

Scaled data based on original data using
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: P560832

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-81-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560832
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)
Test Lab: INNOVATION CENTER
Issue Date: 7/20/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-12-4-LD4-1HI-40-UNV-81-84-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3284.0 lumens
Efficiency: N/A
Efficacy: 76.0 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

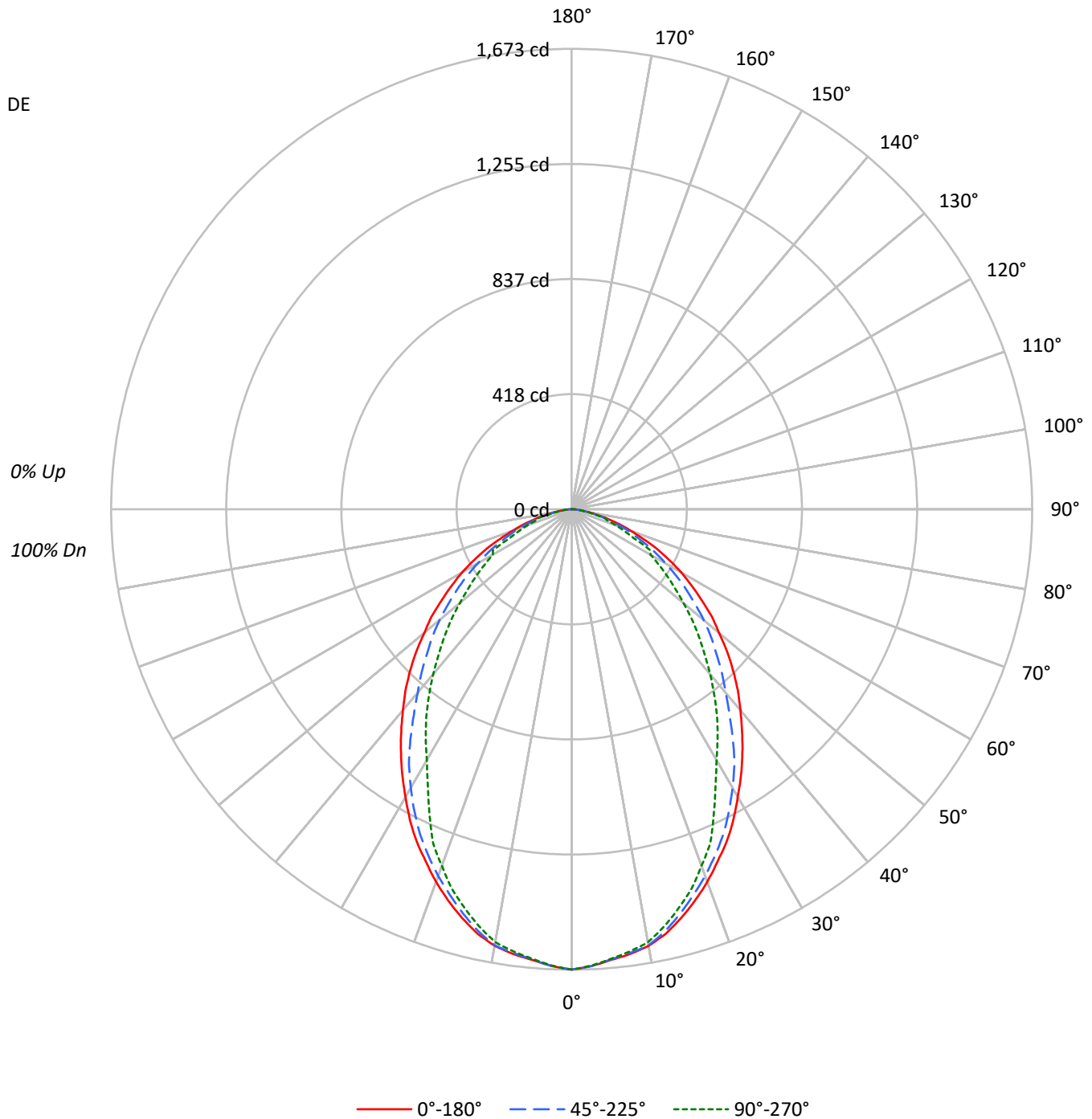
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4501	4501	4501
5°	4440	4435	4430
10°	4402	4397	4365
15°	4283	4240	4181
20°	4126	4060	3949
25°	3956	3870	3629
30°	3750	3630	3269
35°	3551	3354	3024
40°	3349	3057	2751
45°	3157	2826	2488
50°	2923	2623	2218
55°	2704	2377	1987
60°	2477	2123	1780
65°	2180	1859	1576
70°	1795	1628	1339
75°	1428	1247	1307
80°	959	899	838
85°	596	716	837

