

# COOPER LIGHTING SOLUTIONS - METALUX®

## DESCRIPTION

The New *Commercial* Retrofit Kit provides the best price-performance combination on the market when compared to new construction installs or traditional lamp/ballast replacements. Achieve 30% or more in energy savings immediately without the added renovation and disposal costs associated with new installs. The *Commercial* Retrofit Kit is a pre-wired assembly that decreases install time without compromising quality of light, making this retrofit kit the fastest and most effective solution for increasing your return on investment. Retrofit existing parabolic or troffer 2' x 4' or 2' x 2' luminaires as low as 3-1/4" deep. Use the *Commercial* retrofit kit for any commercial office, educational, hospital or retail merchandising application where faster payback is important.

<b>Catalog #</b>		<b>Type</b>
<b>Project</b>		
<b>Comments</b>		<b>Date</b>
<b>Prepared by</b>		

## SPECIFICATION FEATURES

### Construction

The retrofit kit assembly consists of three components and fits into most parabolics and troffers. Universal brackets are made from code gauge steel and come pre-wired to ballast and sockets. Kits are pre-assembled and ready for quick, easy install right out of the box. A one-piece high reflectance white reflector installs without any hardware.

**Minimum housing depth = 3-1/4"**

### Ready-Set

Pre-installed self-tapping screws easily penetrates existing fixture body and ends. Leveling flange aligns, supports, and holds hardware in place, letting you hold the brackets with one hand while driving in screws. No parts bag or extra hardware needed.

### Electrical

Standard Class "P" electronic ballast with captive hardware for ease of install. No ballast option available. Push-in lampholders. UL/cUL Listed. Suitable for damp locations.

### Optics

One piece high reflectance white reflector (min. 91%) installs without any hardware. Optional 97% reflective White Optics material is available to help further maximize kit efficiency, distribution, energy savings and payback.



## Commercial T8 Retrofit Kit

2U1-5/8, 217, 317  
232, 332

2 OR 3 LAMP T8 TROFFER AND PARABOLIC RETROFIT KIT

Patent Pending



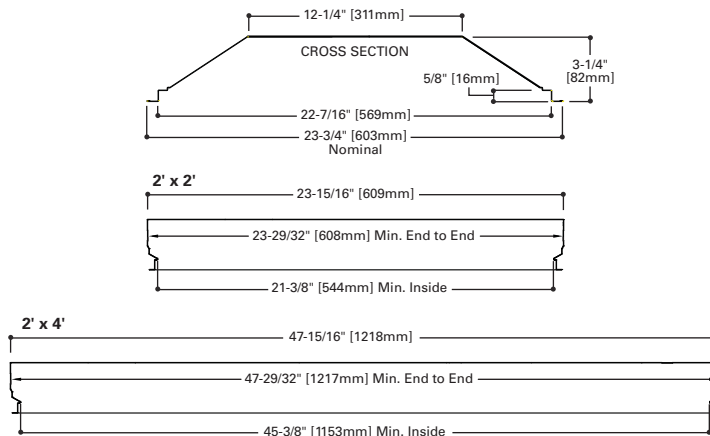
Advanced Retrofit Technologies



IMPROVING LIGHTING EFFICIENCY AND DESIGN

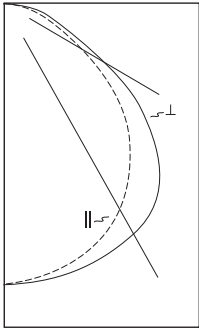
## RETROFIT COMPATIBILITY

The *Commercial* retrofit kit was designed to upgrade troffer or parabolic fixtures from all major manufacturers that have the following minimum dimensions:



Before ordering refer to these dimensions as a reference or contact your local representative for a trial install prior to ordering large job quantities.

PHOTOMETRICS



**ART-2CRK-232**  
Electronic Ballast  
(2) 32W T8 lamps  
2850 lumens.

Spacing criterion:  
(II) 1.3 x mounting height, (L) 1.4 x mounting height.

