

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: P30721

Luminaire Tested: **ART-2OP-228T5-WO-UNV-EBT1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P30721
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: ART-2OP-228T5-WO-UNV-EBT1
Description: METALUX RECESSED TROFFER & PARABOLIC FLUORESCENT 2X4 RETROFIT KIT WITH WHITE OPTICS REFLECTOR, & 12 CELL 2" NOMINAL DEEP STEEL LOUVER, FACETED BLADES WITH A MATTE WHITE FINISH, KIT INSTALLED IN GT TROFFER
Light Source: (2) TWO LINEAR FLUORESCENT LAMPS, F28T5 28W - 2900 LUMENS EA, 3500K
Ballast/Driver: -
ULT B228PUNV-C

Summary

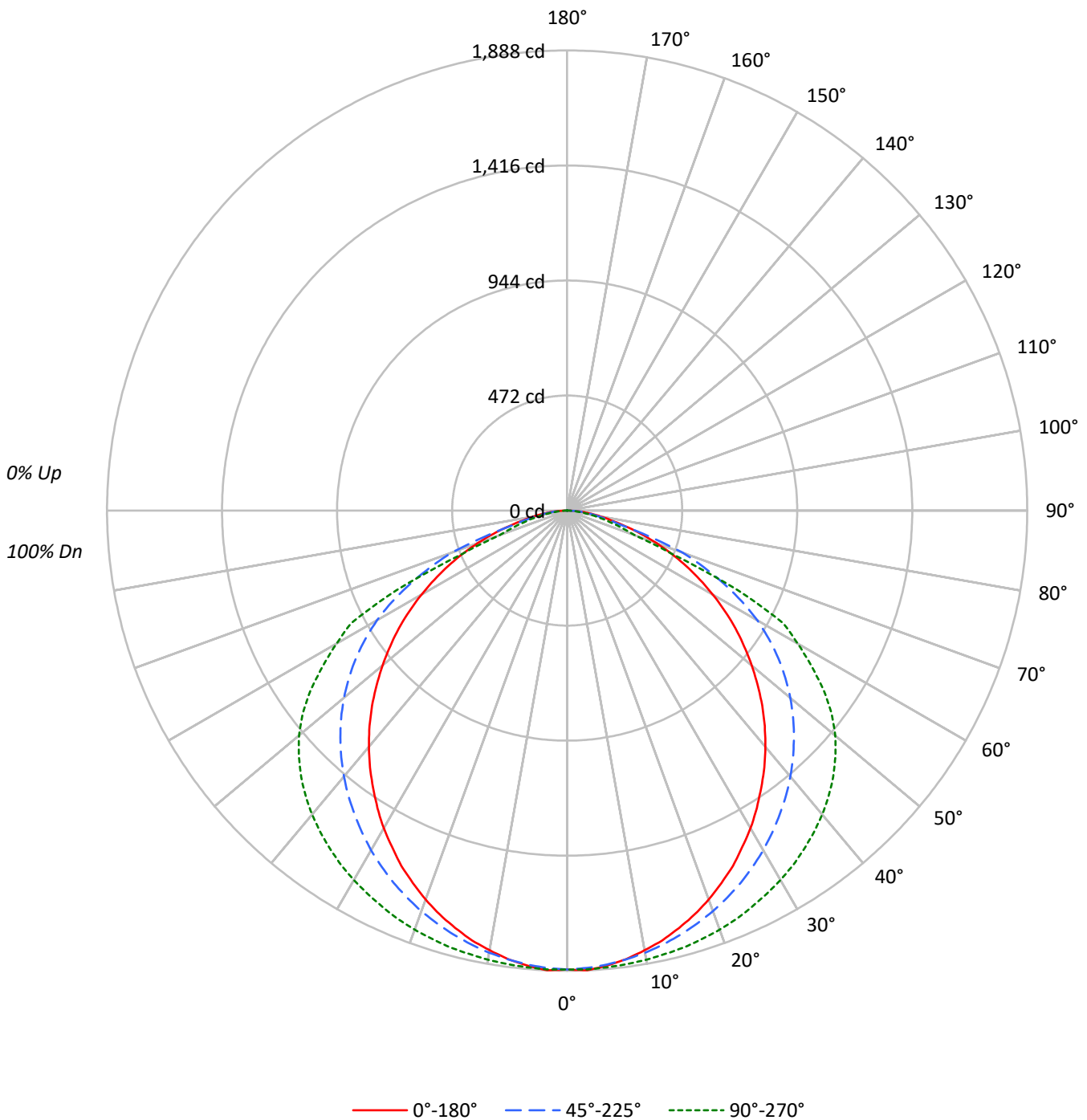
Lumens per Lamp: 2900 (2 lamps)
Luminaire Lumens: 5363.1 lumens
Efficiency: 92.5%
Efficacy: 85.4 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.39 / 1.41
Luminous Opening: Rectangular (W 1.75' x L: 3.83' x H: 0')
CIE Type: Direct

