

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: P313331

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-HRP-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: P313331  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)  
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-L83050-HRP-CP187-W2A-U-3500K  
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. 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**

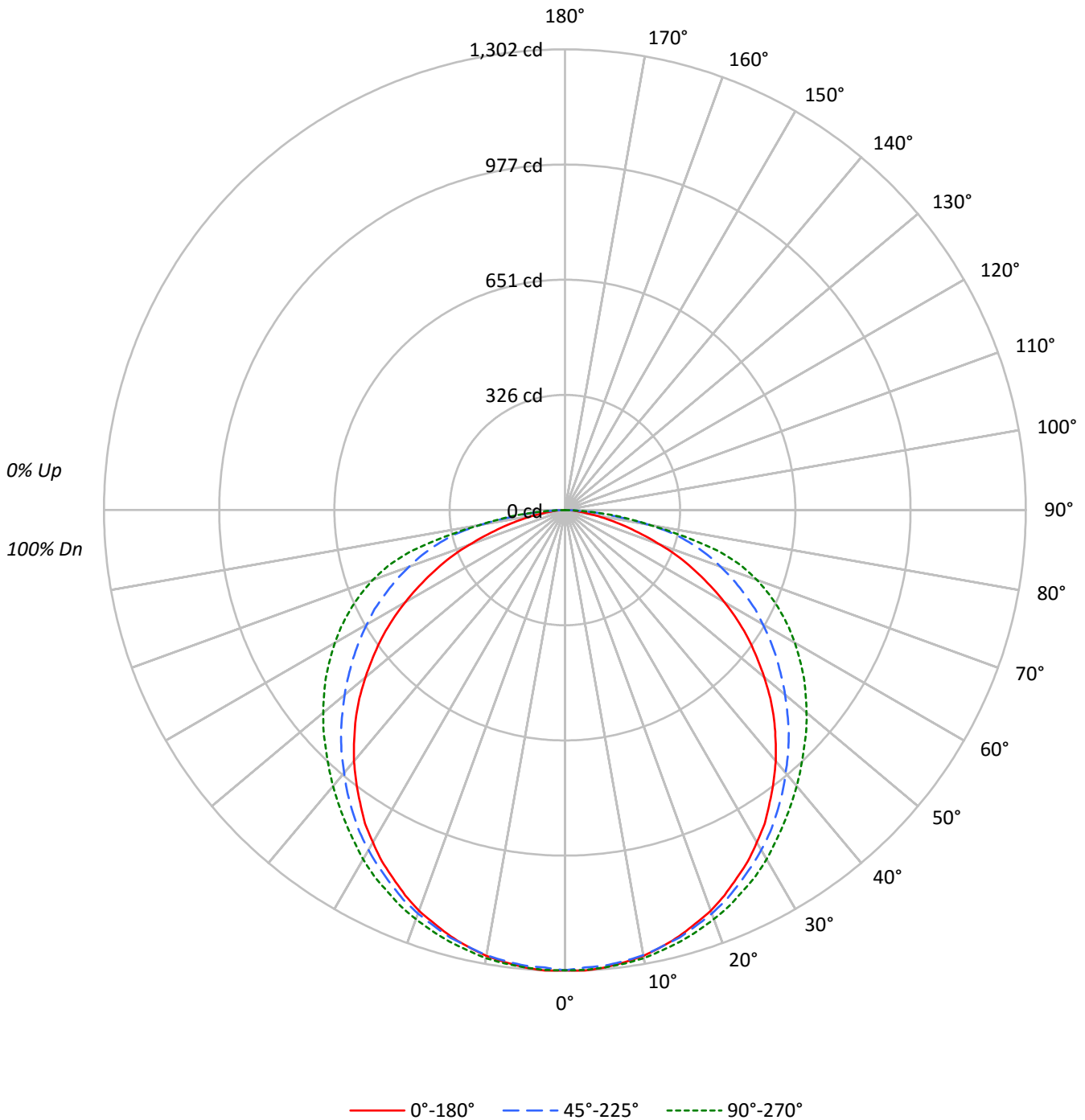
Lumens per Lamp: N/A  
Luminaire Lumens: 4009.0 lumens  
Efficiency: N/A  
Efficacy: 84.2 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 47.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
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	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	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	24	35	29	24	23

