

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: P311013

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CP187-W2A-U-3000K**

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: P311013  
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: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-3000K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET  
Light Source: (336) 3000K 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**

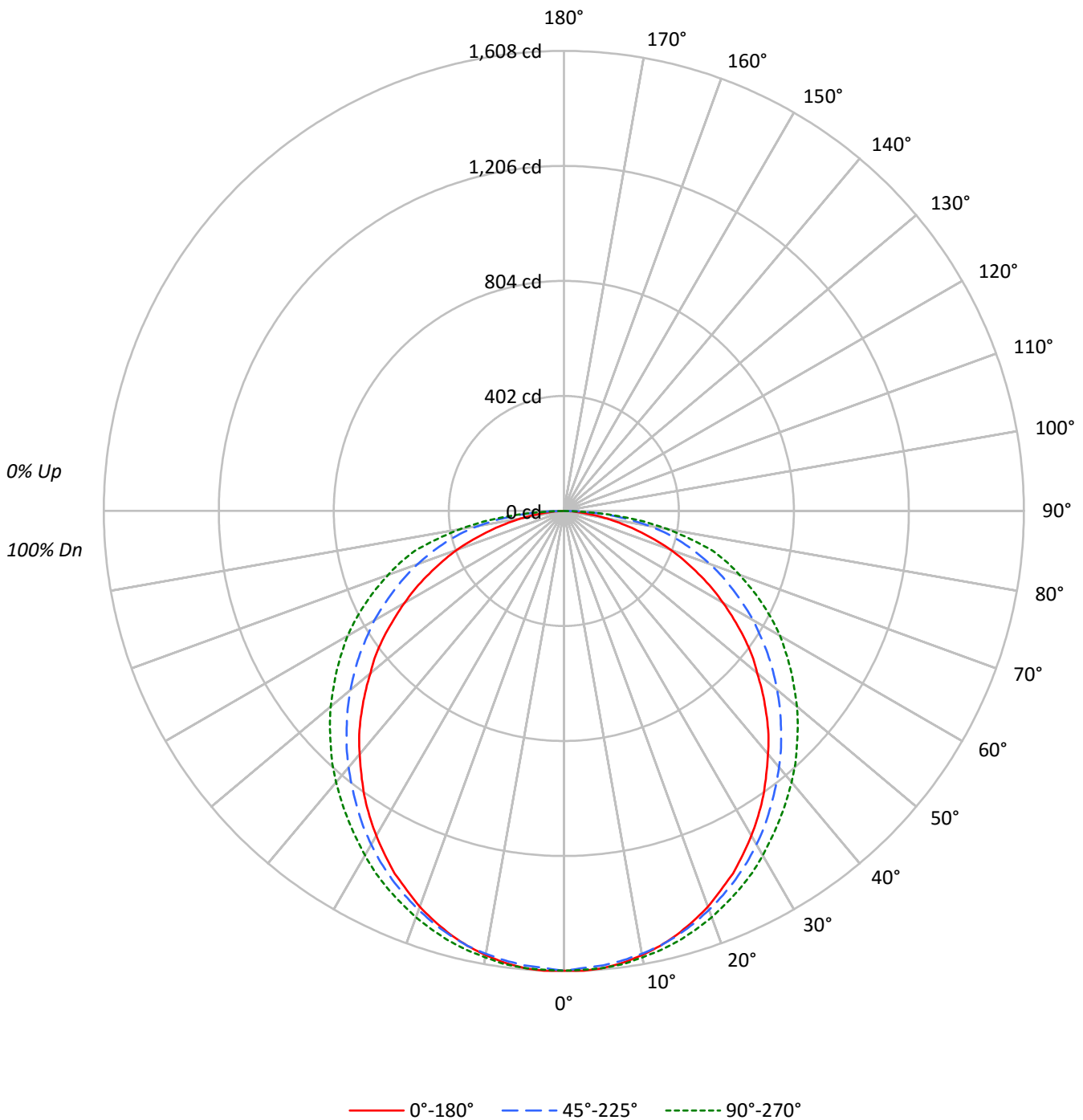
Lumens per Lamp: N/A  
Luminaire Lumens: 4872.0 lumens  
Efficiency: N/A  
Efficacy: 103.0 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 47.3  
Input Voltage (V): NR  
Input Current (A<sub>in</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



