FAIL-SAFE®

DESCRIPTION

The CRG is designed to meet the toughest requirements in clean room and BSL applications. The enclosed and gasketed housing and one-piece, door protect against infiltration of airborne bacteria. Die-formed edges on door frame and the hole-free design of housing prevent air exchange between fixture and plenum, to allow re-lamping without contaminating the area. One-piece gaskets are included on lens, for easy replacement and on door edge. The CRG can work in 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.

Catalog #		**Type**
Project		
Comments		**Date**
Prepared by		

SPECIFICATION FEATURES

Application
The CRG is suitable for use in I.E.S. Class 100, 1,000, 10,000, and 100,000 clean room environments. Applications include clean rooms, 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 trade size knockouts allows connection of vapor tight conduit fitting. Optional, above-ceiling, top access door for luminaire maintenance is available.

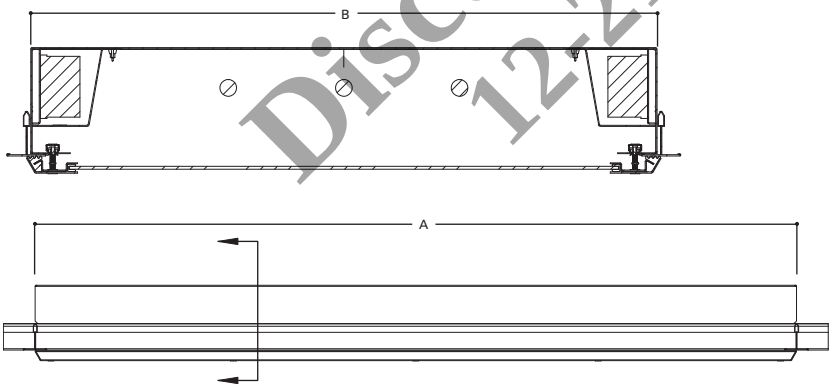
Lens
Lens is clear, extruded with prisms positioned inside the fixture providing a smooth surface on the outside for easy cleaning.

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.

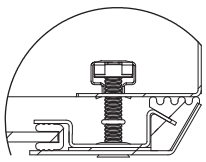
Ballast
Standard Class P, CBM/RTL ballast.

Labels
UL/cUL listed, standard wet label, NSF.



DOOR FRAME

Grid Type= One Piece Overlapping Door, One Piece Gasket, One Piece Lens Retention Device



Overall Sizes		
Housing Type	**A (in)**	**B (in)**
2' x 4'	48"	23-11/16"
2' x 2'	24"	23-11/16"

CRG

2x2
2x4
Cleanroom

RECESSED GRID
Overlapping Door

IP65 Rated

TRI-SEAL™

NSF®

ENERGY DATA

Input Watts:

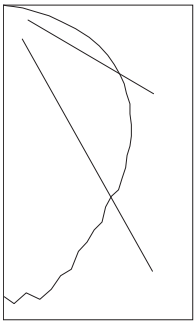
STD Ballasts & STD Lamps
(2) 40W Biaxial Fluorescents: 82W
(3) 40W Biaxial Fluorescents: 127W

T5 ES Ballast & STD Lamps
(2) 24WT5 Fluorescents: 52W
(3) 24WT5 Fluorescents: 78W
(2) 54WT5 Fluorescents: 106W
(3) 54WT5 Fluorescents: 160W

T8 ES Ballast & STD Lamps
(2) 17WT8 Fluorescents: 36W
(3) 17WT8 Fluorescents: 56W
(2) 32WT8 Fluorescents: 71W
(3) 32WT8 Fluorescents: 108W
(2) 40W U-Lamps: 86W

Electronic Ballast Data
Consult Cooper Lighting Solutions Representative

PHOTOMETRICS



CRF-24-632
Electronic Ballast

F32T8/35K Lamps
17400 Lumens (6L)

