

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: P313234

Luminaire Tested: **24FCZ2-45-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: P313234
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: 24FCZ2-45-UNV-L83050-HRP-CP187-W2A-U-5000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187"
POLYCARB SHEET
Light Source: (168) 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: 3193.0 lumens
Efficiency: N/A
Efficacy: 81.0 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

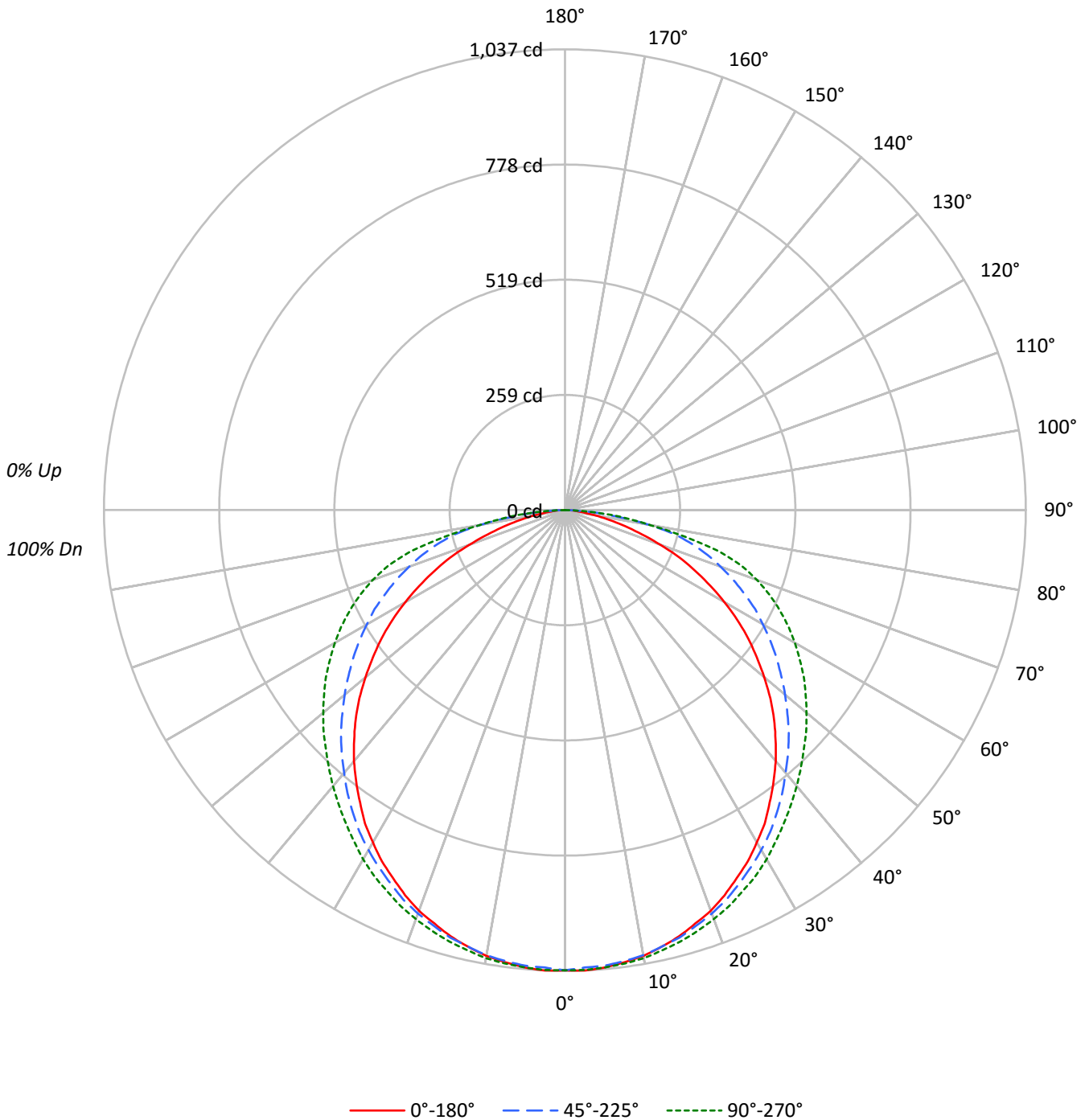
Input Watts (W): 39.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1394	1394	1394
5°	1396	1390	1396
10°	1392	1390	1399
15°	1383	1387	1400
20°	1374	1384	1403
25°	1357	1377	1405
30°	1342	1373	1410
35°	1320	1366	1412
40°	1296	1357	1425
45°	1267	1356	1447
50°	1226	1354	1486
55°	1182	1364	1540
60°	1115	1385	1608
65°	1030	1417	1698
70°	899	1467	1809
75°	730	1543	1869
80°	539	1512	1512
85°	412	1115	1258



