

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: P310656

Luminaire Tested: **24FCZ2-35-UNV-L82765-CP187-W2A-U-4500K**

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: P310656  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 24FCZ2-35-UNV-L82765-CP187-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET  
Light Source: (168) 4500K 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: 3091.0 lumens  
Efficiency: N/A  
Efficacy: 108.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

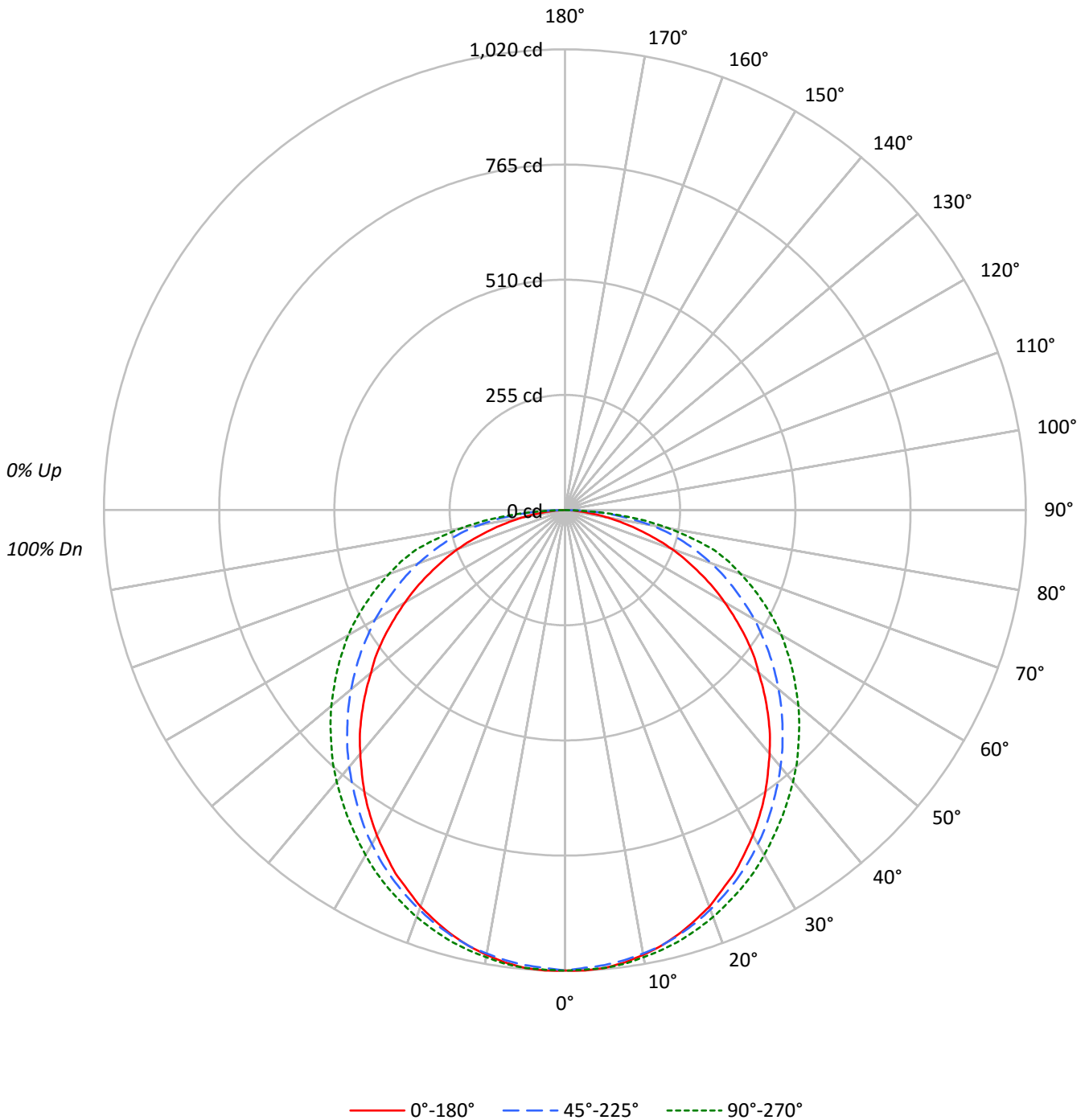
Input Watts (W): 28.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P310656

