

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: 236p220

Luminaire Tested: **2HBG-454T5-A-UNV-EBT1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: 236p220
Test Lab: METALUX RESEARCH LABS
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 2HBG-454T5-A-UNV-EBT1-U
Description: 2X4 HIGH PERFORMANCE F-BAY RECESSED TROFFER, 4 LAMP T5, WITH
ACRYLIC LENS
Light Source: FOUR - F54T5/841HO - 4400 LUMENS - 54 WATTS
Ballast/Driver: B454PUNV-E

Summary

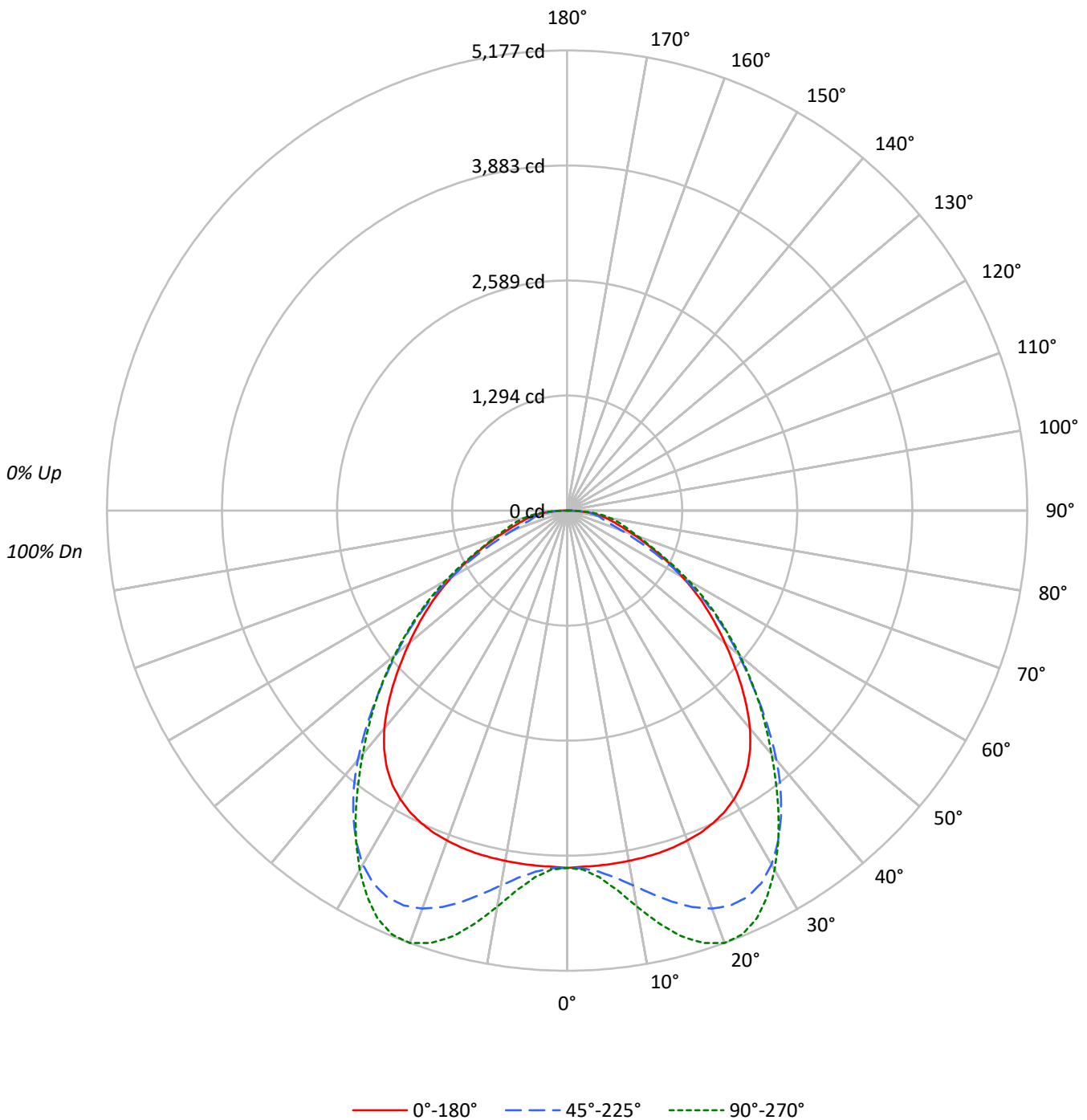
Lumens per Lamp: 4400 (4 lamps)
Luminaire Lumens: 12292.0 lumens
Efficiency: 69.8%
Efficacy: 61.8 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.5 / 1.45
Luminous Opening: Rectangular (W 1.75' x L: 3.83' x H: 0')
CIE Type: Direct

