

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: P30718

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P30718
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: ART-2OP-228T5-UNV-EBT1
Description: METALUX RECESSED TROFFER & PARABOLIC FLUORESCENT 2X4 RETROFIT KIT WITH WHITE PAINTED 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: 2750 (2 lamps)
Luminaire Lumens: 5158.2 lumens
Efficiency: 93.8%
Efficacy: 83.1 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

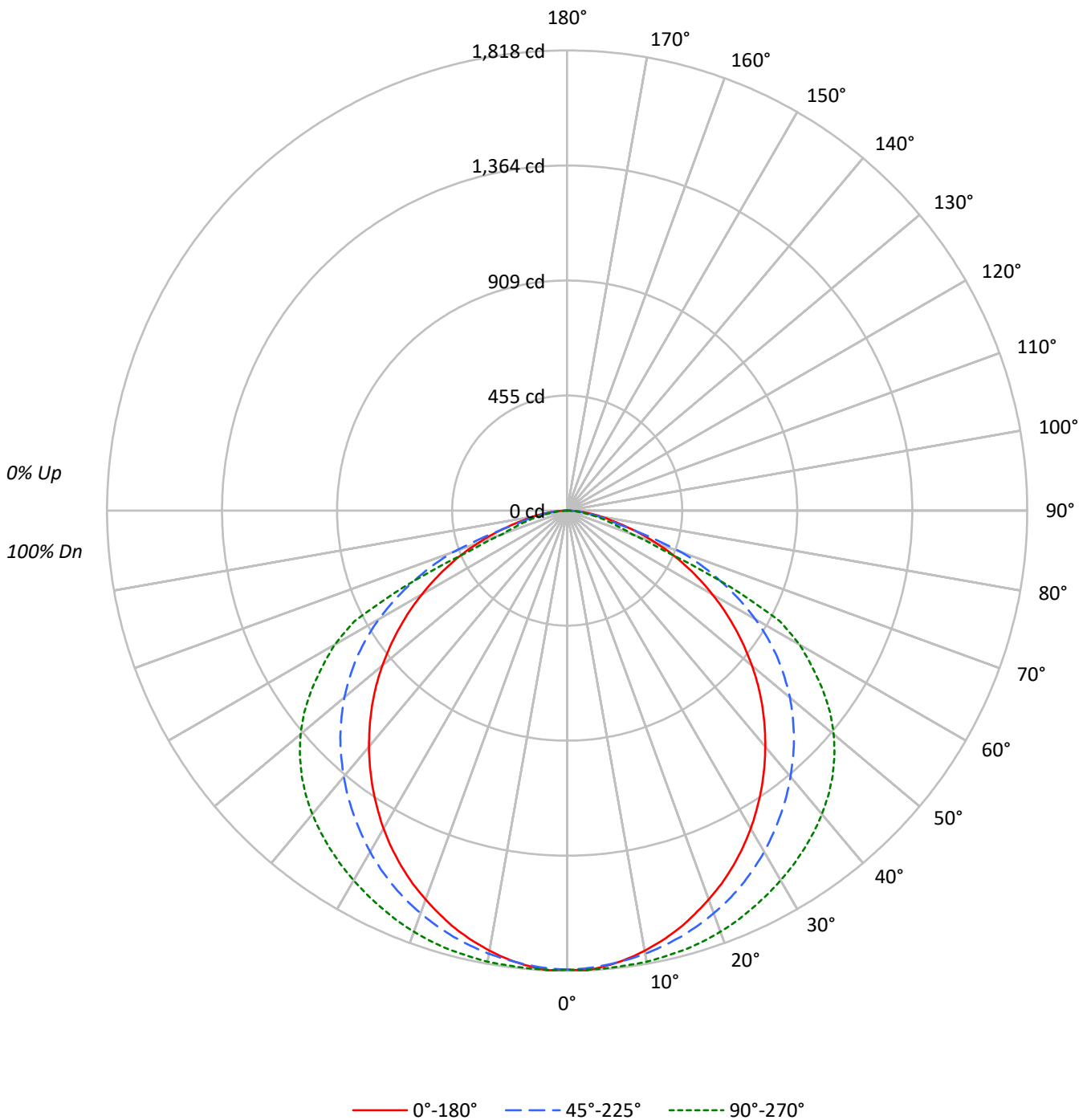
Input Watts (W): 62.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	104	104	104		100	100	100		96	96	96	94
1	103	98	95	91	100	96	93	90	92	89	87		89	86	84		85	83	82	80
2	93	86	80	75	91	84	79	74	81	76	72		78	74	70		75	72	69	67
3	85	76	68	62	83	74	67	62	71	65	60		69	64	59		66	62	58	56
4	78	67	59	53	76	66	58	52	63	57	52		61	55	51		59	54	50	48
5	72	60	51	45	70	59	51	45	57	50	44		55	49	44		53	48	43	42
6	66	54	45	39	64	53	45	39	51	44	39		50	43	38		48	42	38	36
7	61	49	40	35	60	48	40	35	46	39	34		45	39	34		44	38	34	32
8	57	44	36	31	55	44	36	31	42	35	31		41	35	30		40	34	30	28
9	53	41	33	28	52	40	33	28	39	32	27		38	32	27		37	31	27	25
10	50	37	30	25	49	37	30	25	36	29	25		35	29	25		34	29	25	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2911	2911	2911
5°	2907	2902	2923
10°	2877	2897	2949
15°	2839	2894	2983
20°	2792	2891	3024
25°	2744	2889	3068
30°	2688	2885	3126
35°	2623	2877	3197
40°	2551	2876	3280
45°	2473	2877	3365
50°	2379	2868	3432
55°	2266	2839	3446
60°	2128	2757	3405
65°	1967	2578	2673
70°	1750	2252	1281
75°	1463	1314	1060
80°	1238	1090	850
85°	1086	921	644



