

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: 236P320

Luminaire Tested: **HBI-632-N-UNV-EB82/PLUS-UPL-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 236P320  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: HBI-632-N-UNV-EB82/PLUS-UPL-U  
Description: HBI SERIES, FULL BODY STEEL HOUSING, WITH SIX T8 LAMPS  
NARROW DISTRIBUTION SPECULAR REFLECTOR WITH UPLIGHT  
Light Source: SIX T8 LINEAR FLUORESCENT LAMPS, F32T8 32W - 2850 LUMENS EA  
Ballast/Driver: -

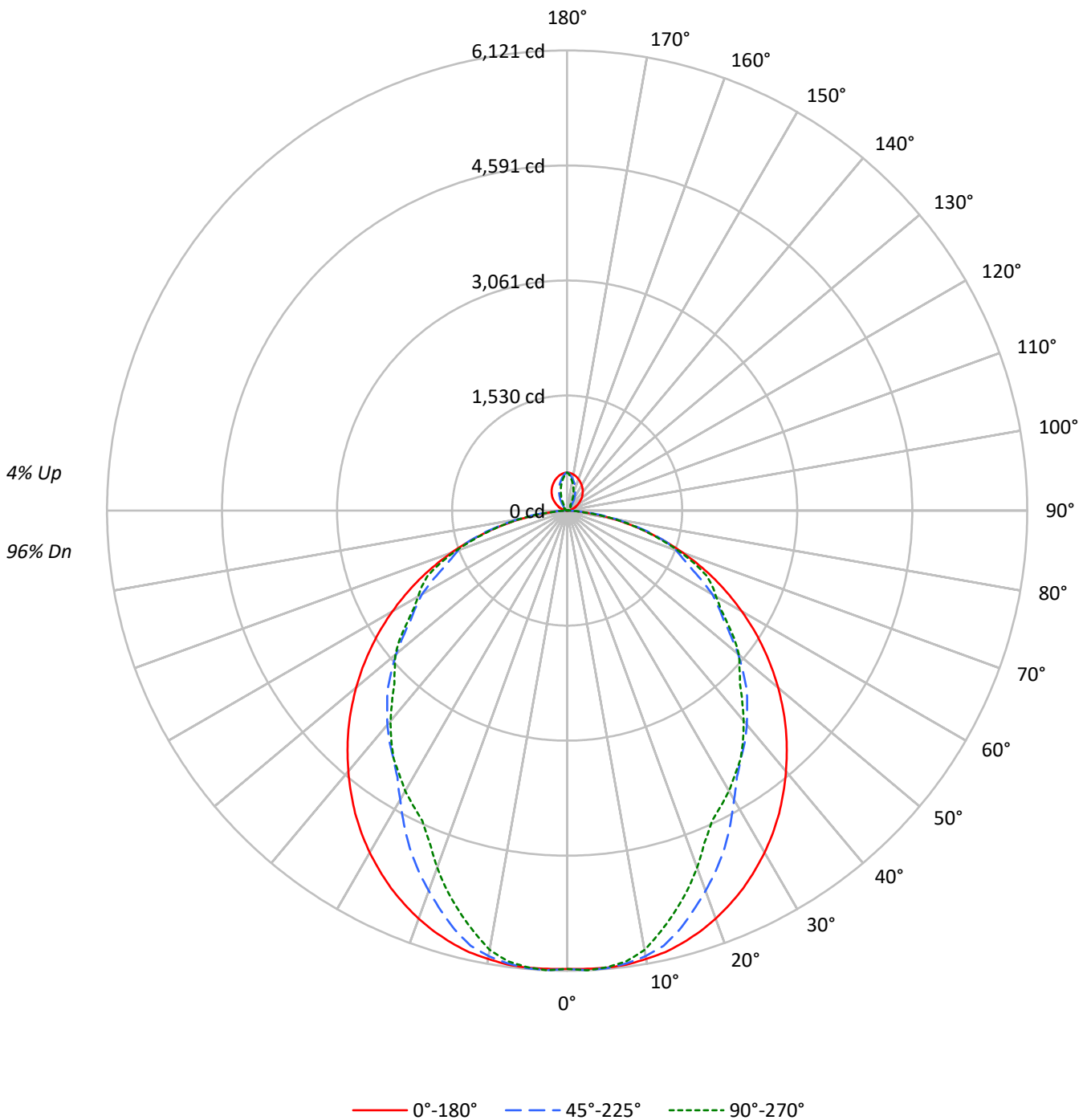
**Summary**

Lumens per Lamp: 2850 (6 lamps)  
Luminaire Lumens: 16154.1 lumens  
Efficiency: 94.5%  
Efficacy: 74.1 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.06 / 1.25  
Luminous Opening: Rectangular (W 1.23' x L: 3.92' x H: 0')  
CIE Type: Direct

Input Watts (W): 218  
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	112	112	112	112	109	109	109	109	103	103	103	98	98	98	93	93	93	91
1	102	98	93	90	99	95	91	88	90	87	85	86	84	81	82	80	78	76
2	93	85	79	73	90	83	77	72	79	74	70	75	71	68	72	69	66	64
3	85	75	67	61	82	73	66	60	70	64	59	67	62	57	64	60	56	54
4	78	66	58	52	75	65	57	51	62	55	50	59	54	49	57	52	48	46
5	71	59	51	45	69	58	50	44	56	49	44	53	47	43	51	46	42	40
6	66	54	45	39	64	52	45	39	50	43	38	48	42	38	47	41	37	35
7	61	49	40	35	59	48	40	34	46	39	34	44	38	33	43	37	33	31
8	57	44	36	31	55	44	36	31	42	35	30	41	35	30	39	34	30	28
9	53	41	33	28	52	40	33	28	39	32	27	38	32	27	36	31	27	25
10	50	38	30	25	49	37	30	25	36	29	25	35	29	25	34	28	24	23

