

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: P564161

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564161  
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-24-4-LD4-4STD-50-UNV-81-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

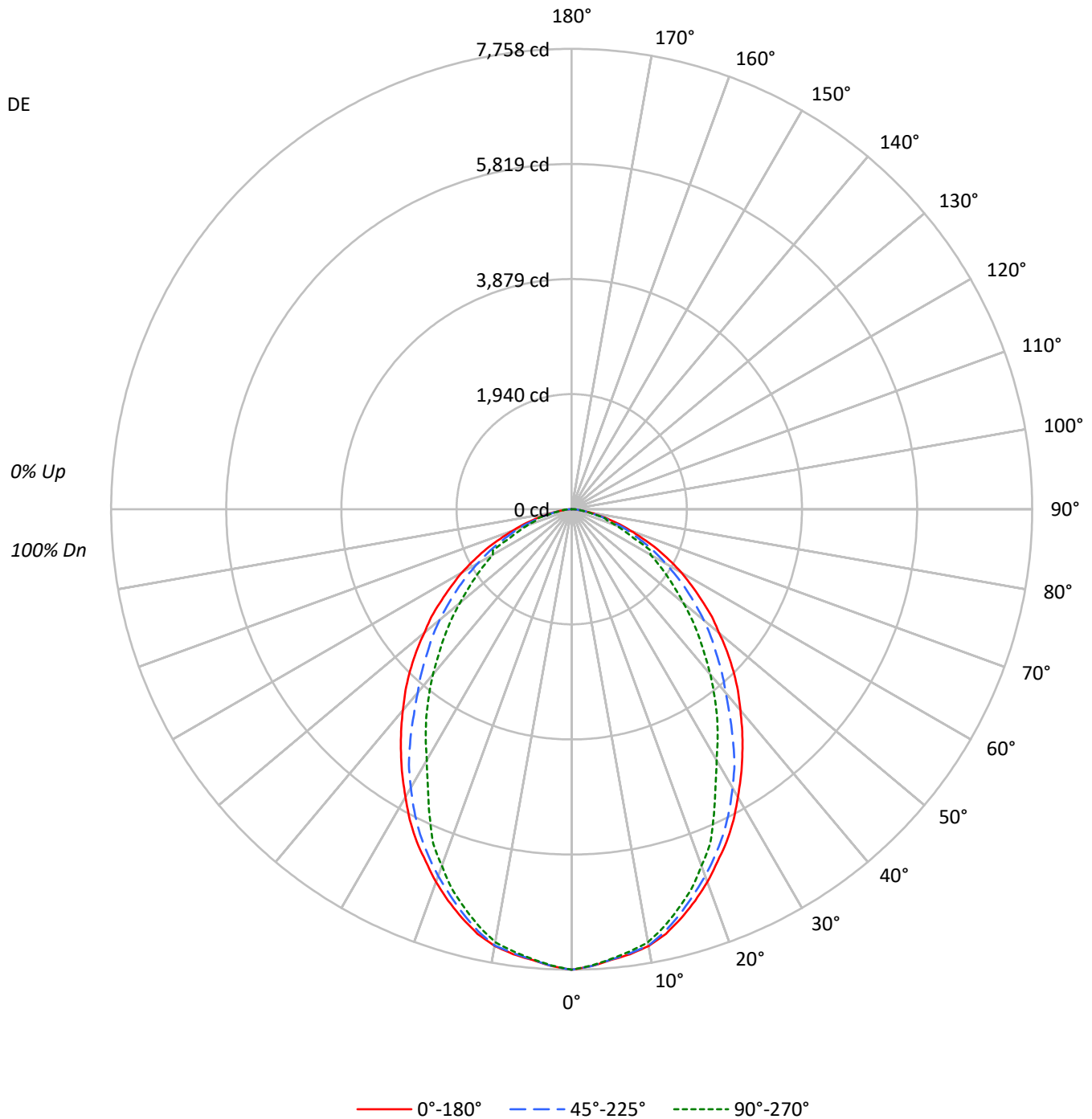
Lumens per Lamp: N/A  
Luminaire Lumens: 15231.0 lumens  
Efficiency: N/A  
Efficacy: 114.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	50	30	10	0																
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100									100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10439	10439	10439
5°	10297	10285	10273
10°	10208	10196	10122
15°	9933	9833	9695
20°	9568	9414	9157
25°	9175	8975	8416
30°	8696	8417	7581
35°	8236	7779	7013
40°	7767	7089	6380
45°	7322	6554	5769
50°	6778	6083	5144
55°	6270	5513	4608
60°	5744	4924	4127
65°	5054	4312	3655
70°	4164	3775	3105
75°	3310	2891	3031
80°	2224	2085	1946
85°	1385	1661	1939

