

## DESCRIPTION

Designed to meet the toughest requirements in cleanroom and BSL applications. For use in horizontal or non-laminar air flow rooms, the enclosed and gasketed housing and one-piece door protect against infiltration of airborne bacteria. Die-formed edges on the door frame and the hole-free design of the housing prevent air exchange between the fixture and the plenum, allowing for re-lamping without contaminating the area. One piece gaskets are included on lens, for easy replacement, and on the door edge. The CRL is suitable for 9/16", 1" and 1-1/2" T-Grid ceilings. UL/cUL listed for wet locations. IP 65 rated and manufactured in accordance with ISO 14644, NSF and Federal Standard 209E in a certified ISO 9001:2000 facility.

## SPECIFICATION FEATURES

### Application

The CRL is suitable for use in I.E.S. Class 100, 1,000, 10,000, and 100,000 clean room environments. Applications include cleanrooms, Biomedical Safety Labs, food processing/testing centers and pharmaceutical labs.

### Fasteners

Flush mounted, stainless steel machine screws and molded washers ensure a proper seal; secured through captive cage nuts in the housing, and evenly spaced to compress gasketing on all sides.

### Housing

Die-Formed, 20 ga. CRS with tightly butted, seam welded, sealed end caps. Contains no holes that would allow air passage. Standard white high reflectance polyester powder coat finish. Gloss: 85%; Reflectance: 93%; Hardness: 2H; Salt Spray: 500 Hours.

### Hinge

Two braided, stainless steel cables on side of door provide hinging.

### Door

One-piece, 20 ga. door with baked white polyester powder coat. Fully gasketed, outside door with dieformed edges eliminates seams which could entrap microscopic contaminants. Other doors also available.

### Gasket

White, closed cell one-piece silicone gasketing is standard around perimeter of lens, and around perimeter of door. Additional fixture-to-ceiling gasketing is available.

### Access

Gasketed access plate on top of housing with two flattened, 7/8" diameter for 1/2" trade size knockouts allows connection of vapor-tight conduit fitting. Optional, above-ceiling, top access

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

door for luminaire maintenance is available.

### Lens

Lens is clear, 0.125" thick Pattern 12 acrylic with prisms positioned inside the fixture providing a smooth surface on the outside for easy cleaning.

### Lamps

T5, T8, Biaxial.

### Lens Retention

Unique, one-piece Particulock™ lens retention system utilizes continuous, media clampdowns to sandwich gasketing and integrate lens and door frame for equalized pressure on the lens.

### Ballast

Standard Class P, CBM/RTL ballast.

### Labels

UL/cUL listed, standard wet label, NSF.



## CRL

1x2

1x4

Cleanroom

### RECESSED GRID

Inset Flat Door  
9/16", 1" and 1-1/2"  
T-Grid ceilings

IP65 Rated

## TRI-SEAL™



## ENERGY DATA

Input Watts:

### STD Ballasts & STD Lamps

(2) 40W Biaxial Fluorescents: 82W

### T5 ES Ballast & STD Lamps

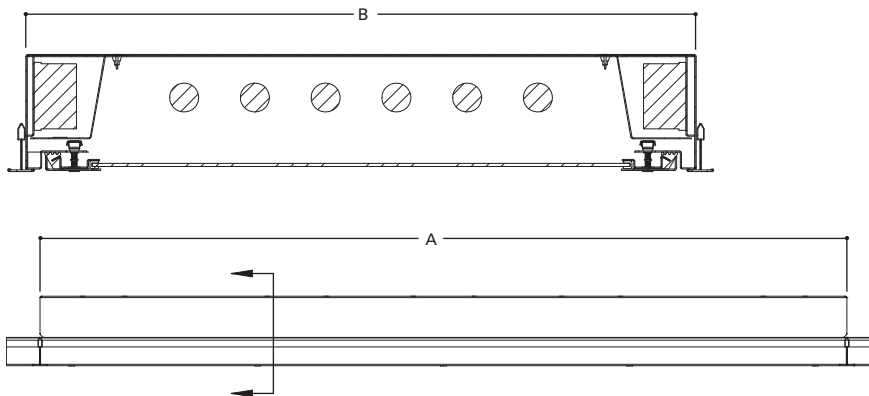
- (2) 14W T5 Fluorescents: 38W
- (3) 14W T5 Fluorescents: 57W
- (2) 24W T5 Fluorescents: 52W
- (3) 24W T5 Fluorescents: 78W
- (2) 28W T5 Fluorescents: 68W
- (3) 28W T5 Fluorescents: 102W
- (2) 54W T5 Fluorescents: 106W
- (3) 54W T5 Fluorescents: 160W