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

	0°	45°	90°
0°	13630	13630	13630
5°	13698	13711	13684
10°	13751	13663	13470
15°	13777	13361	12796
20°	13743	12808	12025
25°	13672	12221	11240
30°	13559	11468	11117
35°	13418	10992	10986
40°	13219	10855	10662
45°	13018	10684	10280
50°	12748	10327	10379
55°	12419	9909	10123
60°	12011	9976	10231
65°	11475	9645	10819
70°	10682	10061	10381
75°	9546	9909	9408
80°	7751	8498	7931
85°	4464	5592	4053



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	579.6	3.6	3.4	0°	6096	6096	6096	6096	6096	
10°-20°	1617.8	10.0	9.5	5°	6103	6111	6109	6100	6097	581
20°-30°	2309.0	14.3	13.5	15°	5952	5914	5772	5584	5528	1680
30°-40°	2668.4	16.5	15.6	25°	5542	5387	4954	4626	4556	2553
40°-50°	2678.7	16.6	15.7	35°	4916	4539	4027	4019	4025	3073
50°-60°	2389.9	14.8	14.0	45°	4117	3534	3379	3282	3251	3172
60°-70°	1898.9	11.8	11.1	55°	3186	2616	2542	2619	2597	2846
70°-80°	1142.3	7.1	6.7	65°	2169	1777	1823	1996	2045	2142
80°-90°	272.1	1.7	1.6	75°	1105	973	1147	1106	1089	1170
90°-100°	12.8	0.1	0.1	85°	174	251	218	178	158	235
100°-110°	21.8	0.1	0.1	90°	5	5	6	7	7	8
110°-120°	38.5	0.2	0.2	95°	10	9	14	10	8	16
120°-130°	59.5	0.4	0.3	105°	64	18	14	10	11	68
130°-140°	87.3	0.5	0.5	115°	128	34	22	20	21	128
140°-150°	105.4	0.7	0.6	125°	205	61	46	30	30	184
150°-160°	122.3	0.8	0.7	135°	286	149	64	63	60	221
160°-170°	105.9	0.7	0.6	145°	356	244	130	75	79	223
170°-180°	44.0	0.3	0.3	155°	416	337	249	192	173	192
0°-30°	4506.4	27.9	26.4	165°	468	422	371	334	320	132
0°-40°	7174.8	44.4	42.0	175°	501	492	474	460	456	47
0°-60°	12243.3	75.8	71.6	180°	506	506	506	506	506	
0°-90°	15556.7	96.3	91.0							
90°-120°	73.1	0.5	0.4							
90°-150°	325.3	2.0	1.9							
90°-180°	597.0	3.7	3.5							
0°-180°	16154.1	100.0	94.5							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6096	6096	6096	6096	6096
2.5°	6101	6113	6118	6116	6121
5°	6103	6111	6109	6100	6097
7.5°	6091	6090	6075	6051	6046
10°	6057	6051	6018	5970	5933
12.5°	6017	5991	5929	5789	5738
15°	5952	5914	5772	5584	5528
17.5°	5872	5816	5580	5378	5304
20°	5776	5708	5383	5150	5054
22.5°	5665	5564	5178	4885	4778
25°	5542	5387	4954	4626	4556
27.5°	5402	5190	4702	4431	4430
30°	5252	4979	4442	4312	4306
32.5°	5090	4759	4203	4173	4157
35°	4916	4539	4027	4019	4025
37.5°	4725	4303	3883	3872	3843
40°	4529	4058	3719	3686	3653
42.5°	4325	3801	3542	3498	3447
45°	4117	3534	3379	3282	3251
47.5°	3891	3265	3171	3079	3110
50°	3665	3018	2969	2940	2984
52.5°	3429	2808	2749	2806	2805
55°	3186	2616	2542	2619	2597
57.5°	2938	2411	2386	2412	2417
60°	2686	2206	2231	2237	2288
62.5°	2428	2003	2023	2112	2177
65°	2169	1777	1823	1996	2045
67.5°	1901	1550	1666	1833	1825
70°	1634	1343	1539	1606	1588
72.5°	1368	1173	1377	1354	1330
75°	1105	973	1147	1106	1089
77.5°	849	799	892	875	863
80°	602	657	660	637	616
82.5°	371	450	433	405	382
85°	174	251	218	178	158
87.5°	39	80	52	54	55
90°	5	5	6	7	7
92.5°	11	15	20	12	6
95°	10	9	14	10	8
97.5°	24	11	12	10	8
100°	37	13	12	10	9
102.5°	45	16	12	10	9
105°	64	18	14	10	11
107.5°	81	22	16	14	12
110°	98	25	19	15	17



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	114	30	23	19	17
115°	128	34	22	20	21
117.5°	146	40	26	27	25
120°	165	42	31	27	29
122.5°	184	48	42	27	29
125°	205	61	46	30	30
127.5°	227	83	53	40	34
130°	248	106	60	54	47
132.5°	268	127	64	57	61
135°	286	149	64	63	60
137.5°	304	171	65	72	68
140°	323	195	76	77	78
142.5°	340	219	97	75	82
145°	356	244	130	75	79
147.5°	373	269	163	87	81
150°	387	292	190	114	94
152.5°	402	316	218	155	130
155°	416	337	249	192	173
157.5°	431	360	281	225	209
160°	444	381	312	259	244
162.5°	456	402	342	297	281
165°	468	422	371	334	320
167.5°	478	441	398	367	358
170°	487	460	424	399	392
172.5°	493	477	449	429	424
175°	501	492	474	460	456
177.5°	504	503	498	490	488
180°	506	506	506	506	506

(END OF REPORT)