FAIL-SAFE®

DESCRIPTION

The CFG is designed for use in horizontal or non-laminar air flow clean rooms. The enclosed and gasketed housing and one-piece, outside door protects against infiltration of particles and airborne bacteria. The housing and door are designed to work with standard 1" and 1 1/2" T-grid ceilings. The gasketed door frame's design eliminates ledge or crevice exposure preventing the harboring of contaminants. The CFG hole-free housing prevents air exchange between the fixture and plenum. UL/cUL listed for wet locations under covered ceilings.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Application
The CFG is suitable for use in I.E.S. Class 100, 1,000, 10,000 and 100,000 clean room environments and manufactured in accordance with U.S.D.A., F.D.A., N.S.F. and Federal Standard 209E. Applications include clean rooms, technical and biomedical labs, food processing/testing centers and pharmaceutical labs.

Fasteners
Flush-mounted, stainless steel machine screws secure through captive cage nuts in housing and are evenly spaced to compress gasketing on all sides.

Housing
Die-formed, 20 ga. CRS with tightly butted and 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.

Finish
High gloss, electrostatically applied, white powder coat finish, average minimum reflectance 92%.

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

Door
One-piece, 18 ga. door with baked white polyester powder coat, fully gasketed, outside door with die-formed and beveled edges eliminates seams which could entrap microscopic contaminants. Optional doors available.

Gasket
White, closed cell, Flexiseal(TM) gasketing surrounds perimeter of lens to seal lens to door frame and around perimeter of door to seal door to ceiling system. Another layer seals fixture to ceiling system after installation.

Access
A gasketed access plate on top of the housing with two flattened, 7/8" diameter knockouts allows connection of vapor tight conduit fitting. Optional, above ceiling, top access door for luminaire maintenance is available and ideal for food processing and cleanroom applications.

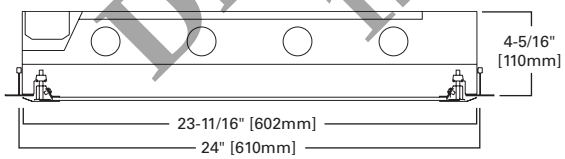
Lens
One-piece, clear Pattern 12 acrylic lens with internal prism pattern. Choice of prismatic acrylic, prismatic polycarbonate, Radialens or prismatic tempered glass on environmental side.

Lamps
By others.

Lens Retention
Unique, Particulock(TM) lens retention system utilizes continuous, 18 ga. media clampdowns to sandwich gasketing and integrate lens and door frame for even environmental seal.

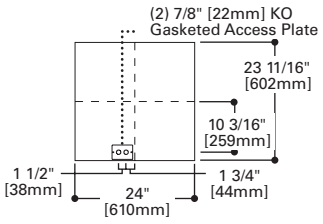
Ballast
Electronic Class P, CBM/ETL ballast.

Listings
UL/cUL listed for wet location under covered ceiling. IP66 rated for standard die-formed steel, stainless steel and aluminum doors.

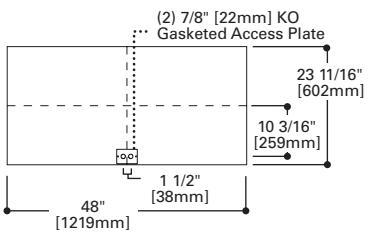


MOUNTING DIMENSIONS

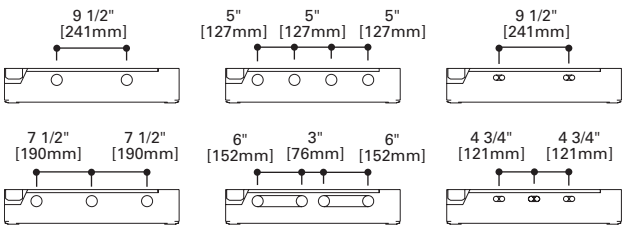
Mounts in Standard 2' x 2' Grid Type Ceiling



Mounts in Standard 2' x 4' Grid Type Ceiling

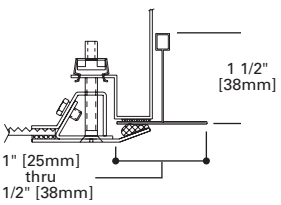


LAMP CONFIGURATIONS



DOOR FRAME

Grid Type-One-Piece Door



CFG

2x2
2x4
Cleanroom

RECESSED GRID
Overlapping Door
1" and 1-1/2" Grid

ENERGY DATA

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

ES Ballasts & STD Lamps
(2) 17W T8 Fluorescents: 45W
(3) 17W T8 Fluorescents: 68W
(4) 17W T8 Fluorescents: 90W
(2) 32W T8 Fluorescents: 71W
(3) 32W T8 Fluorescents: 108W
(4) 32W T8 Fluorescents: 142W

