

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: P518118

Luminaire Tested: HVL8-4-LD4-3HI-40-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: P518118
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3HI-40-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

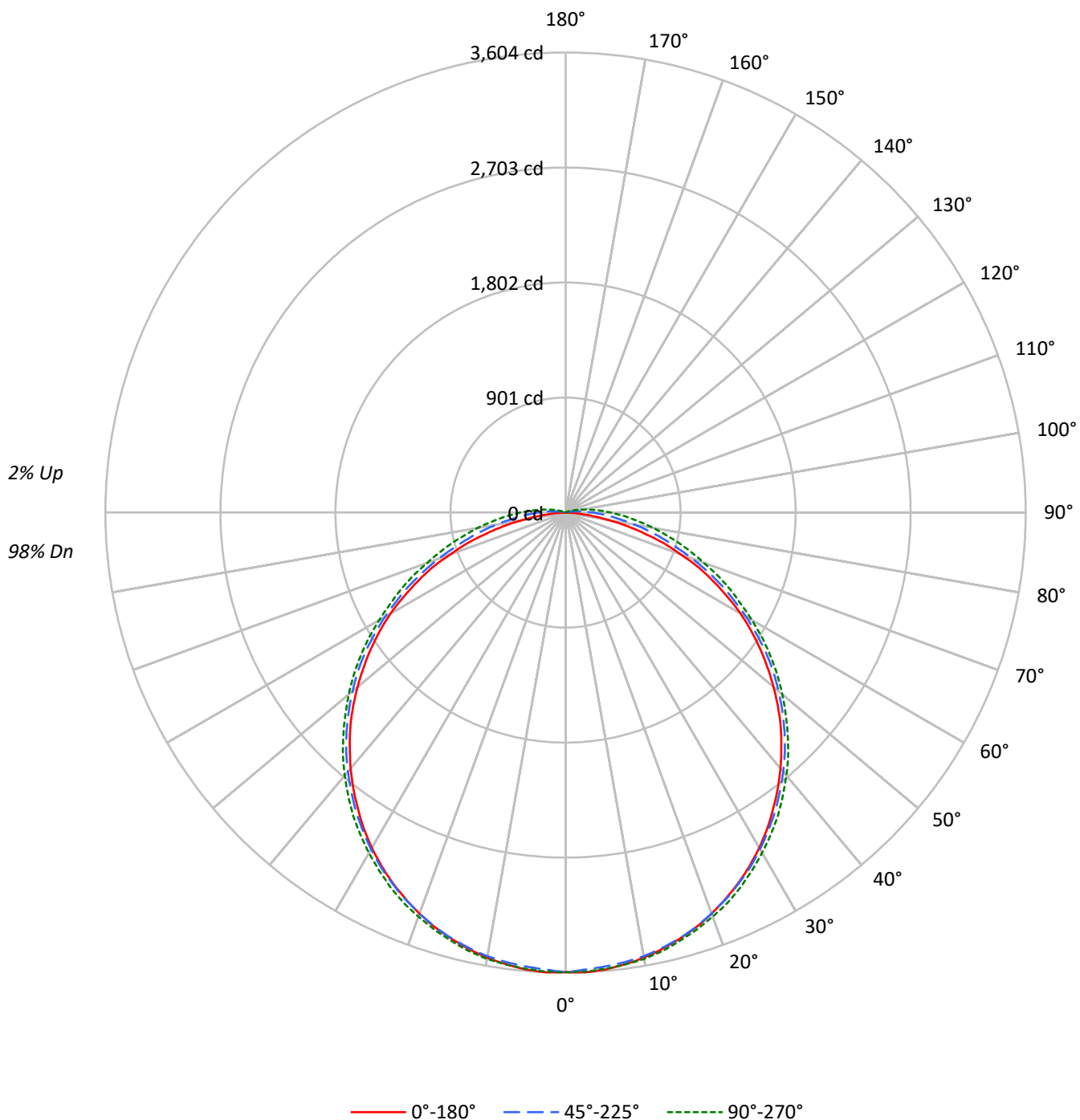
Lumens per Lamp: N/A
Luminaire Lumens: 10885.0 lumens
Efficiency: N/A
Efficacy: 86.5 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 125.9
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°	14532	14532	14532
5°	14504	14207	14221
10°	14407	13953	13936
15°	14282	13671	13594
20°	14149	13357	13262
25°	13989	13034	12924
30°	13805	12690	12541
35°	13572	12311	12160
40°	13330	11913	11717
45°	13069	11478	11239
50°	12728	10977	10725
55°	12362	10426	10157
60°	11924	9712	9495
65°	11214	8913	8838
70°	10191	7972	8074
75°	8739	6940	7381
80°	6575	5927	6747
85°	3513	4905	6144