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.1	3.1
10°-20°	281.8	8.8
20°-30°	429.0	13.4
30°-40°	520.9	16.3
40°-50°	550.4	17.2
50°-60°	519.3	16.3
60°-70°	431.8	13.5
70°-80°	284.1	8.9
80°-90°	77.4	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°	809.0	25.3
0°-40°	1329.9	41.7
0°-60°	2399.7	75.2
0°-90°	3193.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3193.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1036	1036	1036	1036	1036	
5°	1033	1033	1029	1033	1033	98
15°	993	994	996	1005	1005	280
25°	914	920	928	944	946	422
35°	803	813	832	853	860	503
45°	666	679	712	747	761	513
55°	504	525	582	636	656	449
65°	324	361	445	511	533	320
75°	140	204	297	352	360	151
85°	27	59	72	80	82	33
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1036.0	1036.0	1036.0	1036.0	1036.0
2.5°	1037.3	1036.0	1030.6	1036.0	1036.0
5°	1033.3	1033.3	1029.3	1033.3	1033.3
7.5°	1026.6	1026.6	1023.9	1029.3	1029.3
10°	1018.6	1018.6	1017.3	1023.9	1023.9
12.5°	1006.6	1007.9	1006.6	1014.6	1014.6
15°	993.2	994.5	995.9	1005.2	1005.2
17.5°	975.8	978.5	981.2	991.9	993.2
20°	959.8	961.1	966.5	978.5	979.8
22.5°	938.4	942.4	949.1	961.1	965.1
25°	914.3	919.7	927.7	943.7	946.4
27.5°	891.6	895.6	906.3	923.7	929.0
30°	863.5	870.2	883.6	901.0	907.6
32.5°	836.8	843.5	859.5	878.2	883.6
35°	803.4	812.7	831.5	852.8	859.5
37.5°	771.3	780.7	803.4	827.4	835.5
40°	737.9	748.6	772.6	800.7	811.4
42.5°	701.8	716.5	743.2	774.0	786.0
45°	665.7	679.1	712.5	747.2	760.6
47.5°	626.9	643.0	679.1	720.5	736.5
50°	585.5	605.5	647.0	692.4	709.8
52.5°	544.1	566.8	613.6	664.4	683.1
55°	503.9	525.3	581.5	636.3	656.3
57.5°	459.8	486.6	548.1	606.9	626.9
60°	414.4	443.8	514.6	576.1	597.5
62.5°	368.9	402.4	482.6	544.1	566.8
65°	323.5	360.9	445.1	510.6	533.4
67.5°	279.4	320.8	410.4	475.9	498.6
70°	228.6	280.7	372.9	437.1	459.8
72.5°	181.8	241.9	336.9	397.0	417.1
75°	140.4	204.5	296.8	351.6	359.6
77.5°	102.9	167.1	255.3	274.0	275.4
80°	69.5	133.7	195.2	192.5	195.2
82.5°	45.4	100.3	123.0	137.7	139.0
85°	26.7	58.8	72.2	80.2	81.5
87.5°	13.4	20.1	25.4	26.7	29.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)