Electronic Ballast Data
Consult Cooper Lighting Solutions Representative

COOPER Lighting Solutions

ORDERING INFORMATION

SAMPLE NUMBER: CFG-24-232-277-IK12-EB81-SSN

Product Family	Width	Lamp Type	Voltage	Lens Type [4]	Ballast	Overlapping Door/Finish Options	Options
CFG	24						

CFG=Fluorescent Grid Type

24=24"

2' Fixture Length

T5 Fluorescent
214=(2) 14W Lamps
314=(3) 14W Lamps
414=(4) 14W Lamps

T5HO Fluorescent
224=(2) 24W Lamps
324=(3) 24W Lamps
424=(4) 24W Lamps

T8 Fluorescent
217=(2) 17W Lamps
317=(3) 17W Lamps
417=(4) 17W Lamps

U Lamps
2U 1 5/8=(2) 31W T8 Lamps
3U 1/58=(3) 31W T8 Lamps
2U6T8=(2) 32W T8 Lamps

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

4' Fixture Length

T5 Fluorescent
228=(2) 28W Lamps
328=(3) 28W Lamps
428=(4) 28W Lamps

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

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

120= 120V
277=277V
UNV=120V-277V

IK12=Pattern 12 Prismatic Acrylic, 0.110" thick
IP12=Pattern 12 Prismatic Polycarbonate, 0.110" thick
KSH25= Linear Ribbed Acrylic, 0.115" thick [1]
93=Prismatic Tempered Glass, 0.156" thick

Electronic Ballast [2]
EB81= (1) Ballast for use with T8 Lamp
EB82=(2) Ballasts for use with T8 Lamp
EBX1=EB1 Ballast for use with Biaxial Lamp
EBX2=(2) Ballasts for use with Biaxial Lamp
EB51=(1) Ballast for use with T5 Lamp
EB52=(2) Ballasts for use with T5 Lamp

Blank=Steel, powder coat painted white [6]
SSN=Stainless Steel Door/Brushed finish [6]
SSP=Stainless Steel Door, powder coat painted white [6]
ALP=Aluminum Door, powder coat painted white [6]

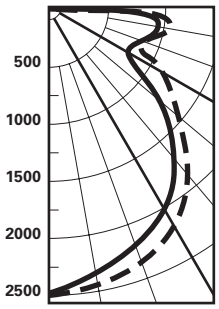
EL4=EM Pack, T8, BX
EL5=EM Pack, T5, T5HO
GLR=Fuse and Holder
RIF=Radio Frequency Interference Filter
TAD=Top Access Door [3]
AM=Anti-microbial Finish

Housing Options
ALH=Die formed Aluminum, powder coat painted white
SHN=Stainless Steel, Brushed finish
SHP=Stainless Steel, powder coat painted white

NOTES:
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. Highly recommended for all high-tech manufacturing environments.
2 For specific electronic ballast, specify brand and catalog number.
3 Contact your Cooper Lighting Solutions Representative for dimensional details.
4 Refer to Lens Ordering Guide for additional lens choices.
5 EM Pack not available with (2) T5 ballasts.
6 IP66 rated.

PHOTOMETRICS

Candlepower Distribution



Test No. ITL36036
CFG-24-440-IK12
Lamp=(4) 40WT12
Lumens=8526

Spacing Criteria
⊥=1.4 II=1.2
Efficiency=67.7%

Average Luminance

Deg.	⊥	II
45	1595	1323
55	1154	980
65	822	779
75	871	857
85	1018	933

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	2728	21.7	32.0
0-40	4499	35.7	52.8
0-60	7316	58.1	85.8
0-90	8526	67.7	100.0
90-180	0	0.0	0.0
0-180	8526	67.7	100.0

Coefficient of Utilization

rc	80%				70%			50%		30%		10%		0%
rw	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR														
0	81	81	81	81	79	79	79	75	75	72	72	69	69	68
1	75	72	69	67	70	68	66	67	64	65	62	62	60	59
2	69	64	60	57	63	59	56	61	55	58	54	56	52	51
3	64	58	53	49	57	52	48	55	48	53	47	51	46	45
4	59	52	46	42	51	46	42	49	42	48	41	46	40	39
5	54	46	41	37	46	40	36	44	36	43	36	42	35	34
6	50	42	36	32	41	36	32	40	32	39	31	38	31	30
7	46	38	32	28	37	32	28	36	28	35	28	34	28	26
8	43	34	28	25	33	28	24	33	24	32	24	31	24	23
9	39	30	25	21	30	25	21	29	21	29	21	28	21	20
10	37	28	22	19	27	22	19	27	19	26	19	25	19	17

rc=Ceiling reflectance, rw=W all reflectance, RCR=Room cavity ratio
CU Data Based on 20% Effective Floor Cavity Reflectance.