

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: P311419

Luminaire Tested: **24FCZ2-40-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: P311419
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: 24FCZ2-40-UNV-L82765-S-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (168) 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: 3554.0 lumens
Efficiency: N/A
Efficacy: 108.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

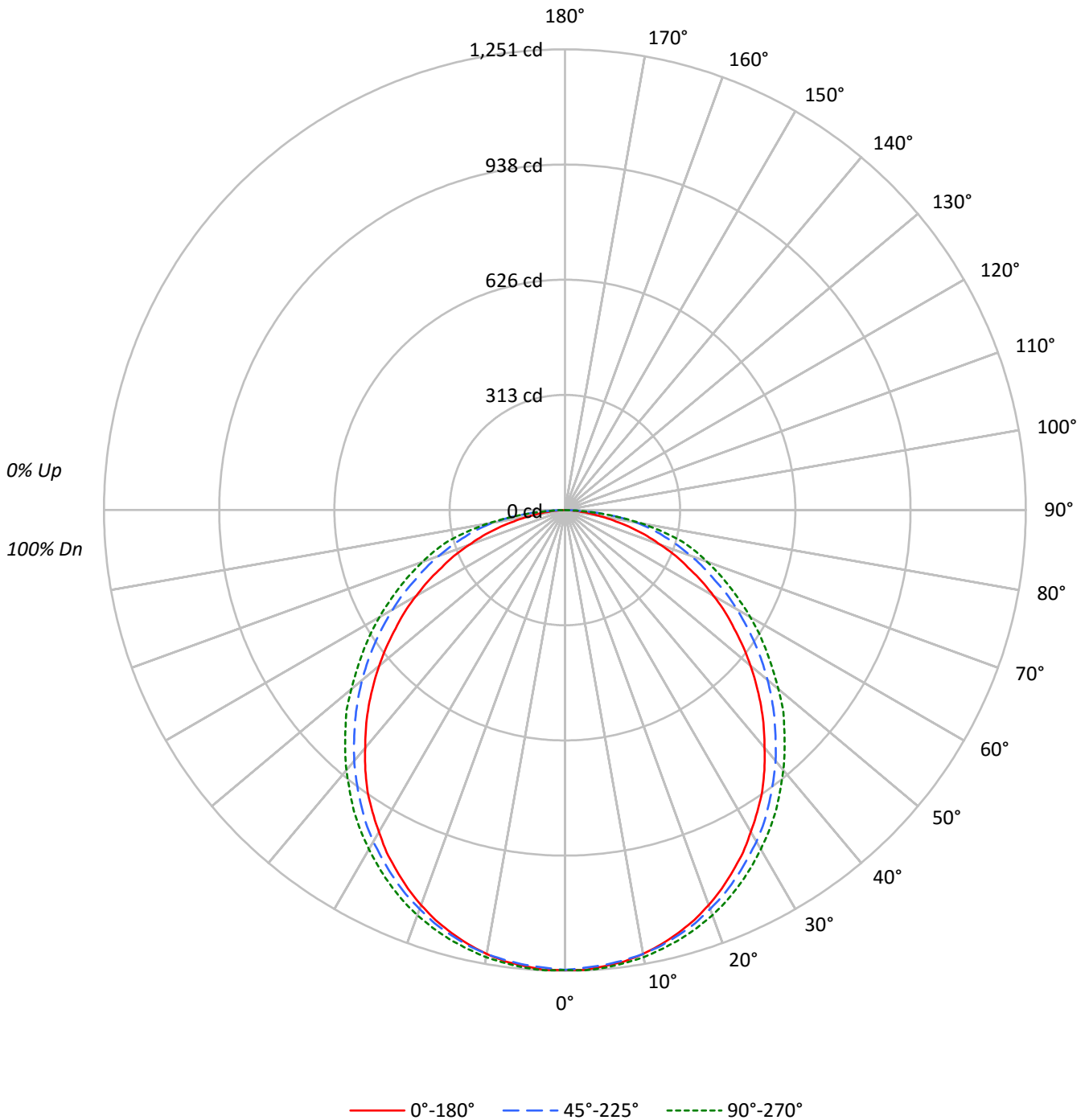
Input Watts (W): 32.9
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1680	1680	1680
5°	1679	1674	1685
10°	1672	1672	1684
15°	1656	1664	1681
20°	1634	1650	1676
25°	1604	1634	1666
30°	1568	1615	1652
35°	1533	1589	1639
40°	1481	1563	1620
45°	1433	1532	1602
50°	1378	1503	1583
55°	1316	1475	1568
60°	1255	1452	1565
65°	1175	1427	1574
70°	1088	1434	1616
75°	974	1461	1708
80°	787	1548	1671
85°	593	1360	1325