Efficiency = 83.8%

Test Report:  
ART-2CRK-232.IES

LER = FL-80

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = \$3.00

**Coefficients of Utilization**

rc	Effective floor cavity reflectance																		
	80%				70%				20%										
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0%	
<b>RCR</b>	<b>0</b>	100	100	100	100	97	97	97	97	93	93	93	89	89	89	85	85	85	84
	<b>1</b>	91	88	84	81	89	86	83	80	82	80	77	79	77	75	76	74	73	71
	<b>2</b>	84	77	71	67	81	75	70	66	72	68	64	70	66	63	67	64	62	60
	<b>3</b>	76	68	61	56	74	67	60	55	64	59	54	62	57	54	60	56	53	51
	<b>4</b>	70	60	53	48	68	59	53	47	57	51	47	55	50	46	53	49	45	44
	<b>5</b>	65	54	47	41	63	53	46	41	51	45	41	50	44	40	48	43	40	38
	<b>6</b>	60	49	41	36	58	48	41	36	46	40	36	45	39	35	44	39	35	33
	<b>7</b>	55	44	37	32	54	43	37	32	42	36	32	41	35	31	40	35	31	29
	<b>8</b>	51	40	33	28	50	40	33	28	39	33	28	38	32	28	37	32	28	26
	<b>9</b>	48	37	30	26	47	36	30	25	36	30	25	35	29	25	34	29	25	24
	<b>10</b>	45	34	28	23	44	34	27	23	33	27	23	32	27	23	31	26	23	21

**Zonal Lumen Summary**

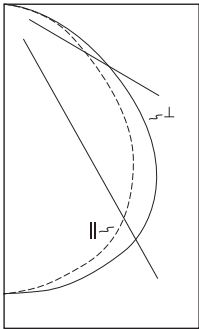
Zone	Lumens	%Lamp	%Fixture
0-30	1364	23.9	28.6
0-40	2273	39.9	47.6
0-60	3694	69.5	82.0
0-90	4775	83.8	100.0
0-180	4775	83.8	100.0

**Luminance Data**

Angle In Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2470	2823	3119
55	2055	2389	2675
65	1612	1723	1945
75	1378	1316	1660
85	1637	1786	2121

**Candela**

Angle	Along II	45°	Across L
0	1704	1704	1704
5	1690	1697	1705
10	1668	1685	1701
15	1631	1664	1692
20	1583	1633	1675
25	1519	1589	1647
30	1439	1532	1607
35	1340	1458	1552
40	1221	1362	1477
45	1077	1231	1360
50	909	1056	1180
55	727	845	946
60	559	636	708
65	420	449	507
70	309	301	358
75	220	210	265
80	155	157	195
85	88	96	114
90	9	22	30



**ART-2CRK-WO-232**  
Electronic Ballast  
(2) 32W T8 lamps  
2850 lumens.

Spacing criterion:  
(II) 1.2 x mounting height, (L) 1.4 x mounting height.

Efficiency = 90.9%

Test Report:  
ART-2CRK-WO-232.IES

LER = FL-85

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = \$2.82

**Coefficients of Utilization**

rc	Effective floor cavity reflectance																		
	80%				70%				20%										
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0%	
<b>RCR</b>	<b>0</b>	108	108	108	108	106	106	106	106	101	101	101	97	97	97	93	93	93	91
	<b>1</b>	99	95	91	88	97	93	90	87	89	86	84	86	83	81	82	81	79	77
	<b>2</b>	91	84	78	73	88	82	76	72	79	74	70	76	72	68	73	70	67	65
	<b>3</b>	83	74	67	61	81	72	66	60	70	64	59	67	62	58	65	61	57	55
	<b>4</b>	76	66	58	52	74	64	57	52	62	56	51	60	55	50	58	53	49	48
	<b>5</b>	70	59	51	45	68	58	50	45	56	49	44	54	48	44	52	47	43	41
	<b>6</b>	65	53	45	39	63	52	45	39	50	44	39	49	33	38	48	42	38	36
	<b>7</b>	60	48	40	35	59	47	40	35	46	39	34	45	39	34	43	38	34	32
	<b>8</b>	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	34	30	29
	<b>9</b>	52	40	33	28	51	40	33	28	39	32	28	38	32	28	37	31	27	26
	<b>10</b>	49	37	30	25	48	37	30	25	36	29	25	35	29	25	34	29	25	23