### T8 ES Ballast & STD Lamps

- (2) 17W T8 Fluorescents: 36W
- (3) 17W T8 Fluorescents: 56W
- (2) 32W T8 Fluorescents: 71W
- (3) 32W T8 Fluorescents: 108W

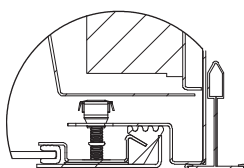
### Electronic Ballast Data

Consult Cooper Lighting Solutions Representative



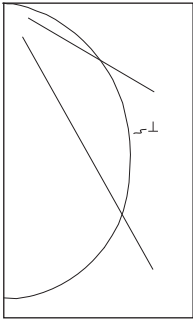
## DOOR FRAME

**Grid Type=** One Piece Inset Door, One Piece Gasket, One Piece Lens Retention Device



Overall Sizes		
Housing Type	A (in)	B (in)
1' x 4'	48"	11-11/16"
1' x 2'	24"	11-11/16"

**PHOTOMETRICS**



**CFL-12-228-120-IK12**  
 Electronic Ballast  
 F28T8/835 Lamps  
 2900 Lumens  
 Spacing criterion:  
 (||) 1.2 x mounting  
 height, (⊥) 1.3 x  
 mounting height  
 Efficiency 62.6%  
 Test Report:  
 168P129

**Coefficients of Utilization**

rc	Effective floor cavity reflectance																						
	80%				70%				50%				30%				10%				0%		
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
<b>RCR</b>	0	75	75	75	75	73	73	73	73	70	70	70	67	67	67	64	64	64	63	63	63	63	
	1	68	65	63	61	67	64	62	60	61	59	58	59	57	56	57	55	54	53	53	53	53	
	2	62	57	53	50	61	56	52	49	54	51	48	52	49	47	50	48	46	45	45	45	45	
	3	57	51	46	42	55	50	45	41	48	44	40	46	43	40	44	42	39	38	38	38	38	
	4	52	45	40	35	51	44	39	35	43	38	35	41	37	34	40	36	34	32	32	32	32	
	5	48	40	35	31	47	40	34	30	38	34	30	37	33	30	36	32	29	28	28	28	28	
	6	44	36	31	27	43	36	30	27	35	30	26	34	29	26	33	29	26	25	25	25	25	
	7	41	33	28	24	40	32	27	24	31	27	24	31	26	23	30	26	23	22	22	22	22	
	8	38	30	25	21	38	30	25	21	29	24	21	28	24	21	27	24	21	20	20	20	20	
	9	36	28	23	19	35	27	22	19	27	22	19	26	22	19	25	22	19	18	18	18	18	
	10	34	26	21	17	33	25	21	17	25	20	17	24	20	17	23	20	17	16	16	16	16	

**Candela**

Angle	Along	45°	Across ⊥
0	1423	1423	1423
5	1420	1415	1412
10	1401	1389	1381
15	1365	1346	1330
20	1315	1291	1265
25	1248	1224	1192
30	1168	1149	1109
35	1065	1058	1019
40	961	958	923
45	854	864	825
50	746	768	725
55	636	669	624
60	523	562	521
65	412	451	418
70	302	340	315
75	204	232	214
80	116	132	121
85	46	51	46
90	0	0	0

