

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: P310340

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-RDP-CP187-W2A-U-4000K**

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: P310340
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-19)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-60HE-UNV-L82765-RDP-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS WITH INSERT, 0.187" POLYCARB SHEET
Light Source: (336) 4000K 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: 3464.0 lumens
Efficiency: N/A
Efficacy: 71.9 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

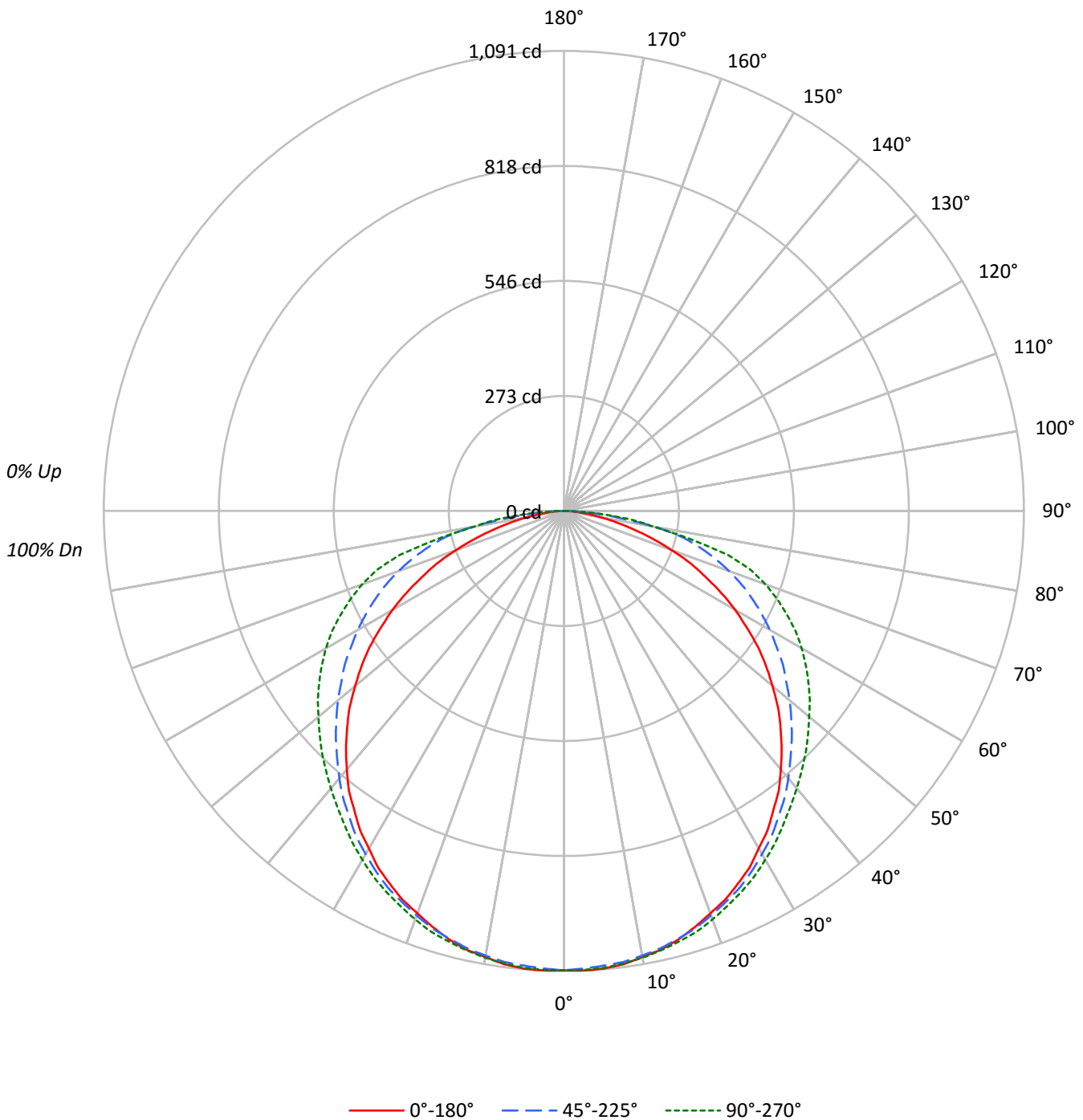
Input Watts (W): 48.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	108	103	98	94	105	100	96	92	96	93	89	92	89	87	88	86	84	82				82
2	97	89	81	75	95	87	80	74	83	77	72	80	75	71	77	73	69	67				67
3	88	77	68	62	86	76	67	61	72	66	60	70	64	59	67	62	58	56				56
4	81	68	59	52	78	67	58	51	64	57	51	62	55	50	59	54	49	47				47
5	74	60	51	44	72	59	51	44	57	49	43	55	48	43	53	47	42	40				40
6	68	54	45	38	66	53	45	38	51	44	38	50	43	37	48	42	37	35				35
7	63	49	40	34	61	48	40	34	47	39	33	45	38	33	44	38	33	31				31
8	59	45	36	30	57	44	36	30	43	35	30	41	34	29	40	34	29	27				27
9	55	41	33	27	53	40	32	27	39	32	27	38	31	26	37	31	26	24				24
10	51	38	30	24	50	37	29	24	36	29	24	35	29	24	34	28	24	22				22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1466	1466	1466
5°	1471	1462	1469
10°	1467	1462	1470
15°	1465	1462	1472
20°	1454	1461	1476
25°	1449	1464	1479
30°	1436	1460	1484
35°	1422	1456	1490
40°	1406	1455	1509
45°	1383	1455	1543
50°	1352	1464	1590
55°	1318	1487	1661
60°	1262	1517	1752
65°	1181	1570	1860
70°	1075	1642	2001
75°	911	1733	2090
80°	719	1744	1691
85°	531	1326	1485