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.2	3.3
10°-20°	337.7	9.5
20°-30°	507.7	14.3
30°-40°	604.8	17.0
40°-50°	618.9	17.4
50°-60°	557.2	15.7
60°-70°	437.6	12.3
70°-80°	284.0	8.0
80°-90°	87.9	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°	963.6	27.1
0°-40°	1568.4	44.1
0°-60°	2744.6	77.2
0°-90°	3554.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3554.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1248	1248	1248	1248	1248	
5°	1243	1245	1240	1246	1247	118
15°	1189	1192	1194	1204	1207	335
25°	1080	1089	1101	1119	1122	498
35°	934	945	968	991	998	582
45°	753	771	805	835	842	581
55°	561	586	629	662	668	503
65°	369	397	448	485	494	367
75°	187	224	281	320	328	198
85°	38	71	88	86	86	46
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1248.5	1248.5	1248.5	1248.5	1248.5
2.5°	1249.7	1249.7	1244.0	1249.7	1250.8
5°	1242.9	1245.2	1239.5	1246.3	1247.4
7.5°	1236.1	1236.1	1232.7	1239.5	1240.6
10°	1223.7	1224.8	1223.7	1231.6	1232.7
12.5°	1207.9	1210.2	1211.3	1219.2	1220.3
15°	1188.7	1192.1	1194.4	1204.5	1206.8
17.5°	1167.3	1170.7	1176.3	1187.6	1189.8
20°	1141.3	1145.8	1152.6	1167.3	1170.7
22.5°	1113.1	1117.6	1128.9	1142.4	1148.1
25°	1080.3	1089.4	1100.7	1118.7	1122.1
27.5°	1047.6	1055.5	1070.2	1089.4	1093.9
30°	1009.2	1021.6	1039.7	1058.9	1063.4
32.5°	972.0	984.4	1005.8	1026.2	1031.8
35°	933.6	944.9	967.5	991.2	997.9
37.5°	889.6	904.2	929.1	952.8	959.5
40°	843.3	861.3	889.6	914.4	922.3
42.5°	799.2	818.4	846.7	873.8	882.8
45°	753.0	771.0	804.9	835.4	842.1
47.5°	705.6	725.9	762.0	792.5	803.8
50°	658.1	679.6	718.0	749.6	756.4
52.5°	610.7	633.3	673.9	707.8	711.2
55°	561.1	585.9	628.8	661.5	668.3
57.5°	515.9	537.3	583.6	617.5	625.4
60°	466.2	489.9	539.6	571.2	581.4
62.5°	418.8	443.7	495.6	527.2	536.2
65°	369.1	397.4	448.2	485.4	494.5
67.5°	326.2	353.3	407.5	443.7	452.7
70°	276.6	307.1	364.6	401.9	410.9
72.5°	233.7	265.3	322.9	359.0	372.5
75°	187.4	223.5	281.1	319.5	328.5
77.5°	142.2	184.0	242.7	272.1	272.1
80°	101.6	145.6	199.8	213.4	215.6
82.5°	66.6	109.5	147.9	146.8	146.8
85°	38.4	71.1	88.1	85.8	85.8
87.5°	14.7	29.4	31.6	31.6	30.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)