

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P311554

Luminaire Tested: **24FCZ2-50HE-UNV-L82765-S-CP187-W2A-U-3500K**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Test Information

Test Method: LM-79-08
Report Number: P311554
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-50HE-UNV-L82765-S-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3500K TUNABLE CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment:

<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
AS-5443-2	Good	REFLECTOR
AS-5443-3	Good	DRIVER
AS-5443-4	Good	UPPER MODULE
AS-5443-5	Good	LENS
AS-5443-6	Good	DRIVER 2
AS-5443-7	Good	TRIM RING

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4413.0 lumens
Efficiency: N/A
Efficacy: 114.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

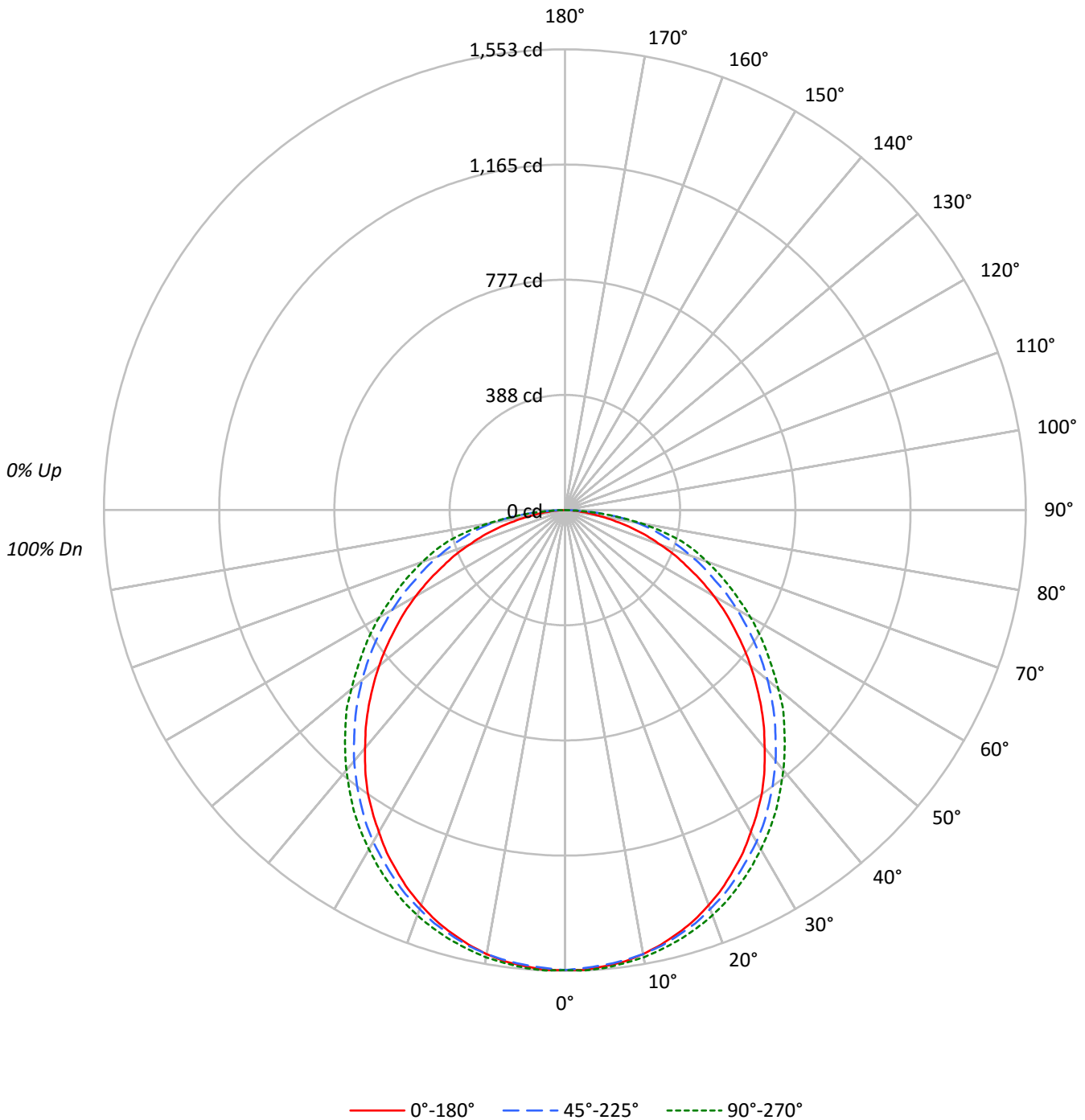
Input Watts (W): 38.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2086	2086	2086
5°	2084	2079	2092
10°	2076	2076	2091
15°	2056	2066	2087
20°	2029	2049	2081
25°	1992	2029	2068
30°	1947	2006	2051
35°	1904	1973	2035
40°	1839	1940	2011
45°	1779	1902	1990
50°	1711	1866	1966
55°	1634	1832	1947
60°	1558	1803	1943
65°	1459	1772	1955
70°	1351	1781	2007
75°	1210	1814	2120
80°	978	1922	2074
85°	736	1687	1644