Input Watts (W): 199
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	83	83	83	83	81	81	81	81	78	78	78		74	74	74		71	71	71	70
1	76	73	71	68	75	72	69	67	69	67	65		66	64	63		64	62	61	59
2	70	65	60	56	68	63	59	56	61	57	54		59	56	53		57	54	52	51
3	64	57	52	48	63	56	51	47	54	50	46		52	49	46		50	47	45	43
4	59	51	45	41	58	50	45	41	48	44	40		47	43	39		45	42	39	37
5	54	46	40	35	53	45	39	35	44	39	35		42	38	35		41	37	34	33
6	50	41	35	31	49	41	35	31	40	35	31		38	34	30		37	33	30	29
7	47	38	32	28	46	37	32	28	36	31	27		35	31	27		34	30	27	26
8	44	34	29	25	43	34	28	25	33	28	24		32	28	24		31	27	24	23
9	41	32	26	22	40	31	26	22	30	26	22		30	25	22		29	25	22	21
10	38	29	24	20	37	29	24	20	28	23	20		27	23	20		27	23	20	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6450	6450	6450
5°	6457	6567	6667
10°	6521	6975	7368
15°	6625	7565	8234
20°	6746	8136	8840
25°	6869	8493	8951
30°	6954	8519	8645
35°	6926	8217	8119
40°	6705	7677	7490
45°	6272	6948	6921
50°	5791	6266	6330
55°	5338	5654	5732
60°	4820	4859	5067
65°	4233	3850	4366
70°	3744	3017	3955
75°	3571	2759	4067
80°	3872	3271	4639
85°	4326	3940	5468



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	395.4	3.2	2.2	0°	4020	4020	4020	4020	4020	
10°-20°	1280.1	10.4	7.3	5°	4009	4031	4077	4119	4139	383
20°-30°	2124.4	17.3	12.1	15°	3988	4173	4554	4849	4957	1128
30°-40°	2506.0	20.4	14.2	25°	3880	4255	4797	5019	5056	1789
40°-50°	2310.7	18.8	13.1	35°	3536	3890	4195	4184	4145	2200
50°-60°	1767.2	14.4	10.0	45°	2764	2978	3062	3034	3050	2130
60°-70°	1069.6	8.7	6.1	55°	1908	1877	2021	2030	2049	1706
70°-80°	588.1	4.8	3.3	65°	1115	991	1014	1101	1150	1116
80°-90°	250.5	2.0	1.4	75°	576	527	445	600	656	621
90°-100°	0.0	0.0	0.0	85°	235	217	214	277	297	248
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	
110°-120°	0.0	0.0	0.0							
120°-130°	0.0	0.0	0.0							
130°-140°	0.0	0.0	0.0							
140°-150°	0.0	0.0	0.0							
150°-160°	0.0	0.0	0.0							
160°-170°	0.0	0.0	0.0							
170°-180°	0.0	0.0	0.0							
0°-30°	3799.8	30.9	21.6							
0°-40°	6305.8	51.3	35.8							
0°-60°	10383.7	84.5	59.0							
0°-90°	12292.0	100.0	69.8							
90°-120°	0.0	0.0	0.0							
90°-150°	0.0	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	12292.0	100.0	69.8							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4020	4020	4020	4020	4020
2.5°	4010	4019	4028	4036	4041
5°	4009	4031	4077	4119	4139
7.5°	4007	4057	4163	4264	4304
10°	4002	4090	4281	4452	4522
12.5°	3996	4129	4416	4659	4752
15°	3988	4173	4554	4849	4957
17.5°	3972	4214	4676	4998	5101
20°	3951	4247	4765	5082	5177
22.5°	3923	4261	4808	5090	5158
25°	3880	4255	4797	5019	5056
27.5°	3826	4218	4727	4873	4882
30°	3753	4145	4598	4678	4666
32.5°	3658	4038	4416	4446	4419
35°	3536	3890	4195	4184	4145
37.5°	3383	3705	3944	3895	3858
40°	3201	3487	3665	3603	3576
42.5°	2988	3240	3363	3310	3309
45°	2764	2978	3062	3034	3050
47.5°	2535	2701	2772	2776	2793
50°	2320	2426	2510	2527	2536
52.5°	2111	2149	2264	2276	2287
55°	1908	1877	2021	2030	2049
57.5°	1706	1619	1770	1786	1814
60°	1502	1384	1514	1543	1579
62.5°	1304	1173	1255	1307	1353
65°	1115	991	1014	1101	1150
67.5°	946	837	808	931	980
70°	798	712	643	798	843
72.5°	675	610	523	691	739
75°	576	527	445	600	656
77.5°	494	448	396	516	579
80°	419	370	354	440	502
82.5°	333	294	294	364	406
85°	235	217	214	277	297
87.5°	133	131	123	166	172
90°	0	0	0	0	0

(END OF REPORT)