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7322 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	722.2	4.7
10°-20°	1982.0	13.0
20°-30°	2744.0	18.0
30°-40°	2925.9	19.2
40°-50°	2669.3	17.5
50°-60°	2091.2	13.7
60°-70°	1362.9	8.9
70°-80°	603.8	4.0
80°-90°	129.6	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°	5448.3	35.8
0°-40°	8374.2	55.0
0°-60°	13134.6	86.2
0°-90°	15231.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15231.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7758	7758	7758	7758	7758	
5°	7624	7615	7615	7606	7606	724
15°	7131	7131	7059	6987	6960	2005
25°	6180	6144	6045	5830	5669	2837
35°	5014	4978	4736	4377	4269	3135
45°	3848	3767	3444	3157	3032	2964
55°	2673	2592	2350	2072	1964	2397
65°	1588	1498	1354	1381	1148	1565
75°	637	592	556	529	583	683
85°	90	99	108	117	126	124
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7758.5	7758.5	7758.5	7758.5	7758.5
2.5°	7704.7	7704.7	7704.7	7695.7	7695.7
5°	7623.9	7615.0	7615.0	7606.0	7606.0
7.5°	7561.1	7552.2	7543.2	7534.2	7516.3
10°	7471.4	7471.4	7462.5	7417.6	7408.7
12.5°	7327.9	7319.0	7283.1	7220.3	7202.4
15°	7130.6	7130.6	7058.9	6987.1	6960.2
17.5°	6915.4	6906.4	6816.7	6744.9	6709.1
20°	6682.1	6664.2	6574.5	6457.9	6395.1
22.5°	6422.0	6422.0	6314.4	6161.9	6099.1
25°	6179.9	6144.0	6045.3	5830.1	5668.6
27.5°	5901.8	5848.0	5740.4	5435.4	5247.1
30°	5596.9	5570.0	5417.5	5022.8	4879.3
32.5°	5309.8	5265.0	5103.5	4691.0	4574.4
35°	5013.9	4978.0	4735.8	4377.0	4269.4
37.5°	4717.9	4673.0	4368.1	4081.0	3946.5
40°	4421.9	4368.1	4036.2	3776.1	3632.6
42.5°	4143.8	4072.1	3749.2	3471.1	3309.7
45°	3847.8	3767.1	3444.2	3157.2	3031.6
47.5°	3551.9	3480.1	3184.1	2888.1	2744.6
50°	3237.9	3175.1	2906.1	2610.1	2457.6
52.5°	2977.8	2879.2	2619.0	2323.1	2197.5
55°	2672.9	2592.1	2350.0	2071.9	1964.3
57.5°	2394.8	2314.1	2089.9	1829.7	1740.0
60°	2134.7	2018.1	1829.7	1605.5	1533.8
62.5°	1847.7	1758.0	1596.5	1408.2	1497.9
65°	1587.6	1497.9	1354.4	1381.3	1148.1
67.5°	1300.6	1255.7	1130.1	1004.6	968.7
70°	1058.4	1004.6	959.7	825.2	789.3
72.5°	843.1	789.3	726.5	654.8	627.9
75°	636.8	592.0	556.1	529.2	583.0
77.5°	439.5	421.6	394.7	367.7	358.8
80°	287.0	278.0	269.1	260.1	251.1
82.5°	170.4	170.4	170.4	170.4	170.4
85°	89.7	98.7	107.6	116.6	125.6
87.5°	53.8	53.8	62.8	71.8	80.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)