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 13069 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	340.7	3.1
10°-20°	977.2	9.0
20°-30°	1482.8	13.6
30°-40°	1792.9	16.5
40°-50°	1870.8	17.2
50°-60°	1710.5	15.7
60°-70°	1333.4	12.2
70°-80°	834.1	7.7
80°-90°	378.9	3.5
90°-100°	127.0	1.2
100°-110°	31.8	0.3
110°-120°	5.0	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°	2800.7	25.7
0°-40°	4593.6	42.2
0°-60°	8174.8	75.1
0°-90°	10721.2	98.5
90°-120°	163.8	1.5
90°-150°	163.8	1.5
90°-180°	164.0	1.5
0°-180°	10885.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3600	3600	3600	3600	3600	
5°	3592	3586	3570	3586	3586	341
15°	3456	3462	3452	3472	3471	976
25°	3202	3205	3208	3235	3240	1475
35°	2835	2847	2859	2888	2900	1774
45°	2385	2406	2426	2449	2461	1838
55°	1861	1883	1918	1946	1959	1663
65°	1279	1301	1346	1400	1422	1265
75°	648	687	788	882	915	690
85°	112	207	356	470	512	142
90°	1	77	210	315	353	4
95°	1	20	109	197	227	1
105°	2	2	18	53	70	2
115°	2	2	3	9	14	2
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°	3600.1	3600.1	3600.1	3600.1	3600.1
2.5°	3604.3	3599.3	3583.1	3599.3	3598.4
5°	3592.5	3585.7	3569.5	3586.5	3586.5
7.5°	3568.7	3566.2	3551.7	3571.2	3571.2
10°	3540.7	3539.8	3528.0	3549.2	3550.0
12.5°	3501.7	3505.0	3494.0	3514.4	3516.9
15°	3455.8	3461.8	3452.4	3471.9	3471.1
17.5°	3405.8	3409.1	3402.4	3424.4	3423.6
20°	3343.8	3348.0	3343.0	3365.9	3368.4
22.5°	3275.1	3281.0	3280.1	3303.9	3310.7
25°	3202.1	3204.6	3208.0	3235.2	3240.3
27.5°	3121.4	3125.7	3131.6	3156.2	3161.3
30°	3033.2	3040.0	3046.8	3072.2	3079.0
32.5°	2939.8	2946.6	2955.1	2988.2	2991.6
35°	2834.6	2847.3	2859.2	2888.1	2899.9
37.5°	2729.4	2745.5	2756.5	2787.1	2796.4
40°	2618.2	2634.3	2652.1	2684.4	2690.3
42.5°	2501.9	2520.6	2541.8	2570.7	2580.8
45°	2384.8	2406.0	2425.5	2449.3	2461.2
47.5°	2258.3	2279.6	2303.3	2330.5	2338.1
50°	2127.6	2152.3	2177.7	2203.2	2216.8
52.5°	1993.5	2023.3	2052.1	2079.3	2092.0
55°	1861.2	1883.2	1918.0	1946.0	1958.8
57.5°	1723.7	1742.3	1773.7	1819.6	1826.4
60°	1583.6	1600.6	1632.9	1670.2	1685.5
62.5°	1429.2	1452.1	1486.0	1533.6	1547.1
65°	1279.0	1301.0	1346.0	1399.5	1421.5
67.5°	1133.8	1141.5	1199.2	1255.2	1290.8
70°	962.4	991.3	1058.3	1127.0	1154.2
72.5°	814.7	843.6	917.4	998.0	1032.0
75°	647.5	687.4	787.6	881.8	914.9
77.5°	500.7	544.9	668.8	763.8	802.0
80°	349.7	418.4	553.3	660.3	701.9
82.5°	219.8	304.7	449.0	561.0	597.5
85°	112.0	207.1	355.6	470.2	511.8
87.5°	29.7	134.1	276.7	386.1	428.6
90°	0.8	77.2	209.6	314.9	353.1
92.5°	0.8	43.3	156.2	250.4	289.4
95°	0.8	20.4	108.6	196.9	227.4
97.5°	0.8	8.5	74.7	148.5	179.1
100°	0.8	4.2	47.5	107.8	134.1
102.5°	1.7	2.5	29.7	77.2	98.4
105°	1.7	2.5	17.8	52.6	70.4
107.5°	1.7	2.5	10.2	35.6	48.4
110°	2.5	2.5	5.9	22.1	32.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.5	2.5	3.4	14.4	21.2
115°	2.5	2.5	3.4	9.3	13.6
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)