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.3	3.0
10°-20°	297.4	8.6
20°-30°	454.8	13.1
30°-40°	556.0	16.0
40°-50°	592.5	17.1
50°-60°	566.5	16.4
60°-70°	479.9	13.9
70°-80°	322.6	9.3
80°-90°	91.0	2.6
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°	855.5	24.7
0°-40°	1411.5	40.7
0°-60°	2570.5	74.2
0°-90°	3464.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3464.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1089	1089	1089	1089	1089	
5°	1089	1088	1082	1088	1088	103
15°	1052	1052	1050	1058	1057	296
25°	976	979	986	995	996	450
35°	866	873	887	904	907	542
45°	727	739	765	797	811	561
55°	562	582	634	684	708	500
65°	371	409	493	558	584	368
75°	175	239	333	390	402	188
85°	34	70	86	93	96	43
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1089.3	1089.3	1089.3	1089.3	1089.3
2.5°	1091.0	1091.0	1085.9	1089.3	1089.3
5°	1089.3	1087.6	1082.5	1087.6	1087.6
7.5°	1084.2	1082.5	1079.0	1084.2	1082.5
10°	1073.9	1073.9	1070.4	1075.6	1075.6
12.5°	1065.3	1063.6	1061.8	1068.7	1067.0
15°	1051.5	1051.5	1049.8	1058.4	1056.7
17.5°	1034.3	1036.1	1037.8	1044.7	1046.4
20°	1015.4	1018.9	1020.6	1030.9	1030.9
22.5°	998.3	1000.0	1003.4	1013.7	1013.7
25°	975.9	979.4	986.2	994.8	996.5
27.5°	953.6	955.3	963.9	975.9	977.6
30°	924.4	929.5	939.8	953.6	955.3
32.5°	898.6	903.8	915.8	929.5	933.0
35°	866.0	872.8	886.6	903.8	907.2
37.5°	836.8	841.9	859.1	878.0	883.1
40°	800.7	811.0	828.2	850.5	859.1
42.5°	764.6	774.9	795.5	824.7	835.0
45°	726.8	738.8	764.6	797.2	811.0
47.5°	689.0	702.7	731.9	769.7	785.2
50°	646.0	663.2	699.3	742.3	759.4
52.5°	604.8	625.4	664.9	713.0	735.4
55°	561.8	582.5	634.0	683.8	707.9
57.5°	513.7	541.2	597.9	654.6	680.4
60°	469.1	494.8	563.6	625.4	651.2
62.5°	421.0	455.3	529.2	594.5	620.3
65°	371.1	408.9	493.1	558.4	584.2
67.5°	326.5	367.7	457.0	522.3	548.1
70°	273.2	324.7	417.5	482.8	508.6
72.5°	223.4	280.1	376.3	439.9	463.9
75°	175.3	238.8	333.3	390.0	402.1
77.5°	130.6	197.6	288.7	312.7	304.1
80°	92.8	158.1	225.1	213.1	218.2
82.5°	60.1	120.3	139.2	158.1	163.2
85°	34.4	70.4	85.9	92.8	96.2
87.5°	15.5	25.8	34.4	34.4	32.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)