

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: 236P307

Luminaire Tested: **HBL-1032-N-UNV-EB83-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 236P307  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: HBL-1032-N-UNV-EB83-U  
Description: OPEN HIGH BAY LUMINAIRE WITH SPECULAR REFLECTOR, NARROW  
DISTRIBUTION, NO UPLIGHT  
Light Source: TEN 32 WATT T8 - 3100 LUMENS EA  
Ballast/Driver: -

**Summary**

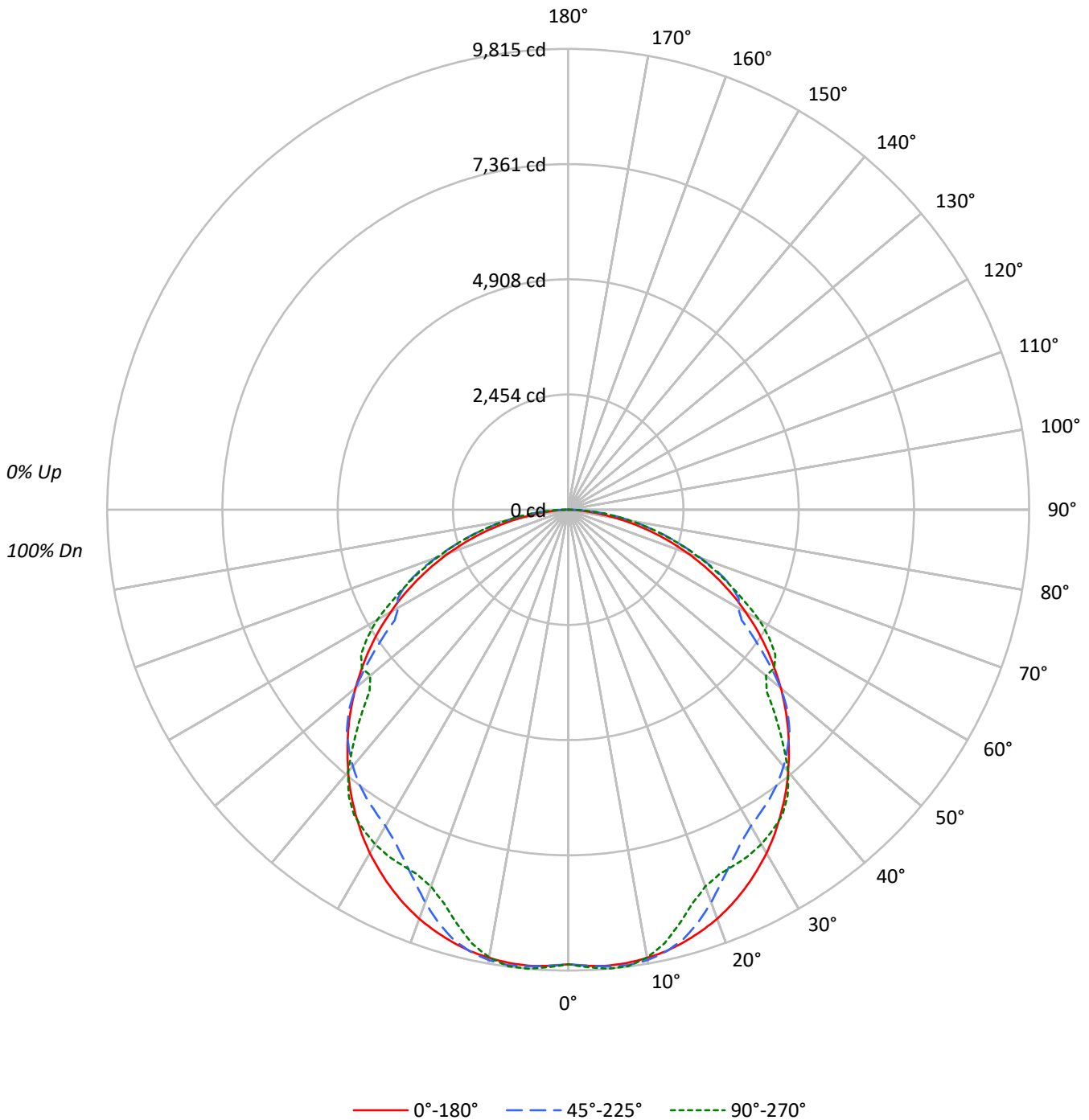
Lumens per Lamp: 3100 (10 lamps)  
Luminaire Lumens: 28275.3 lumens  
Efficiency: 91.2%  
Efficacy: 80.1 lumens/watt  
Spacing Criteria (0/90/45): 1.29 / 1.28 / 1.39  
Luminous Opening: Rectangular (W 2.17' x L: 3.83' x H: 0')  
CIE Type: Direct

Input Watts (W): 353  
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	106	106	106	106	101	101	101		97	97	97		93	93	93	91
1	99	94	90	87	96	92	89	85	88	85	82		85	82	80		81	79	78	76
2	90	82	75	70	87	80	74	69	77	72	68		74	70	66		71	68	65	63
3	82	72	64	58	79	70	63	57	67	61	56		65	60	55		63	58	54	52
4	75	63	55	49	72	62	54	49	60	53	48		58	52	47		56	51	47	45
5	69	57	48	42	67	56	48	42	54	47	41		52	46	41		50	45	40	38
6	63	51	43	37	61	50	42	36	48	41	36		47	41	36		45	40	35	34
7	59	46	38	32	57	45	38	32	44	37	32		43	36	32		41	36	31	30
8	55	42	34	29	53	41	34	29	40	33	29		39	33	28		38	32	28	26
9	51	39	31	26	50	38	31	26	37	30	26		36	30	26		35	29	25	24
10	48	36	28	23	47	35	28	23	34	28	23		33	27	23		33	27	23	21