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

	0°	45°	90°
0°	1750	1750	1750
5°	1752	1745	1752
10°	1747	1745	1756
15°	1737	1742	1758
20°	1726	1737	1761
25°	1704	1729	1764
30°	1684	1724	1771
35°	1657	1715	1773
40°	1627	1704	1789
45°	1590	1702	1817
50°	1539	1700	1865
55°	1484	1713	1933
60°	1400	1739	2019
65°	1293	1779	2132
70°	1129	1842	2271
75°	916	1937	2347
80°	676	1898	1898
85°	519	1399	1581



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	123.2	3.1
10°-20°	353.8	8.8
20°-30°	538.7	13.4
30°-40°	654.1	16.3
40°-50°	691.0	17.2
50°-60°	652.1	16.3
60°-70°	542.2	13.5
70°-80°	356.7	8.9
80°-90°	97.2	2.4
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°	1015.7	25.3
0°-40°	1669.8	41.7
0°-60°	3012.9	75.2
0°-90°	4009.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4009.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1301	1301	1301	1301	1301	
5°	1297	1297	1292	1297	1297	123
15°	1247	1249	1250	1262	1262	352
25°	1148	1155	1165	1185	1188	530
35°	1009	1020	1044	1071	1079	631
45°	836	853	895	938	955	644
55°	633	660	730	799	824	564
65°	406	453	559	641	670	402
75°	176	257	373	441	452	190
85°	34	74	91	101	102	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1300.7	1300.7	1300.7	1300.7	1300.7
2.5°	1302.4	1300.7	1294.0	1300.7	1300.7
5°	1297.4	1297.4	1292.3	1297.4	1297.4
7.5°	1289.0	1289.0	1285.6	1292.3	1292.3
10°	1278.9	1278.9	1277.2	1285.6	1285.6
12.5°	1263.8	1265.5	1263.8	1273.9	1273.9
15°	1247.0	1248.7	1250.4	1262.1	1262.1
17.5°	1225.2	1228.6	1231.9	1245.3	1247.0
20°	1205.1	1206.7	1213.4	1228.6	1230.2
22.5°	1178.2	1183.2	1191.6	1206.7	1211.8
25°	1148.0	1154.7	1164.8	1184.9	1188.3
27.5°	1119.5	1124.5	1137.9	1159.7	1166.5
30°	1084.2	1092.6	1109.4	1131.2	1139.6
32.5°	1050.6	1059.0	1079.2	1102.7	1109.4
35°	1008.7	1020.4	1043.9	1070.8	1079.2
37.5°	968.4	980.2	1008.7	1038.9	1049.0
40°	926.5	939.9	970.1	1005.3	1018.8
42.5°	881.1	899.6	933.2	971.8	986.9
45°	835.8	852.6	894.6	938.2	955.0
47.5°	787.1	807.3	852.6	904.6	924.8
50°	735.1	760.3	812.3	869.4	891.2
52.5°	683.1	711.6	770.4	834.1	857.6
55°	632.7	659.6	730.1	798.9	824.1
57.5°	577.4	610.9	688.1	762.0	787.1
60°	520.3	557.2	646.2	723.4	750.2
62.5°	463.2	505.2	605.9	683.1	711.6
65°	406.2	453.2	558.9	641.1	669.7
67.5°	350.8	402.8	515.3	597.5	626.0
70°	287.0	352.5	468.3	548.8	577.4
72.5°	228.3	303.8	422.9	498.5	523.6
75°	176.2	256.8	372.6	441.4	451.5
77.5°	129.2	209.8	320.6	344.1	345.7
80°	87.3	167.8	245.0	241.7	245.0
82.5°	57.1	125.9	154.4	172.9	174.5
85°	33.6	73.8	90.6	100.7	102.4
87.5°	16.8	25.2	31.9	33.6	36.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)