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3157 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.7	4.7
10°-20°	427.4	13.0
20°-30°	591.6	18.0
30°-40°	630.9	19.2
40°-50°	575.5	17.5
50°-60°	450.9	13.7
60°-70°	293.9	8.9
70°-80°	130.2	4.0
80°-90°	27.9	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	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°	1174.7	35.8
0°-40°	1805.6	55.0
0°-60°	2832.0	86.2
0°-90°	3284.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3284.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1673	1673	1673	1673	1673	
5°	1644	1642	1642	1640	1640	156
15°	1538	1538	1522	1506	1501	432
25°	1332	1325	1304	1257	1222	612
35°	1081	1073	1021	944	920	676
45°	830	812	743	681	654	639
55°	576	559	507	447	424	517
65°	342	323	292	298	248	337
75°	137	128	120	114	126	147
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1672.8	1672.8	1672.8	1672.8	1672.8
2.5°	1661.2	1661.2	1661.2	1659.3	1659.3
5°	1643.8	1641.9	1641.9	1639.9	1639.9
7.5°	1630.3	1628.3	1626.4	1624.5	1620.6
10°	1610.9	1610.9	1609.0	1599.3	1597.4
12.5°	1580.0	1578.1	1570.3	1556.8	1552.9
15°	1537.5	1537.5	1522.0	1506.5	1500.7
17.5°	1491.0	1489.1	1469.8	1454.3	1446.6
20°	1440.8	1436.9	1417.6	1392.4	1378.9
22.5°	1384.7	1384.7	1361.5	1328.6	1315.1
25°	1332.5	1324.7	1303.5	1257.0	1222.2
27.5°	1272.5	1260.9	1237.7	1171.9	1131.3
30°	1206.8	1201.0	1168.1	1083.0	1052.0
32.5°	1144.9	1135.2	1100.4	1011.4	986.3
35°	1081.1	1073.3	1021.1	943.7	920.5
37.5°	1017.2	1007.6	941.8	879.9	850.9
40°	953.4	941.8	870.3	814.2	783.2
42.5°	893.5	878.0	808.4	748.4	713.6
45°	829.6	812.2	742.6	680.7	653.7
47.5°	765.8	750.4	686.5	622.7	591.8
50°	698.1	684.6	626.6	562.8	529.9
52.5°	642.1	620.8	564.7	500.9	473.8
55°	576.3	558.9	506.7	446.7	423.5
57.5°	516.4	498.9	450.6	394.5	375.2
60°	460.3	435.1	394.5	346.2	330.7
62.5°	398.4	379.0	344.2	303.6	323.0
65°	342.3	323.0	292.0	297.8	247.5
67.5°	280.4	270.7	243.7	216.6	208.9
70°	228.2	216.6	206.9	177.9	170.2
72.5°	181.8	170.2	156.6	141.2	135.4
75°	137.3	127.6	119.9	114.1	125.7
77.5°	94.8	90.9	85.1	79.3	77.4
80°	61.9	60.0	58.0	56.1	54.1
82.5°	36.7	36.7	36.7	36.7	36.7
85°	19.3	21.3	23.2	25.1	27.1
87.5°	11.6	11.6	13.5	15.5	17.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)