CATALOG NUMBER: 24FCZ2-35-UNV-L82765-CP187-W2A-U-4500K

### Luminous Intensity Polar Plot





TEST NUMBER: P310656

CATALOG NUMBER: 24FCZ2-35-UNV-L82765-CP187-W2A-U-4500K

**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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

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

	0°	45°	90°
0°	1372	1372	1372
5°	1374	1366	1374
10°	1366	1362	1373
15°	1354	1357	1374
20°	1338	1348	1373
25°	1317	1338	1372
30°	1292	1327	1370
35°	1267	1314	1371
40°	1237	1304	1380
45°	1208	1296	1391
50°	1172	1292	1412
55°	1143	1294	1441
60°	1098	1305	1490
65°	1048	1319	1544
70°	993	1360	1630
75°	885	1418	1781
80°	755	1502	1819
85°	539	1488	1741



TEST NUMBER: P310656

CATALOG NUMBER: 24FCZ2-35-UNV-L82765-CP187-W2A-U-4500K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	96.5	3.1
10°-20°	275.9	8.9
20°-30°	416.7	13.5
30°-40°	502.2	16.2
40°-50°	527.2	17.1
50°-60°	493.2	16.0
60°-70°	407.3	13.2
70°-80°	277.5	9.0
80°-90°	94.7	3.1
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°	789.0	25.5
0°-40°	1291.1	41.8
0°-60°	2311.5	74.8
0°-90°	3091.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3091.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1019	1019	1019	1019	1019	
5°	1017	1016	1011	1017	1017	97
15°	972	973	974	984	987	274
25°	887	891	901	919	924	408
35°	771	779	800	827	835	482
45°	635	648	681	718	731	490
55°	487	507	552	597	614	435
65°	329	357	414	467	485	327
75°	170	209	273	324	342	182
85°	35	69	96	109	113	44
90°	0	0	0	0	0	



TEST NUMBER: P310656

CATALOG NUMBER: 24FCZ2-35-UNV-L82765-CP187-W2A-U-4500K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1019.4	1019.4	1019.4	1019.4	1019.4
2.5°	1020.4	1019.4	1014.3	1019.4	1018.4
5°	1017.3	1016.3	1011.2	1017.3	1017.3
7.5°	1010.2	1010.2	1005.0	1012.2	1013.2
10°	999.9	999.9	996.8	1005.0	1005.0
12.5°	987.6	987.6	987.6	995.8	996.8
15°	972.2	973.2	974.3	984.5	986.6
17.5°	953.8	955.8	958.9	971.2	973.2
20°	934.3	936.3	941.4	955.8	958.9
22.5°	909.7	914.8	922.0	938.4	941.4
25°	887.1	891.2	901.4	918.9	924.0
27.5°	859.4	865.6	878.9	897.3	904.5
30°	831.7	837.9	854.3	875.8	882.0
32.5°	802.0	811.2	828.6	851.2	858.4
35°	771.2	779.4	799.9	826.6	834.8
37.5°	737.4	748.6	771.2	799.9	810.2
40°	704.5	716.9	742.5	773.3	785.6
42.5°	671.7	684.0	712.7	747.6	759.9
45°	634.8	648.1	681.0	717.9	731.2
47.5°	597.9	614.3	650.2	689.2	703.5
50°	559.9	578.4	617.4	658.4	674.8
52.5°	526.1	543.5	584.6	628.7	644.0
55°	487.1	506.6	551.7	596.9	614.3
57.5°	447.1	468.7	516.9	566.1	583.5
60°	408.2	431.8	485.1	534.3	553.8
62.5°	370.2	393.8	449.2	500.5	519.9
65°	329.2	356.9	414.3	466.6	485.1
67.5°	290.2	320.0	380.5	431.8	450.2
70°	252.3	281.0	345.6	395.9	414.3
72.5°	211.3	244.1	308.7	361.0	380.5
75°	170.2	209.2	272.8	324.1	342.5
77.5°	132.3	172.3	235.9	277.9	287.2
80°	97.4	138.4	193.8	223.6	234.8
82.5°	62.6	103.6	147.7	169.2	178.4
85°	34.9	68.7	96.4	108.7	112.8
87.5°	14.4	29.7	39.0	44.1	44.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)