

DESCRIPTION

The CFS is designed for use in non-laminar air flow clean rooms. This surface-mounted clean room luminaire has a hole-free design and is enclosed and gasketed to protect against infiltration of particles and airborne bacteria. The sealed housing and door frame allow relamping without contamination of the clean areas. UL/cUL listed for wet locations, and manufactured in accordance with U.S.D.A. and F.D.A. All fixtures have been tested and reported in compliance with Federal Standard 209E, Class 100 (M3.5) and above.

Catalog #		Type	
Project			
Comments		Date	
Prepared by			

SPECIFICATION FEATURES

Application

The CFS is suitable for use in I.E.S. Class 100, 1,000, 10,000 and 100,000 clean room environments. 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.

Finish

High gloss, electrostatically applied, white powder coat finish, average minimum reflectance 92%. 1000 hour salt spray test.

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 housing.

Access

A gasketed access plate inside the housing with two flattened, 7/8" diameter knockouts allows connection of vapor tight conduit fitting.

Lens

Lens is clear Pattern 12 acrylic with prisms positioned inside fixture and smooth surface on the outside for easy cleaning.

Lamps

(By Others)

Lens Retention

Unique, Particlock(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.

Labels

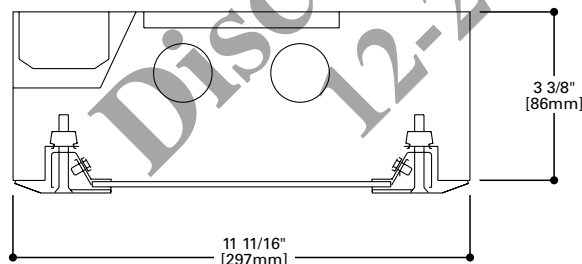
UL/cUL listed for wet location under covered ceiling.



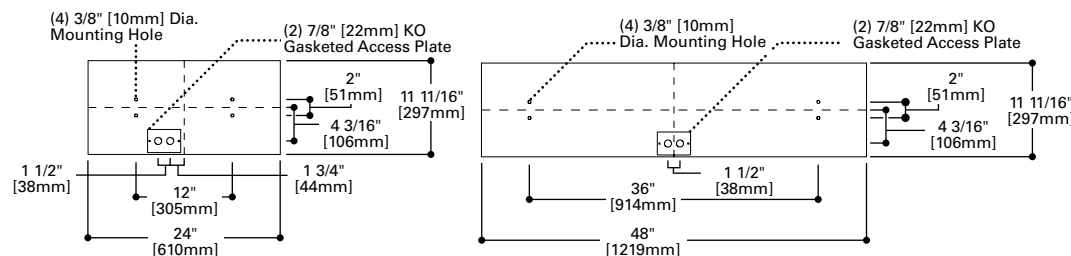
CFS12LP

1x2
1x4
Cleanroom

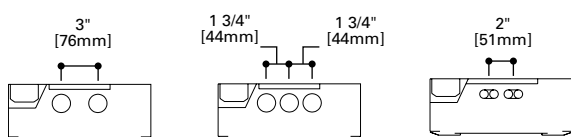
SURFACE
Overlapping Door



MOUNTING DIMENSIONS

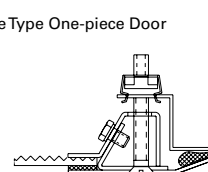


LAMP CONFIGURATIONS



DOOR FRAME

Surface Type One-piece Door



ENERGY DATA

Input Watts:

Electronic Ballasts & STD Lamps
(1) 40W Biaxial Fluorescent: 41W
(2) 40W Biaxial Fluorescents: 68W

Electronic Ballasts & STD Lamps
(1) 17W T8 Fluorescent: 20W
(2) 17W T8 Fluorescents: 34W
(3) 17W T8 Fluorescents: 47W
(1) 32W T8 Fluorescent: 32W
(2) 32W T8 Fluorescents: 58W
(3) 32W T8 Fluorescents: 85W

Electronic Ballasts & STD Lamps
(1) 14W T5 Fluorescent: 20W
(2) 14W T5 Fluorescents: 35W
(3) 14W T5 Fluorescents: 55W
(1) 28W T5 Fluorescent: 34W
(2) 28W T5 Fluorescents: 63W
(3) 28W T5 Fluorescents: 97W

For High Output Electronic Ballast Data, Consult Cooper Lighting Solutions Representative.

