

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: 236P243

Luminaire Tested: **HBL-632-M-UNV-EB82-UPL-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 236P243  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: HBL-632-M-UNV-EB82-UPL-U  
Description: OPEN HIGH BAY LUMINAIRE WITH MATTE REFLECTOR, MEDIUM  
DISTRIBUTION WITH UPLIGHT  
Light Source: SIX 32 WATT T8 - 3100 LUMENS EA  
Ballast/Driver: -

**Summary**

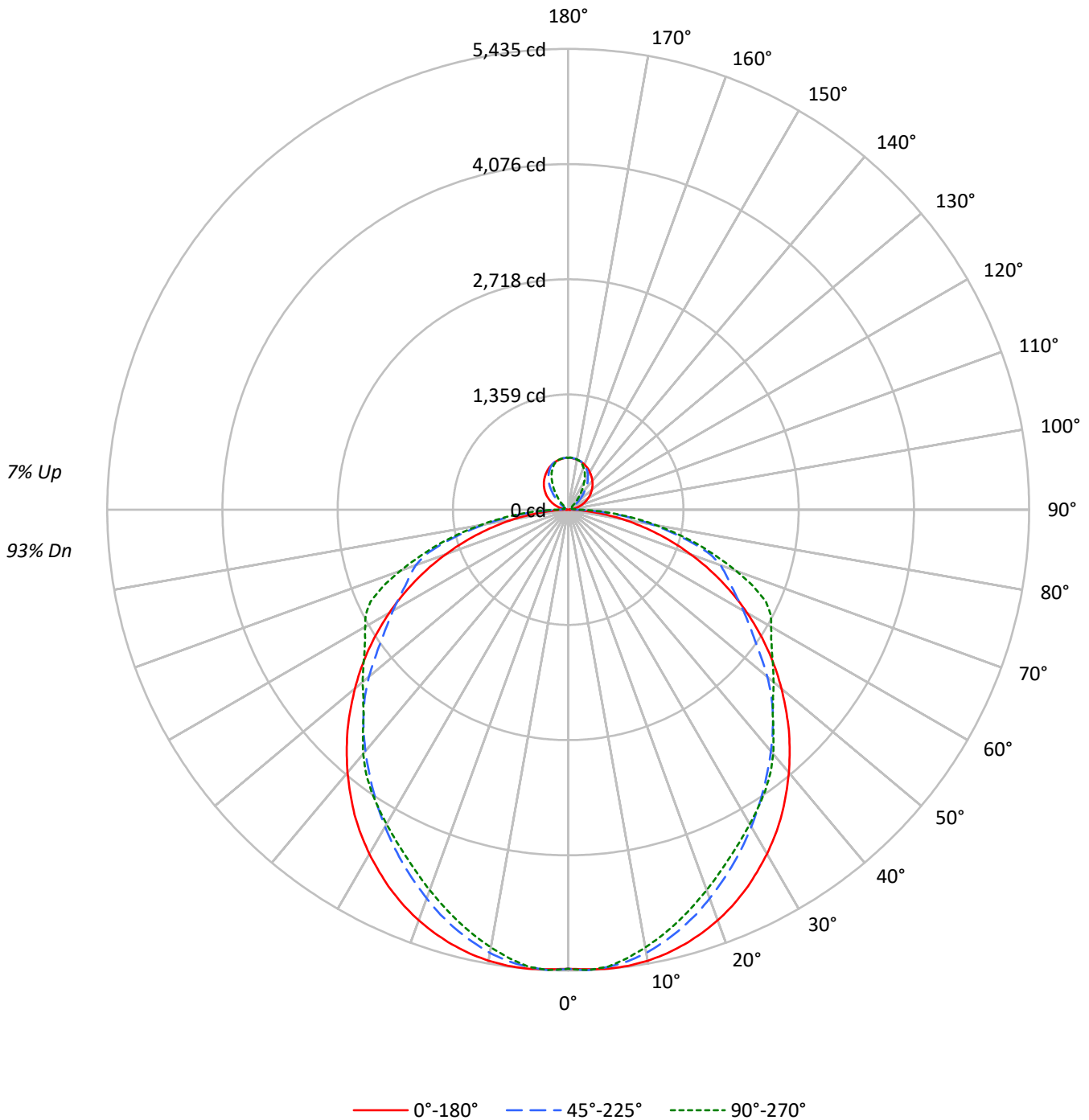
Lumens per Lamp: 3100 (6 lamps)  
Luminaire Lumens: 17225.5 lumens  
Efficiency: 92.6%  
Efficacy: 76.6 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.18 / 1.33  
Luminous Opening: Rectangular (W 1.62' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 225  
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	105	105	105	105	99	99	99	94	94	94	88	88	88	86
1	98	94	89	85	95	91	87	83	86	82	79	81	78	76	76	74	72	70
2	89	81	74	69	86	79	72	67	74	69	65	70	66	62	66	63	60	57
3	81	71	63	56	78	69	61	56	65	59	54	61	56	52	58	54	50	48
4	74	62	54	48	71	61	53	47	57	51	45	54	49	44	52	47	43	41
5	68	56	47	41	65	54	46	40	51	44	39	49	43	38	46	41	37	35
6	63	50	41	35	60	49	41	35	46	39	34	44	38	33	42	37	33	30
7	58	45	37	31	56	44	36	31	42	35	30	40	34	30	38	33	29	27
8	54	41	33	28	52	40	33	27	39	32	27	37	31	26	35	30	26	24
9	50	38	30	25	49	37	30	25	35	29	24	34	28	24	33	27	23	22
10	47	35	27	23	46	34	27	22	33	26	22	31	26	22	30	25	21	19