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.8	3.3
10°-20°	419.4	9.5
20°-30°	630.4	14.3
30°-40°	750.9	17.0
40°-50°	768.5	17.4
50°-60°	691.9	15.7
60°-70°	543.4	12.3
70°-80°	352.7	8.0
80°-90°	109.0	2.5
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°	1196.6	27.1
0°-40°	1947.5	44.1
0°-60°	3407.9	77.2
0°-90°	4413.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4413.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1550	1550	1550	1550	1550	
5°	1543	1546	1539	1548	1549	147
15°	1476	1480	1483	1496	1498	416
25°	1342	1353	1367	1389	1393	618
35°	1159	1173	1201	1231	1239	723
45°	935	957	999	1037	1046	721
55°	697	728	781	821	830	625
65°	458	493	556	603	614	456
75°	233	278	349	397	408	246
85°	48	88	109	106	106	58
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1550.3	1550.3	1550.3	1550.3	1550.3
2.5°	1551.7	1551.7	1544.7	1551.7	1553.1
5°	1543.3	1546.1	1539.1	1547.5	1548.9
7.5°	1534.9	1534.9	1530.7	1539.1	1540.5
10°	1519.5	1520.9	1519.5	1529.3	1530.7
12.5°	1499.9	1502.7	1504.1	1513.9	1515.3
15°	1476.0	1480.2	1483.0	1495.6	1498.5
17.5°	1449.4	1453.6	1460.6	1474.6	1477.4
20°	1417.2	1422.8	1431.2	1449.4	1453.6
22.5°	1382.1	1387.7	1401.7	1418.6	1425.6
25°	1341.5	1352.7	1366.7	1389.1	1393.3
27.5°	1300.8	1310.6	1328.8	1352.7	1358.3
30°	1253.1	1268.6	1291.0	1314.8	1320.4
32.5°	1206.9	1222.3	1248.9	1274.2	1281.2
35°	1159.2	1173.2	1201.3	1230.7	1239.1
37.5°	1104.6	1122.8	1153.6	1183.1	1191.5
40°	1047.1	1069.5	1104.6	1135.4	1145.2
42.5°	992.4	1016.3	1051.3	1084.9	1096.2
45°	935.0	957.4	999.4	1037.3	1045.7
47.5°	876.1	901.3	946.2	984.0	998.0
50°	817.2	843.8	891.5	930.8	939.2
52.5°	758.3	786.4	836.8	878.9	883.1
55°	696.7	727.5	780.8	821.4	829.8
57.5°	640.6	667.2	724.7	766.7	776.6
60°	578.9	608.4	670.0	709.3	721.9
62.5°	520.0	550.9	615.4	654.6	665.8
65°	458.4	493.4	556.5	602.7	614.0
67.5°	405.1	438.7	506.0	550.9	562.1
70°	343.4	381.3	452.8	499.0	510.2
72.5°	290.2	329.4	400.9	445.8	462.6
75°	232.7	277.5	349.0	396.7	407.9
77.5°	176.6	228.5	301.4	337.8	337.8
80°	126.2	180.8	248.1	264.9	267.7
82.5°	82.7	136.0	183.6	182.2	182.2
85°	47.7	88.3	109.3	106.5	106.5
87.5°	18.2	36.4	39.2	39.2	37.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)