

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: P313159

Luminaire Tested: **24FCZ2-40HE-UNV-L83050-HRP-CP187-W2A-U-5000K**

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: P313159  
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: 24FCZ2-40HE-UNV-L83050-HRP-CP187-W2A-U-5000K  
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187" POLYCARB SHEET  
Light Source: (336) 5000K 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: 2869.0 lumens  
Efficiency: N/A  
Efficacy: 89.9 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

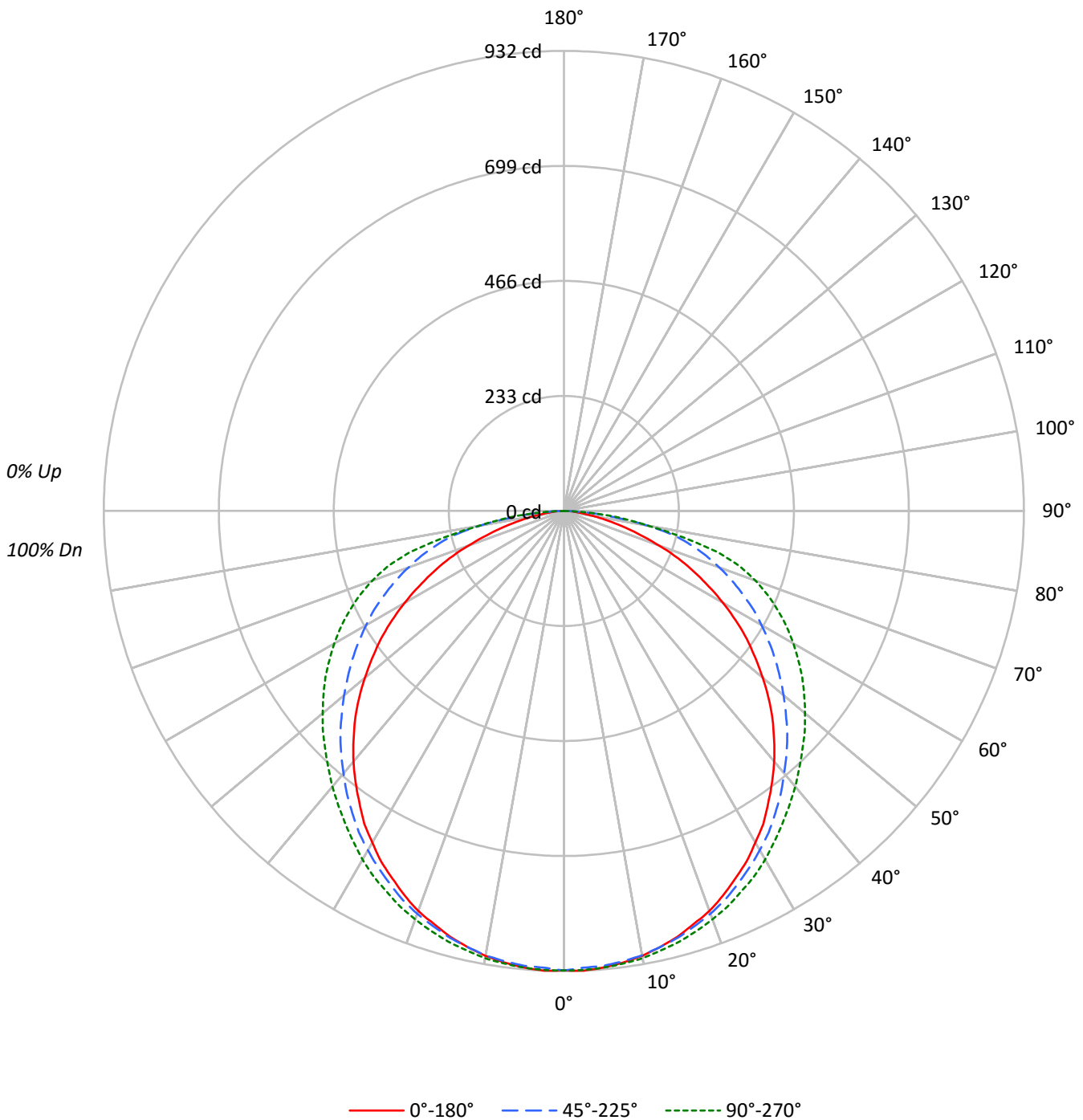
Input Watts (W): 31.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	1252	1252	1252
5°	1254	1249	1254
10°	1250	1249	1257
15°	1243	1246	1258
20°	1235	1243	1261
25°	1220	1238	1262
30°	1205	1233	1267
35°	1186	1227	1269
40°	1165	1219	1281
45°	1138	1218	1300
50°	1101	1217	1335
55°	1062	1226	1383
60°	1002	1244	1445
65°	926	1273	1526
70°	808	1318	1626
75°	656	1386	1680
80°	484	1359	1359
85°	371	1002	1132