**Zonal Lumen Summary**

Zone	Lumens	%Lamp	%Fixture
0-30	1073	18.5	29.6
0-40	1725	29.8	47.5
0-60	2947	50.8	81.2
0-90	3630	62.6	100.0
0-180	3630	62.6	100.0

**Luminance Data**

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	4931	4988	4763
55	4527	4762	4441
65	3980	4357	4038
75	3218	3660	3376
85	2155	2389	2155

**ORDERING INFORMATION**

SAMPLE NUMBER: CRL-12-317-277-IK12-EB81-GLR

Product Family	Width	Lamp Type	Voltage	Lens Type	Ballast	Door /Finish Options	Options
<b>CRL</b>	<b>12</b>						
CRL=Clean Room Fluorescent Grid Type with Inset Door	12=12" (12" is 3 Lamp Maximum)		120=120V 277=277V UNV=120-277V	IK12=K-12 Prismatic Acrylic, 0.125" thick ID12=K-12 Prismatic Impact Resistant Acrylic IP12=K-12 Prismatic Polycarbonate KSH25=Bat Wing Distribution <sup>(1)</sup> 93=Prismatic Tempered Glass	Electronic Ballast <sup>(2)</sup> EB51=(1) Ballast for use with T5 Lamp EB52=(2) Ballast for use with T5 Lamp EB81=(1) Ballast for use with T8 Lamp EB82=(2) Ballast for use with T8 Lamp EBX1=(1) Ballast for use with Biax Lamp EBX2=(2) Ballast for use with Biax Lamp	Blank=Standard, CRS with baked white finish SSN=Stainless Steel Door/Brushed finish SSP=Stainless Steel Door/Polyester Powder Coat Finish ALP=Aluminum Door/Polyester Powder Finish	EBP=Emergency Battery Pack GLR=Fuse and Holder RIF=Radio Frequency Interference Filter Door TAD=Top Access Door AM=Antimicrobial Finish <b>Housing Options</b> SHN=Stainless Steel, Brushed Finish SHP=Stainless Steel, Polyester Powder Finish ALH=Aluminum, Polyester Powder Finish GSK=Gasket Applied to Housing Lip to Seal Against Grid
<b>2' Fixture Length</b> T5HO Fluorescent 124T5=(1) 24W Lamp 224T5=(2) 24W Lamps 324T5=(3) 24W Lamps  T5 Fluorescent 114T5=(1) 14W Lamp 214T5=(2) 14W Lamps 314T5=(3) 14W Lamps  T8 Fluorescent 117=(1) 17W Lamp 217=(2) 17W Lamps 317=(3) 17W Lamps  U Lamps 1U 1 5/8=(1) 31W T8 Lamp  Biaxial Fluorescent 240BX=(2) 40W Lamps	<b>4' Fixture Length</b> T5HO Fluorescent 154T5=(1) 54W Lamp 254T5=(2) 54W Lamps 354T5=(3) 54W Lamps  T5 Fluorescent 128T5=(1) 28W Lamp 228T5=(2) 28W Lamps 328T5=(3) 28W Lamps  T8 Fluorescent 132=(1) 32W Lamp 232=(2) 32W Lamps 332=(3) 32W Lamps						

**NOTES:**  
 For additional options please consult Cooper Lighting Solutions Representative. Specifications and Dimensions are subject to change without notice. Electronic ballast may cause interference with other electronic devices. If interference occurs, move the device away from the product or plug/connect into a different circuit/outlet.

<sup>(1)</sup> The KSH25 provides improved visual performance and wide angle distribution. This lens has an integral prism pattern designed so that prisms face the lamp cavity and still supply superior photometrics. <sup>(2)</sup> For specific electronic ballast, specify brand and catalog number.