8	25.7
0°-40°	824.6	42.2
0°-60°	1467.5	75.1
0°-90°	1924.6	98.5
90°-120°	29.4	1.5
90°-150°	29.4	1.5
90°-180°	29.0	1.5
0°-180°	1954.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	646	646	646	646	646	
5°	645	644	641	644	644	61
15°	620	621	620	623	623	175
25°	575	575	576	581	582	265
35°	509	511	513	518	521	318
45°	428	432	435	440	442	330
55°	334	338	344	349	352	298
65°	230	234	242	251	255	227
75°	116	123	141	158	164	124
85°	20	37	64	84	92	25
90°	0	14	38	56	63	1
95°	0	4	20	35	41	0
105°	0	0	3	9	13	0
115°	0	0	1	2	2	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°	646.3	646.3	646.3	646.3	646.3
2.5°	647.0	646.1	643.2	646.1	646.0
5°	644.9	643.7	640.8	643.8	643.8
7.5°	640.6	640.2	637.6	641.1	641.1
10°	635.6	635.4	633.3	637.1	637.3
12.5°	628.6	629.2	627.2	630.9	631.3
15°	620.4	621.4	619.8	623.3	623.1
17.5°	611.4	612.0	610.8	614.7	614.6
20°	600.3	601.0	600.1	604.2	604.7
22.5°	587.9	589.0	588.8	593.1	594.3
25°	574.8	575.3	575.9	580.8	581.7
27.5°	560.3	561.1	562.2	566.6	567.5
30°	544.5	545.7	546.9	551.5	552.7
32.5°	527.7	529.0	530.5	536.4	537.0
35°	508.8	511.1	513.3	518.4	520.6
37.5°	490.0	492.8	494.8	500.3	502.0
40°	470.0	472.9	476.1	481.9	482.9
42.5°	449.1	452.5	456.3	461.5	463.3
45°	428.1	431.9	435.4	439.7	441.8
47.5°	405.4	409.2	413.5	418.4	419.7
50°	381.9	386.4	390.9	395.5	397.9
52.5°	357.9	363.2	368.4	373.3	375.5
55°	334.1	338.1	344.3	349.3	351.6
57.5°	309.4	312.8	318.4	326.6	327.9
60°	284.3	287.3	293.1	299.8	302.6
62.5°	256.6	260.7	266.8	275.3	277.7
65°	229.6	233.6	241.6	251.2	255.2
67.5°	203.5	204.9	215.3	225.3	231.7
70°	172.8	177.9	190.0	202.3	207.2
72.5°	146.3	151.4	164.7	179.2	185.3
75°	116.2	123.4	141.4	158.3	164.2
77.5°	89.9	97.8	120.1	137.1	144.0
80°	62.8	75.1	99.3	118.5	126.0
82.5°	39.5	54.7	80.6	100.7	107.3
85°	20.1	37.2	63.8	84.4	91.9
87.5°	5.3	24.1	49.7	69.3	76.9
90°	0.2	13.9	37.6	56.5	63.4
92.5°	0.2	7.8	28.0	44.9	52.0
95°	0.2	3.7	19.5	35.3	40.8
97.5°	0.2	1.5	13.4	26.7	32.1
100°	0.2	0.8	8.5	19.3	24.1
102.5°	0.3	0.5	5.3	13.9	17.7
105°	0.3	0.5	3.2	9.4	12.6
107.5°	0.3	0.5	1.8	6.4	8.7
110°	0.5	0.5	1.1	4.0	5.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.6	2.6	3.8
115°	0.5	0.5	0.6	1.7	2.4
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)