

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: P313232

Luminaire Tested: **24FCZ2-45-UNV-L83050-HRP-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: P313232
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-4000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187"
POLYCARB SHEET
Light Source: (168) 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: 3162.0 lumens
Efficiency: N/A
Efficacy: 82.1 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

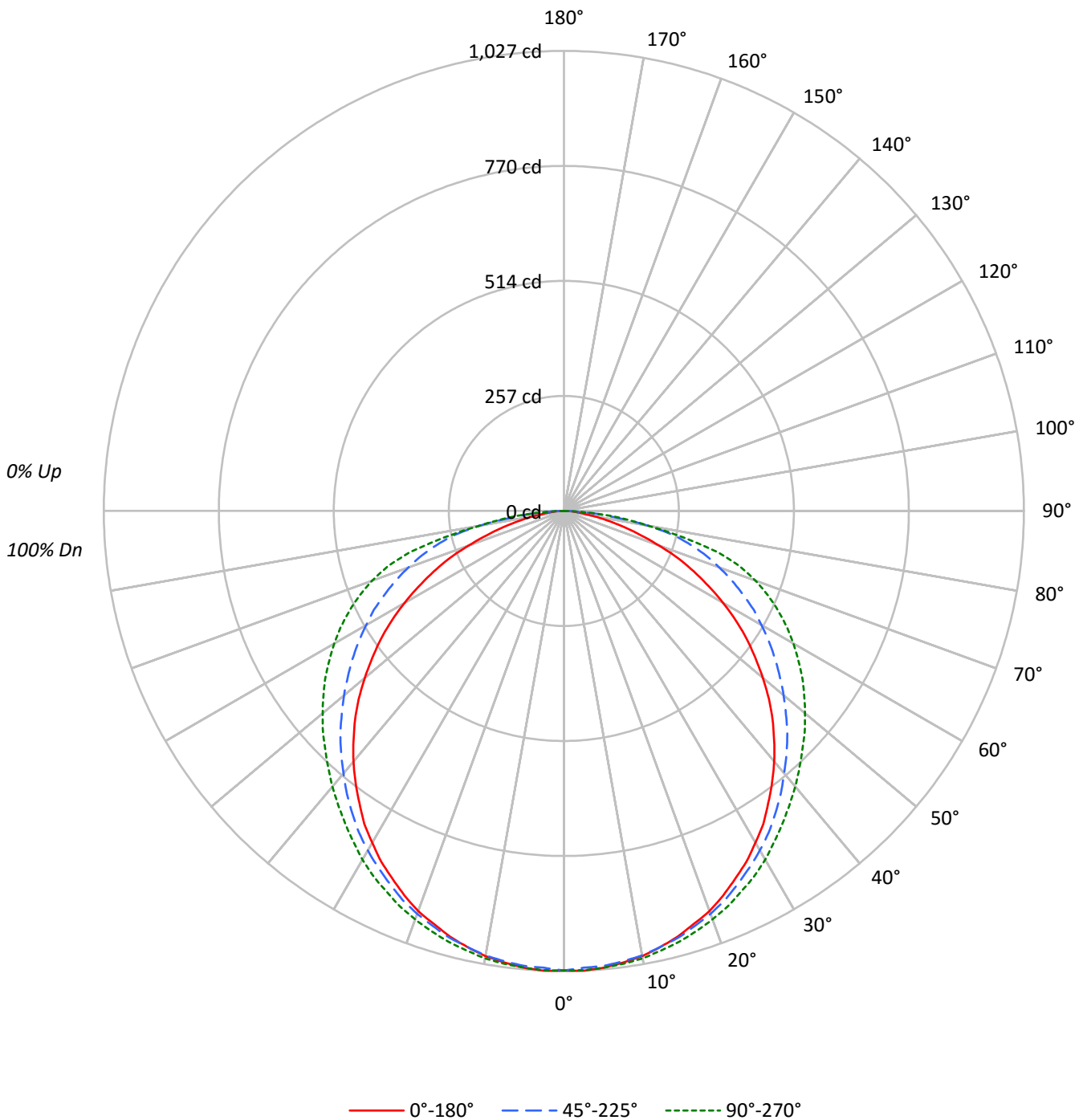
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1380	1380	1380
5°	1382	1377	1382
10°	1378	1376	1385
15°	1370	1374	1387
20°	1361	1370	1389
25°	1344	1364	1391
30°	1329	1359	1396
35°	1307	1352	1398
40°	1283	1344	1411
45°	1254	1343	1433
50°	1214	1341	1471
55°	1171	1351	1525
60°	1104	1371	1592
65°	1020	1403	1682
70°	891	1453	1792
75°	723	1528	1851
80°	533	1498	1498
85°	409	1104	1246