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	171.5	3.3	3.1	0°	1814	1814	1814	1814	1814	
10°-20°	492.7	9.6	9.0	5°	1805	1798	1802	1807	1815	171
20°-30°	753.5	14.6	13.7	15°	1709	1713	1742	1773	1796	482
30°-40°	923.5	17.9	16.8	25°	1550	1571	1632	1692	1733	714
40°-50°	982.8	19.1	17.9	35°	1339	1379	1469	1567	1632	837
50°-60°	904.9	17.5	16.5	45°	1090	1147	1268	1399	1483	840
60°-70°	631.6	12.2	11.5	55°	810	877	1015	1147	1232	724
70°-80°	240.6	4.7	4.4	65°	518	584	679	749	704	513
80°-90°	57.0	1.1	1.0	75°	236	261	212	182	171	255
90°-100°	0.2	0.0	0.0	85°	59	58	50	41	35	64
100°-110°	0.0	0.0	0.0	90°	0	1	1	2	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°	1417.6	27.5	25.8	165°	0	0	0	0	0	0
0°-40°	2341.2	45.4	42.6	175°	0	0	0	0	0	0
0°-60°	4228.8	82.0	76.9	180°	0	0	0	0	0	0
0°-90°	5158.0	100.0	93.8							
90°-120°	0.2	0.0	0.0							
90°-150°	0.2	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	5158.2	100.0	93.8							



TEST NUMBER: P30718

CATALOG NUMBER: ART-2OP-228T5-UNV-EBT1

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1814	1814	1814	1814	1814
2.5°	1818	1810	1810	1810	1816
5°	1805	1798	1802	1807	1815
7.5°	1788	1782	1791	1802	1812
10°	1766	1763	1778	1794	1810
12.5°	1739	1740	1761	1785	1803
15°	1709	1713	1742	1773	1796
17.5°	1673	1682	1719	1758	1785
20°	1635	1648	1693	1739	1771
22.5°	1595	1611	1665	1717	1754
25°	1550	1571	1632	1692	1733
27.5°	1502	1527	1596	1664	1711
30°	1451	1480	1557	1634	1687
32.5°	1396	1431	1514	1602	1661
35°	1339	1379	1469	1567	1632
37.5°	1280	1326	1423	1530	1601
40°	1218	1269	1373	1490	1566
42.5°	1155	1209	1321	1447	1527
45°	1090	1147	1268	1399	1483
47.5°	1023	1082	1209	1347	1432
50°	953	1016	1149	1287	1375
52.5°	882	947	1083	1223	1309
55°	810	877	1015	1147	1232
57.5°	737	806	941	1064	1146
60°	663	732	859	975	1061
62.5°	591	659	772	884	948
65°	518	584	679	749	704
67.5°	446	506	585	518	415
70°	373	426	480	310	273
72.5°	302	344	329	227	216
75°	236	261	212	182	171
77.5°	177	181	160	140	129
80°	134	133	118	102	92
82.5°	95	94	82	69	61
85°	59	58	50	41	35
87.5°	27	26	21	17	14
90°	0	1	1	2	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



TEST NUMBER: P30718

CATALOG NUMBER: ART-2OP-228T5-UNV-EBT1

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)