Input Watts (W): 62.8
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	110	110	110	110	108	108	108	108	103	103	103		98	98	98		94	94	94	92
1	101	97	93	90	99	95	91	88	91	88	85		87	85	83		84	82	80	79
2	92	85	79	73	90	83	77	73	80	75	71		77	73	69		74	71	68	66
3	84	74	67	61	82	73	66	61	70	64	60		68	63	58		65	61	57	55
4	77	66	58	52	75	65	57	51	62	56	51		60	55	50		58	53	49	47
5	71	59	51	44	69	58	50	44	56	49	44		54	48	43		52	47	43	41
6	65	53	45	39	63	52	44	39	50	43	38		49	43	38		47	42	37	36
7	60	48	40	34	59	47	39	34	46	39	34		44	38	33		43	37	33	31
8	56	44	36	30	55	43	35	30	42	35	30		41	34	30		39	34	30	28
9	52	40	32	27	51	39	32	27	38	32	27		37	31	27		36	31	27	25
10	49	37	30	25	48	36	29	25	35	29	24		35	29	24		34	28	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3021	3021	3021
5°	3018	3012	3030
10°	2985	3001	3048
15°	2945	2992	3081
20°	2899	2986	3125
25°	2849	2983	3176
30°	2788	2981	3242
35°	2719	2979	3320
40°	2650	2985	3410
45°	2569	2986	3504
50°	2469	2983	3585
55°	2361	2963	3595
60°	2218	2891	3508
65°	2046	2692	2935
70°	1830	2360	1389
75°	1531	1395	1128
80°	1284	1155	896
85°	1160	976	681



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	177.8	3.3	3.1	0°	1883	1883	1883	1883	1883	
10°-20°	509.7	9.5	8.8	5°	1874	1866	1870	1874	1881	178
20°-30°	779.1	14.5	13.4	15°	1773	1775	1801	1830	1855	500
30°-40°	956.8	17.8	16.5	25°	1609	1623	1685	1749	1794	740
40°-50°	1020.3	19.0	17.6	35°	1388	1423	1521	1628	1695	869
50°-60°	942.7	17.6	16.3	45°	1132	1183	1316	1456	1544	872
60°-70°	662.9	12.4	11.4	55°	844	911	1059	1201	1285	752
70°-80°	253.9	4.7	4.4	65°	539	609	709	788	773	534
80°-90°	59.8	1.1	1.0	75°	247	275	225	191	182	267
90°-100°	0.1	0.0	0.0	85°	63	60	53	43	37	67
100°-110°	0.0	0.0	0.0	90°	0	1	1	1	1	4
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°	1466.7	27.3	25.3	165°	0	0	0	0	0	0
0°-40°	2423.5	45.2	41.8	175°	0	0	0	0	0	0
0°-60°	4386.5	81.8	75.6	180°	0	0	0	0	0	0
0°-90°	5363.0	100.0	92.5							
90°-120°	0.1	0.0	0.0							
90°-150°	0.1	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	5363.1	100.0	92.5							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1883	1883	1883	1883	1883
2.5°	1888	1879	1878	1878	1884
5°	1874	1866	1870	1874	1881
7.5°	1856	1850	1857	1867	1877
10°	1832	1829	1842	1857	1871
12.5°	1806	1804	1823	1845	1863
15°	1773	1775	1801	1830	1855
17.5°	1738	1742	1776	1815	1843
20°	1698	1705	1749	1795	1830
22.5°	1654	1666	1718	1774	1814
25°	1609	1623	1685	1749	1794
27.5°	1556	1577	1648	1722	1773
30°	1505	1528	1609	1693	1750
32.5°	1448	1477	1566	1662	1725
35°	1388	1423	1521	1628	1695
37.5°	1329	1366	1475	1590	1663
40°	1265	1308	1425	1550	1628
42.5°	1200	1247	1372	1505	1588
45°	1132	1183	1316	1456	1544
47.5°	1060	1116	1258	1403	1493
50°	989	1049	1195	1344	1436
52.5°	915	981	1129	1277	1368
55°	844	911	1059	1201	1285
57.5°	767	840	982	1112	1189
60°	691	764	901	1010	1093
62.5°	614	688	809	912	999
65°	539	609	709	788	773
67.5°	465	530	607	559	466
70°	390	448	503	332	296
72.5°	318	362	351	241	233
75°	247	275	225	191	182
77.5°	184	188	169	147	137
80°	139	139	125	107	97
82.5°	99	97	86	72	64
85°	63	60	53	43	37
87.5°	29	27	23	18	15
90°	0	1	1	1	1
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)