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.2	3.1
10°-20°	279.1	8.8
20°-30°	424.9	13.4
30°-40°	515.9	16.3
40°-50°	545.0	17.2
50°-60°	514.3	16.3
60°-70°	427.6	13.5
70°-80°	281.3	8.9
80°-90°	76.7	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°	801.1	25.3
0°-40°	1317.0	41.7
0°-60°	2376.4	75.2
0°-90°	3162.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3162.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1026	1026	1026	1026	1026	
5°	1023	1023	1019	1023	1023	97
15°	984	985	986	996	996	277
25°	906	911	919	935	937	418
35°	796	805	823	845	851	498
45°	659	672	706	740	753	508
55°	499	520	576	630	650	445
65°	320	357	441	506	528	317
75°	139	202	294	348	356	150
85°	26	58	72	79	81	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1025.9	1025.9	1025.9	1025.9	1025.9
2.5°	1027.2	1025.9	1020.6	1025.9	1025.9
5°	1023.3	1023.3	1019.3	1023.3	1023.3
7.5°	1016.6	1016.6	1014.0	1019.3	1019.3
10°	1008.7	1008.7	1007.4	1014.0	1014.0
12.5°	996.8	998.1	996.8	1004.7	1004.7
15°	983.6	984.9	986.2	995.5	995.5
17.5°	966.3	969.0	971.6	982.2	983.6
20°	950.5	951.8	957.1	969.0	970.3
22.5°	929.3	933.3	939.9	951.8	955.8
25°	905.5	910.7	918.7	934.6	937.2
27.5°	882.9	886.9	897.5	914.7	920.0
30°	855.1	861.8	875.0	892.2	898.8
32.5°	828.7	835.3	851.2	869.7	875.0
35°	795.6	804.8	823.4	844.6	851.2
37.5°	763.8	773.1	795.6	819.4	827.3
40°	730.7	741.3	765.1	792.9	803.5
42.5°	695.0	709.5	736.0	766.5	778.4
45°	659.2	672.5	705.6	740.0	753.2
47.5°	620.8	636.7	672.5	713.5	729.4
50°	579.8	599.7	640.7	685.7	702.9
52.5°	538.8	561.3	607.6	657.9	676.4
55°	499.1	520.2	575.8	630.1	650.0
57.5°	455.4	481.8	542.7	601.0	620.8
60°	410.4	439.5	509.6	570.5	591.7
62.5°	365.4	398.5	477.9	538.8	561.3
65°	320.3	357.4	440.8	505.7	528.2
67.5°	276.7	317.7	406.4	471.3	493.8
70°	226.4	278.0	369.3	432.9	455.4
72.5°	180.0	239.6	333.6	393.2	413.0
75°	139.0	202.5	293.9	348.1	356.1
77.5°	101.9	165.5	252.8	271.4	272.7
80°	68.8	132.4	193.3	190.6	193.3
82.5°	45.0	99.3	121.8	136.3	137.7
85°	26.5	58.2	71.5	79.4	80.7
87.5°	13.2	19.9	25.2	26.5	29.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)