

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: 236P288

Luminaire Tested: **HBI-454T5-N-UNV-EHT1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 236P288  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: HBI-454T5-N-UNV-EHT1-U  
Description: HBI SERIES, FULL BODY STEEL HOUSING, WITH FOUR T5HO LAMPS  
NARROW DISTRIBUTION SPECULAR REFLECTOR NO UPLIGHT  
Light Source: FOUR T5 HIGH OUTPUT LINEAR FLUORESCENT LAMPS, F54T5 54W - 4400 LUMENS EA  
Ballast/Driver: -

**Summary**

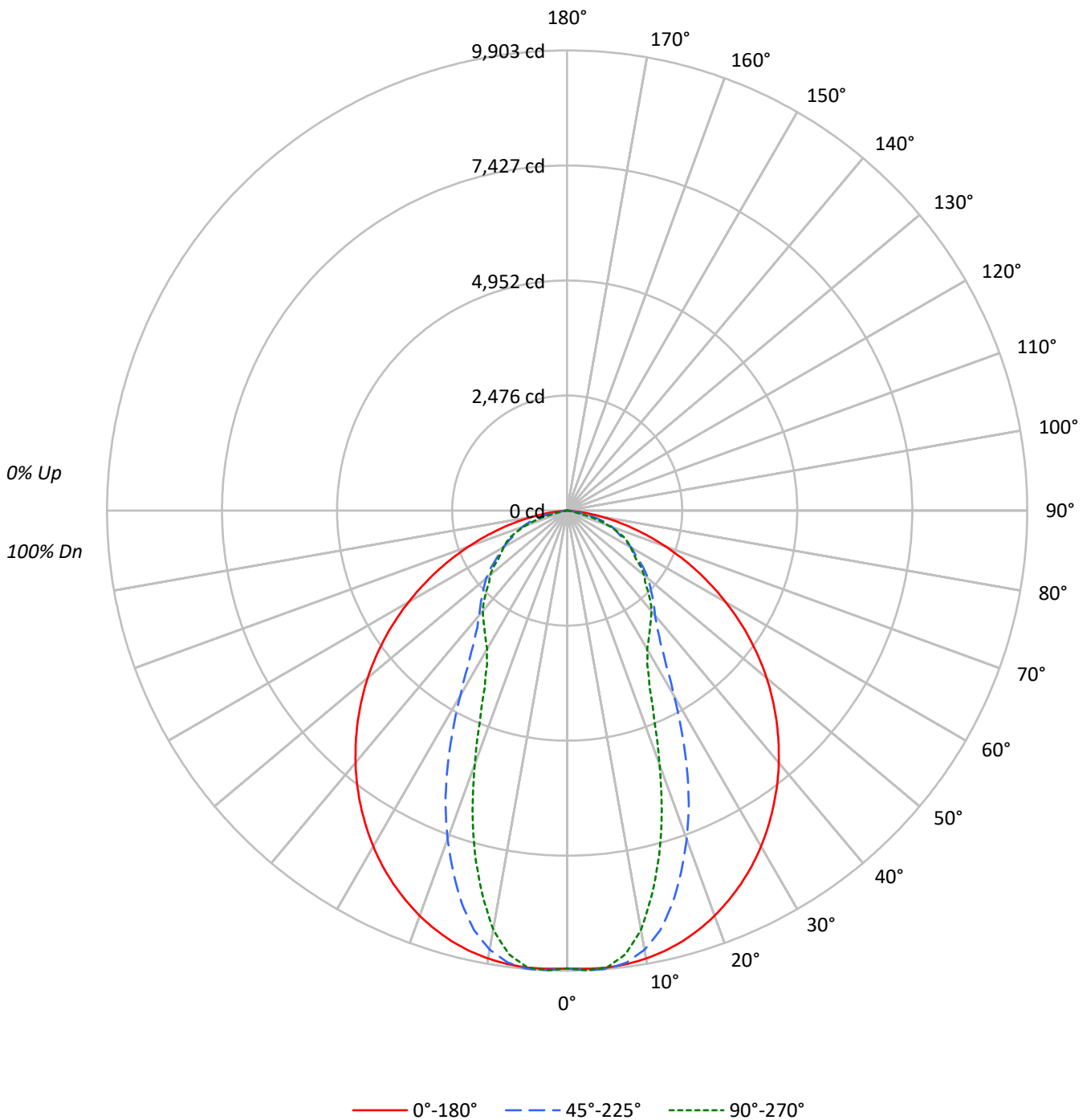
Lumens per Lamp: 4400 (4 lamps)  
Luminaire Lumens: 16168.7 lumens  
Efficiency: 91.9%  
Efficacy: 73.8 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 0.72 / 0.88  
Luminous Opening: Rectangular (W 1.23' x L: 3.92' x H: 0')  
CIE Type: Direct