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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	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°	2162	2162	2162
5°	2166	2153	2166
10°	2153	2147	2164
15°	2135	2139	2166
20°	2109	2125	2164
25°	2076	2109	2162
30°	2037	2092	2160
35°	1997	2071	2161
40°	1950	2056	2175
45°	1904	2042	2193
50°	1847	2037	2226
55°	1801	2040	2271
60°	1731	2058	2349
65°	1652	2079	2434
70°	1564	2143	2569
75°	1395	2235	2807
80°	1190	2367	2868
85°	849	2345	2745



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.1	3.1
10°-20°	434.8	8.9
20°-30°	656.7	13.5
30°-40°	791.5	16.2
40°-50°	830.9	17.1
50°-60°	777.4	16.0
60°-70°	642.0	13.2
70°-80°	437.5	9.0
80°-90°	149.2	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°	1243.6	25.5
0°-40°	2035.1	41.8
0°-60°	3643.4	74.8
0°-90°	4872.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4872.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1607	1607	1607	1607	1607	
5°	1604	1602	1594	1604	1604	152
15°	1532	1534	1536	1552	1555	432
25°	1398	1405	1421	1448	1456	643
35°	1216	1228	1261	1303	1316	760
45°	1001	1022	1073	1132	1152	772
55°	768	798	870	941	968	685
65°	519	562	653	736	765	515
75°	268	330	430	511	540	286
85°	55	108	152	171	178	69
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1606.7	1606.7	1606.7	1606.7	1606.7
2.5°	1608.4	1606.7	1598.7	1606.7	1605.1
5°	1603.5	1601.9	1593.8	1603.5	1603.5
7.5°	1592.2	1592.2	1584.1	1595.4	1597.0
10°	1576.0	1576.0	1571.2	1584.1	1584.1
12.5°	1556.6	1556.6	1556.6	1569.6	1571.2
15°	1532.4	1534.0	1535.6	1551.8	1555.0
17.5°	1503.3	1506.5	1511.4	1530.8	1534.0
20°	1472.6	1475.8	1483.9	1506.5	1511.4
22.5°	1433.8	1441.9	1453.2	1479.0	1483.9
25°	1398.2	1404.7	1420.9	1448.3	1456.4
27.5°	1354.6	1364.3	1385.3	1414.4	1425.7
30°	1310.9	1320.6	1346.5	1380.4	1390.1
32.5°	1264.1	1278.6	1306.1	1341.6	1353.0
35°	1215.6	1228.5	1260.8	1302.9	1315.8
37.5°	1162.2	1180.0	1215.6	1260.8	1277.0
40°	1110.5	1129.9	1170.3	1218.8	1238.2
42.5°	1058.8	1078.2	1123.4	1178.4	1197.8
45°	1000.6	1021.6	1073.3	1131.5	1152.5
47.5°	942.4	968.2	1024.8	1086.2	1108.9
50°	882.6	911.7	973.1	1037.8	1063.6
52.5°	829.2	856.7	921.4	990.9	1015.1
55°	767.8	798.5	869.6	940.8	968.2
57.5°	704.8	738.7	814.7	892.3	919.8
60°	643.3	680.5	764.6	842.2	872.9
62.5°	583.5	620.7	708.0	788.8	819.5
65°	518.9	562.5	653.0	735.5	764.6
67.5°	457.5	504.3	599.7	680.5	709.6
70°	397.6	442.9	544.7	623.9	653.0
72.5°	333.0	384.7	486.5	569.0	599.7
75°	268.3	329.8	430.0	510.8	539.9
77.5°	208.5	271.6	371.8	438.1	452.6
80°	153.6	218.2	305.5	352.4	370.2
82.5°	98.6	163.3	232.8	266.7	281.3
85°	55.0	108.3	151.9	171.3	177.8
87.5°	22.6	46.9	61.4	69.5	69.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)