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

	0°	45°	90°
0°	8967	8967	8967
5°	9035	9000	8991
10°	9084	8927	8815
15°	9097	8779	8613
20°	9083	8598	8413
25°	9037	8420	8255
30°	8964	8255	8186
35°	8877	8123	8183
40°	8751	8040	8130
45°	8616	7995	7988
50°	8453	7899	8146
55°	8289	7761	8465
60°	8071	7906	9154
65°	7802	8295	10086
70°	7422	9262	10187
75°	6942	9732	10141
80°	6237	9622	10090
85°	5054	9690	10640



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	513.5	3.0	2.8	0°	5415	5415	5415	5415	5415	
10°-20°	1448.6	8.4	7.8	5°	5435	5429	5414	5401	5409	518
20°-30°	2149.1	12.5	11.6	15°	5306	5239	5121	5041	5024	1498
30°-40°	2567.4	14.9	13.8	25°	4946	4775	4608	4534	4518	2278
40°-50°	2663.2	15.5	14.3	35°	4391	4147	4018	4029	4048	2744
50°-60°	2490.6	14.5	13.4	45°	3679	3417	3414	3411	3411	2836
60°-70°	2155.7	12.5	11.6	55°	2871	2659	2688	2855	2932	2564
70°-80°	1469.7	8.5	7.9	65°	1991	1886	2117	2485	2574	1968
80°-90°	533.0	3.1	2.9	75°	1085	1150	1521	1568	1585	1149
90°-100°	68.0	0.4	0.4	85°	266	441	510	543	560	298
100°-110°	55.2	0.3	0.3	90°	6	46	88	120	131	19
110°-120°	83.5	0.5	0.4	95°	25	37	64	80	79	31
120°-130°	130.0	0.8	0.7	105°	118	31	44	44	43	125
130°-140°	197.4	1.1	1.1	115°	223	106	38	56	49	220
140°-150°	244.2	1.4	1.3	125°	321	244	98	47	41	286
150°-160°	234.1	1.4	1.3	135°	405	370	238	149	121	312
160°-170°	164.3	1.0	0.9	145°	478	474	398	316	287	299
170°-180°	58.0	0.3	0.3	155°	540	542	519	479	464	249
0°-30°	4111.3	23.9	22.1	165°	586	588	588	582	579	165
0°-40°	6678.7	38.8	35.9	175°	608	610	611	610	613	58
0°-60°	11832.4	68.7	63.6	180°	613	613	613	613	613	
0°-90°	15990.8	92.8	86.0							
90°-120°	206.7	1.2	1.1							
90°-150°	778.4	4.5	4.2							
90°-180°	1235.0	7.2	6.6							
0°-180°	17225.5	100.0	92.6							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5415	5415	5415	5415	5415
2.5°	5425	5429	5435	5430	5434
5°	5435	5429	5414	5401	5409
7.5°	5426	5409	5373	5335	5334
10°	5402	5374	5309	5248	5242
12.5°	5363	5313	5220	5149	5138
15°	5306	5239	5121	5041	5024
17.5°	5237	5144	5007	4912	4899
20°	5154	5035	4879	4791	4774
22.5°	5057	4912	4744	4661	4645
25°	4946	4775	4608	4534	4518
27.5°	4819	4629	4464	4404	4399
30°	4688	4477	4317	4279	4281
32.5°	4545	4315	4169	4152	4167
35°	4391	4147	4018	4029	4048
37.5°	4220	3969	3867	3901	3917
40°	4048	3787	3719	3762	3761
42.5°	3865	3603	3567	3597	3581
45°	3679	3417	3414	3411	3411
47.5°	3481	3225	3249	3243	3276
50°	3281	3035	3066	3103	3162
52.5°	3080	2845	2870	2984	3044
55°	2871	2659	2688	2855	2932
57.5°	2654	2469	2527	2739	2838
60°	2437	2279	2387	2646	2764
62.5°	2215	2085	2244	2566	2693
65°	1991	1886	2117	2485	2574
67.5°	1764	1678	2014	2329	2363
70°	1533	1479	1913	2096	2104
72.5°	1310	1306	1762	1829	1838
75°	1085	1150	1521	1568	1585
77.5°	868	1019	1259	1309	1318
80°	654	891	1009	1046	1058
82.5°	451	674	751	792	804
85°	266	441	510	543	560
87.5°	101	220	278	310	322
90°	6	46	88	120	131
92.5°	28	52	86	99	97
95°	25	37	64	80	79
97.5°	42	36	51	65	65
100°	68	36	43	53	56
102.5°	94	33	43	45	46
105°	118	31	44	44	43
107.5°	143	40	43	45	44
110°	170	54	47	46	45



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	199	78	43	47	47
115°	223	106	38	56	49
117.5°	248	139	42	49	54
120°	271	174	56	42	47
122.5°	296	209	72	41	41
125°	321	244	98	47	41
127.5°	342	279	129	63	51
130°	364	313	164	84	67
132.5°	385	344	201	114	90
135°	405	370	238	149	121
137.5°	424	398	277	188	158
140°	443	426	319	229	198
142.5°	462	451	360	272	241
145°	478	474	398	316	287
147.5°	495	493	433	359	331
150°	509	512	464	404	378
152.5°	526	528	494	445	423
155°	540	542	519	479	464
157.5°	553	557	543	510	499
160°	565	568	563	538	528
162.5°	575	578	577	563	556
165°	586	588	588	582	579
167.5°	592	596	595	593	592
170°	599	602	601	601	602
172.5°	604	606	607	606	607
175°	608	610	611	610	613
177.5°	613	612	613	613	616
180°	613	613	613	613	613

(END OF REPORT)