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

Efficiency 69.5%

Test Report: 6L-T8.IES

Coefficients of Utilization

Effective floor cavity reflectance					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	83	83	83	83	81	81	81	81	77	77	77	74	74	74	71	71	71	69		
1	75	72	69	66	73	70	67	65	67	65	63	64	62	61	62	60	59	57		
2	68	62	57	53	66	61	56	52	58	54	51	56	53	50	54	51	49	47		
3	62	54	48	43	60	53	47	43	51	46	42	49	45	42	47	44	41	39		
4	56	48	41	36	55	47	41	36	45	40	36	43	39	35	42	38	35	33		
5	52	42	36	31	50	42	36	31	40	35	31	39	34	30	37	33	30	28		
6	48	38	32	27	46	37	31	27	36	31	27	35	30	26	34	30	26	25		
7	44	34	28	24	43	34	28	24	33	27	24	32	27	23	31	26	23	22		
8	41	31	25	21	40	31	25	21	30	25	21	29	24	21	28	24	21	19		
9	38	29	23	19	37	28	23	19	28	22	19	27	22	19	26	22	19	17		
10	36	27	21	17	35	26	21	17	26	21	17	25	20	17	24	20	17	16		

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	3056	17.6	25.3
0-40	4975	28.6	41.2
0-60	9127	52.5	75.5
0-90	12090	69.5	100.0
0-180	12090	69.5	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	4573	4275	4413
55	4503	4152	4330
65	4428	3893	3985
75	3415	2791	2929
85	1312	843	852

Candela

Angle	Along II	45°	Across ⊥
0	4156	4156	4156
5	4135	4220	4251
10	4129	4061	4092
15	3911	3879	3925
20	3611	3623	3656
25	3425	3404	3362
30	3160	3193	3279
35	3024	3040	3117
40	2806	2912	2972
45	2644	2721	2780
50	2419	2526	2571
55	2193	2303	2370
60	1972	2079	2134
65	1687	1775	1784
70	1343	1400	1422
75	900	958	980
80	496	518	525
85	181	186	180
90	36	38	34

ORDERING INFORMATION

SAMPLE NUMBER: CRG-24-317-277-IK12-EB81-GLR

Product Family
CRG
- **CRG**=Clean Room Fluorescent Grid Type

Width
24
- **24**=24"

Lamp Type

2' Fixture Length

T5 HO Fluorescent
- **224T5**=(2) 24W Lamps
- **324T5**=(3) 24W Lamps
- **424T5**=(4) 24W Lamps
- **624T5**=(6) 24W Lamps

T5 Fluorescent
- **214T5**=(2) 14W Lamps
- **314T5**=(3) 14W Lamps
- **414T5**=(4) 14W Lamps
- **614T5**=(6) 14W Lamps

T8 Fluorescent
- **217**=(2) 17W Lamps
- **317**=(3) 17W Lamps
- **417**=(4) 17W Lamps
- **617**=(6) 17W Lamps

U Lamp
- **2U 1 5/8**=(2) 31WT8 Lamps
- **3U 1 5/8**=(3) 31WT8 Lamps
- **2U6T8**=(2) 32WT8 Lamps

Biaxial Fluorescent
- **240BX**=(2) 40W Lamps
- **340BX**=(3) 40W Lamps

4' Fixture Length

T5 Fluorescent
- **228T5**=(2) 28W Lamps
- **328T5**=(3) 28W Lamps
- **428T5**=(4) 28W Lamps
- **628T5**=(6) 28W Lamps

T5HO Fluorescent
- **254T5**=(2) 54W Lamps
- **354T5**=(3) 54W Lamps
- **454T5**=(4) 54W Lamps
- **654T5**=(6) 54W Lamps

T8 Fluorescent
- **232**=(2) 32W Lamps
- **332**=(3) 32W Lamps
- **432**=(4) 32W Lamps
- **632**=(6) 32W Lamps

Voltage
- **120**=120V
- **277**=277V
- **UNV**=120-277V

Lens Type
- **IK12**=K-12 Prismatic Acrylic, 0.125" thick
- **ID12**=K-12 Prismatic Impact Resistant Acrylic
- **IP12**=K-12 Prismatic Polycarbonate
- **KSH25**=Bat Wing Distribution[1]
- **93**=Prismatic Tempered Glass

Ballast

Electronic Ballast[2]
- **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

Door /Finish Options
- **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

Options
- **EBP**=Emergency Battery Pack
- **GLR**=Fuse and Holder
- **RIF**=Radio Frequency Interference Filter
- **TAD**=Top Access Door
- **AM**=Antimicrobial Finish

Housing Options
- **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

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 devic away from the product or plug/connect into a different circuit/outlet.

[1] 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. [2] For specific electronic ballast, specify brand and catalog number.