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

	0°	45°	90°
0°	12548	12548	12548
5°	12683	12705	12769
10°	12752	12819	12743
15°	12790	12705	12255
20°	12790	12270	11777
25°	12731	11794	11952
30°	12638	11644	12309
35°	12500	11852	12567
40°	12331	12068	12326
45°	12141	12214	11461
50°	11916	11912	11081
55°	11650	11017	12167
60°	11314	10809	12177
65°	10874	11720	11662
70°	10257	11318	11246
75°	9329	10761	10661
80°	7844	9993	10038
85°	5011	9130	9249



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	930.8	3.3	3.0	0°	9682	9682	9682	9682	9682	
10°-20°	2644.0	9.4	8.5	5°	9749	9743	9766	9787	9815	928
20°-30°	3924.6	13.9	12.7	15°	9533	9589	9469	9226	9134	2691
30°-40°	4803.4	17.0	15.5	25°	8903	8851	8248	8254	8358	4102
40°-50°	4934.9	17.5	15.9	35°	7901	7512	7491	7829	7943	4942
50°-60°	4523.2	16.0	14.6	45°	6624	6087	6664	6415	6253	5106
60°-70°	3662.8	13.0	11.8	55°	5156	4986	4876	5204	5385	4605
70°-80°	2191.6	7.8	7.1	65°	3546	3602	3822	3820	3803	3506
80°-90°	657.8	2.3	2.1	75°	1863	2070	2149	2133	2129	1971
90°-100°	2.3	0.0	0.0	85°	337	584	614	622	622	431
100°-110°	0.0	0.0	0.0	90°	6	18	18	19	18	16
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	7499.4	26.5	24.2	165°	0	0	0	0	0	0
0°-40°	12302.8	43.5	39.7	175°	0	0	0	0	0	0
0°-60°	21760.9	77.0	70.2	180°	0	0	0	0	0	0
<b>0°-90°</b>	<b>28273.1</b>	<b>100.0</b>	<b>91.2</b>							
90°-120°	2.3	0.0	0.0							
90°-150°	2.3	0.0	0.0							
<b>90°-180°</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>							
0°-180°	28275.3	100.0	91.2							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9682	9682	9682	9682	9682
2.5°	9726	9710	9720	9738	9752
5°	9749	9743	9766	9787	9815
7.5°	9735	9750	9783	9787	9804
10°	9690	9737	9741	9701	9683
12.5°	9633	9680	9639	9509	9462
15°	9533	9589	9469	9226	9134
17.5°	9413	9462	9212	8872	8789
20°	9274	9296	8897	8577	8539
22.5°	9099	9090	8554	8361	8405
25°	8903	8851	8248	8254	8358
27.5°	8681	8567	7979	8179	8311
30°	8445	8245	7781	8102	8225
32.5°	8185	7896	7633	7989	8096
35°	7901	7512	7491	7829	7943
37.5°	7604	7126	7330	7639	7678
40°	7289	6756	7133	7352	7286
42.5°	6955	6402	6911	6940	6769
45°	6624	6087	6664	6415	6253
47.5°	6271	5795	6333	5903	5733
50°	5910	5532	5908	5396	5496
52.5°	5533	5265	5392	5185	5533
55°	5156	4986	4876	5204	5385
57.5°	4766	4690	4379	5007	5069
60°	4365	4373	4170	4676	4698
62.5°	3963	4024	4094	4277	4237
65°	3546	3602	3822	3820	3803
67.5°	3127	3120	3441	3390	3385
70°	2707	2620	2987	2972	2968
72.5°	2284	2259	2556	2553	2543
75°	1863	2070	2149	2133	2129
77.5°	1452	1737	1737	1730	1731
80°	1051	1324	1339	1342	1345
82.5°	671	946	966	969	969
85°	337	584	614	622	622
87.5°	108	265	287	286	287
90°	6	18	18	19	18
92.5°	0	0	0	0	0
95°	0	0	0	0	0
97.5°	0	0	0	0	0
100°	0	0	0	0	0
102.5°	0	0	0	0	0
105°	0	0	0	0	0
107.5°	0	0	0	0	0
110°	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0	0	0	0	0
115°	0	0	0	0	0
117.5°	0	0	0	0	0
120°	0	0	0	0	0
122.5°	0	0	0	0	0
125°	0	0	0	0	0
127.5°	0	0	0	0	0
130°	0	0	0	0	0
132.5°	0	0	0	0	0
135°	0	0	0	0	0
137.5°	0	0	0	0	0
140°	0	0	0	0	0
142.5°	0	0	0	0	0
145°	0	0	0	0	0
147.5°	0	0	0	0	0
150°	0	0	0	0	0
152.5°	0	0	0	0	0
155°	0	0	0	0	0
157.5°	0	0	0	0	0
160°	0	0	0	0	0
162.5°	0	0	0	0	0
165°	0	0	0	0	0
167.5°	0	0	0	0	0
170°	0	0	0	0	0
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)