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	88.2	3.1
10°-20°	253.2	8.8
20°-30°	385.5	13.4
30°-40°	468.1	16.3
40°-50°	494.5	17.2
50°-60°	466.6	16.3
60°-70°	388.0	13.5
70°-80°	255.3	8.9
80°-90°	69.6	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°	726.9	25.3
0°-40°	1195.0	41.7
0°-60°	2156.2	75.2
0°-90°	2869.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2869.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	931	931	931	931	931	
5°	928	928	925	928	928	88
15°	892	894	895	903	903	252
25°	822	826	834	848	850	379
35°	722	730	747	766	772	452
45°	598	610	640	671	683	461
55°	453	472	522	572	590	403
65°	291	324	400	459	479	287
75°	126	184	267	316	323	136
85°	24	53	65	72	73	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	930.8	930.8	930.8	930.8	930.8
2.5°	932.1	930.8	926.0	930.8	930.8
5°	928.4	928.4	924.8	928.4	928.4
7.5°	922.4	922.4	920.0	924.8	924.8
10°	915.2	915.2	914.0	920.0	920.0
12.5°	904.4	905.6	904.4	911.6	911.6
15°	892.4	893.6	894.8	903.2	903.2
17.5°	876.8	879.2	881.6	891.2	892.4
20°	862.4	863.6	868.4	879.2	880.4
22.5°	843.2	846.8	852.8	863.6	867.2
25°	821.5	826.4	833.6	848.0	850.4
27.5°	801.1	804.7	814.3	830.0	834.8
30°	775.9	781.9	793.9	809.5	815.5
32.5°	751.9	757.9	772.3	789.1	793.9
35°	721.9	730.3	747.1	766.3	772.3
37.5°	693.0	701.4	721.9	743.5	750.7
40°	663.0	672.6	694.2	719.5	729.1
42.5°	630.6	643.8	667.8	695.4	706.2
45°	598.1	610.2	640.2	671.4	683.4
47.5°	563.3	577.7	610.2	647.4	661.8
50°	526.1	544.1	581.3	622.2	637.8
52.5°	488.8	509.3	551.3	596.9	613.8
55°	452.8	472.0	522.5	571.7	589.7
57.5°	413.2	437.2	492.4	545.3	563.3
60°	372.3	398.8	462.4	517.7	536.9
62.5°	331.5	361.5	433.6	488.8	509.3
65°	290.7	324.3	400.0	458.8	479.2
67.5°	251.0	288.3	368.7	427.6	448.0
70°	205.4	252.2	335.1	392.8	413.2
72.5°	163.3	217.4	302.7	356.7	374.7
75°	126.1	183.8	266.6	315.9	323.1
77.5°	92.5	150.1	229.4	246.2	247.4
80°	62.5	120.1	175.4	173.0	175.4
82.5°	40.8	90.1	110.5	123.7	124.9
85°	24.0	52.8	64.9	72.1	73.3
87.5°	12.0	18.0	22.8	24.0	26.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)