**Zonal Lumen Summary**

Zone	Lumens	%Lamp	%Fixture
0-30	1507	26.4	29.1
0-40	2491	43.7	48.1
0-60	4298	75.4	82.9
0-90	5184	90.9	100.0
0-180	5184	90.9	100.0

**Luminance Data**

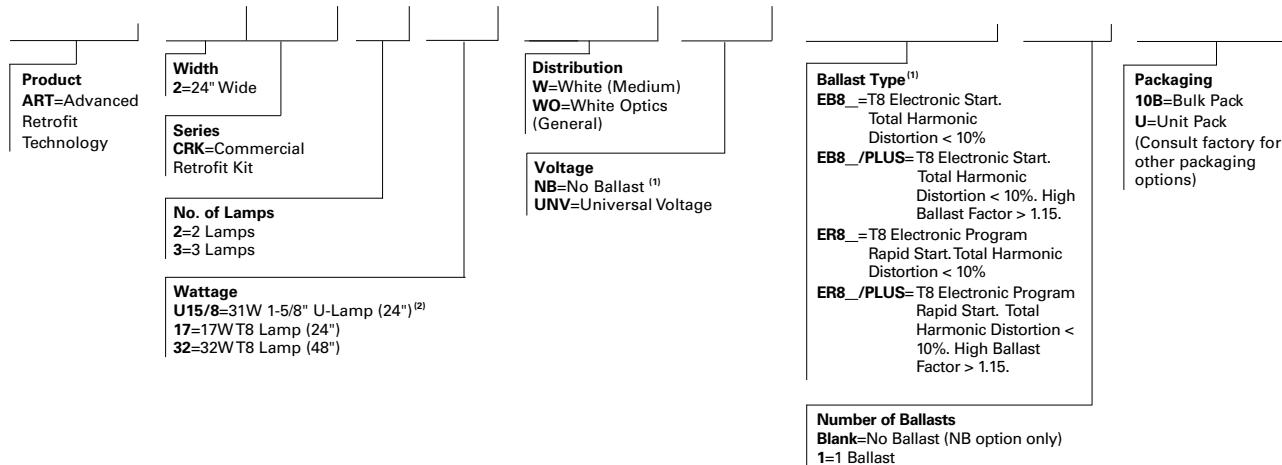
Angle In Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2642	2942	3229
55	2298	2641	2850
65	1907	1903	2210
75	1610	1259	1880
85	1786	1675	2307

**Candela**

Angle	Along II	45°	Across L
0	1895	1895	1895
5	1878	1887	1897
10	1852	1870	1886
15	1813	1843	1871
20	1758	1803	1845
25	1686	1750	1807
30	1591	1678	1753
35	1472	1576	1678
40	1325	1439	1568
45	1152	1283	1408
50	976	1118	1216
55	813	934	1008
60	654	720	787
65	497	496	576
70	362	311	410
75	257	201	300
80	181	152	220
85	96	90	124
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: ART-2CRK-232-W-UNV-EB81-10B



NOTES: <sup>(1)</sup>When using Commercial Kits without ballasts, indicate ballast type and system to designate shunted or unshunted sockets. Ex: ART-2CRK-232-W-NB-ER8. <sup>(2)</sup>2 lamp 2' x 2' only.