Input Watts (W): 219  
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	109	109	109	109	107	107	107	107	102	102	102	98	98	98	94	94	94	92
1	101	98	94	91	99	95	92	90	92	89	87	88	86	84	85	83	82	80
2	93	87	81	76	91	85	80	76	82	78	74	79	75	72	76	73	71	69
3	86	77	71	65	84	76	70	65	73	68	64	71	66	63	69	65	62	60
4	80	70	62	57	78	68	62	57	66	60	56	64	59	55	62	58	54	52
5	74	63	56	50	72	62	55	50	60	54	49	59	53	49	57	52	48	47
6	69	58	50	45	67	57	50	45	55	49	44	54	48	44	52	47	44	42
7	64	53	46	40	63	52	45	40	51	45	40	50	44	40	48	43	39	38
8	60	49	42	37	59	48	41	37	47	41	36	46	40	36	45	40	36	34
9	57	45	38	34	55	45	38	34	44	38	33	43	37	33	42	37	33	31
10	53	42	35	31	52	42	35	31	41	35	31	40	35	31	39	34	31	29

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

	0°	45°	90°
0°	22032	22032	22032
5°	22159	22217	22143
10°	22224	21782	20790
15°	22207	20268	17728
20°	22080	17902	13829
25°	21855	15034	10354
30°	21552	11868	8886
35°	21148	9589	8464
40°	20685	8584	8237
45°	20135	8171	7766
50°	19503	7910	7541
55°	18668	7402	7048
60°	17636	7137	7047
65°	16342	6634	7073
70°	14715	6720	6236
75°	12561	5943	4302
80°	9477	3180	1339
85°	4515	1026	1231



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	932.4	5.8	5.3	0°	9854	9854	9854	9854	9854	
10°-20°	2424.4	15.0	13.8	5°	9873	9894	9899	9871	9866	940
20°-30°	2925.1	18.1	16.6	15°	9594	9496	8756	7956	7659	2706
30°-40°	2864.5	17.7	16.3	25°	8859	8183	6094	4581	4197	4080
40°-50°	2576.9	15.9	14.6	35°	7748	6159	3513	3158	3101	4845
50°-60°	2063.1	12.8	11.7	45°	6368	3815	2584	2543	2456	4909
60°-70°	1513.3	9.4	8.6	55°	4789	2108	1899	1860	1808	4278
70°-80°	758.9	4.7	4.3	65°	3089	1329	1254	1337	1337	3058
80°-90°	110.1	0.7	0.6	75°	1454	668	688	584	498	1547
90°-100°	0.0	0.0	0.0	85°	176	85	40	48	48	271
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°	6281.9	38.9	35.7							
0°-40°	9146.4	56.6	52.0							
0°-60°	13786.4	85.3	78.3							
0°-90°	16168.7	100.0	91.9							
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°	16168.7	100.0	91.9							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9854	9854	9854	9854	9854
2.5°	9869	9885	9897	9894	9903
5°	9873	9894	9899	9871	9866
7.5°	9845	9871	9808	9682	9627
10°	9789	9799	9594	9295	9157
12.5°	9707	9675	9249	8680	8448
15°	9594	9496	8756	7956	7659
17.5°	9450	9258	8158	7167	6773
20°	9280	8965	7524	6287	5812
22.5°	9080	8603	6843	5369	4902
25°	8859	8183	6094	4581	4197
27.5°	8614	7713	5318	3975	3734
30°	8348	7218	4597	3584	3442
32.5°	8057	6692	3977	3325	3272
35°	7748	6159	3513	3158	3101
37.5°	7427	5595	3178	2984	2959
40°	7087	5009	2941	2848	2822
42.5°	6730	4402	2765	2710	2658
45°	6368	3815	2584	2543	2456
47.5°	5989	3269	2425	2322	2273
50°	5607	2791	2274	2143	2168
52.5°	5201	2405	2098	2030	2001
55°	4789	2108	1899	1860	1808
57.5°	4372	1874	1721	1670	1678
60°	3944	1683	1596	1548	1576
62.5°	3516	1494	1425	1439	1473
65°	3089	1329	1254	1337	1337
67.5°	2665	1158	1143	1183	1151
70°	2251	973	1028	990	954
72.5°	1842	817	878	791	749
75°	1454	668	688	584	498
77.5°	1082	535	490	271	204
80°	736	400	247	125	104
82.5°	429	245	87	60	54
85°	176	85	40	48	48
87.5°	25	23	28	29	28
90°	0	0	0	0	0

(END OF REPORT)