ORDERING INFORMATION

SAMPLE NUMBER: CFS12LP-332-120-IP12-EB81

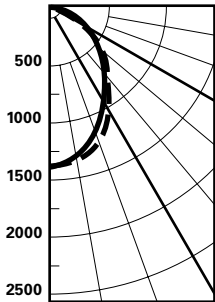
Product Family	Lamp Type	Voltage	Lens Type ³	Ballast	Overlapping Door/Finish Options	Options
CFS12LP						
CFS12LP=Fluorescent Surface Type		120= 120V 277=277V 347=347V UNV=120V-277V	IK12=Pattern 12 Prismatic Acrylic, 0.110" thick IP12=Pattern 12 Prismatic Polycarbonate, 0.110" thick KSH25=Linear Ribbed 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) Ballast for use with Biaxial Lamps EB51= (1) Ballast for use with T5 Lamp EB52=(2) Ballasts for use with T5 Lamp	Blank=Steel, powder coat painted white ALP=Aluminum Door, powder coat painted white ALX=Extruded Alumium Door, Clear anodized finish ALXP=Extruded Aluminum Door, powder coat painted white SSN=Stainless Steel Door, Brushed finish SSP=Stainless Steel Door, powder coat painted white	
2' Nom. Length T5 Fluorescent 114=(1) 14W Lamp 214=(2) 14W Lamps 314=(3) 14W Lamps 124=(1) 24W HO Lamp 224=(2) 24W HO Lamps 324=(3) 24W HO Lamps T8 Fluorescent 117=(1) 17W Lamp 217=(2) 17W Lamps 317=(3) 17W Lamps 2U6T8=(2) 32W Lamps 2U15/8=(2) 31W Lamps 3U15/8=(3) 31W Lamps	Biaxial Fluorescent 140BX=(1) 40W Lamp 240BX=(2) 40W Lamps 4' Nom. Length T5 Fluorescent 128=(1) 28W Lamp 228=(2) 28W Lamps 328=(3) 28W Lamps 154=(1) 54W HO Lamp 254=(2) 54W HO Lamps 354=(3) 54W HO Lamps T8 Fluorescent 132=(1) 32W Lamp 232=(2) 32W Lamps 332=(3) 32W Lamps				EL4=EM Pack, T8, BX EL5=EM Pack, T5, T5HO GLR=Fuse and Holder RIF=Radio Frequency Interference Filter	
					Housing Options ALH=Aluminum, powder coat painted white SHN=Stainless Steel, Brushed finish SHP=Stainless Steel, powder coat painted white AM=Anti-microbial Finish	

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 Refer to Lens Ordering Guide for additional lens choices.

PHOTOMETRICS

Candlepower Distribution



Test No. 168P125
CFS12LP-232-120-IK12
Lamp=F032/35K
Lumens=2800
Spacing Criteria
I=1.2 II=1.2
Efficiency=63.1%

Average Luminance

Deg.	I	II
45	1516	1511
55	1364	1410
65	1190	1287
75	966	1074
85	683	668

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-30	1047	18.7	29.6
0-40	1680	30.0	47.6
0-60	2862	51.1	81.0
0-90	3532	63.1	100.0
90-180	0	0.0	0.0
0-180	3532	63.1	100.0

Coefficient of Utilization

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	50	30	10	0	
RCR																							
0	75	75	75	75	73	73	73	73	70	70	70	67	67	67	64	64	64	64	63				
1	69	67	64	62	68	65	63	61	63	61	59	60	59	57	58	57	56	54					
2	64	59	55	52	62	58	54	51	56	53	50	54	51	49	52	50	48	46					
3	59	52	48	44	57	51	47	44	50	46	43	48	45	42	46	44	41	40					
4	54	47	42	38	52	46	41	37	44	40	37	43	39	36	42	38	36	35					
5	49	41	36	32	48	41	36	32	39	35	32	38	34	31	37	34	31	30					
6	45	37	32	28	44	37	32	28	36	31	28	35	30	27	34	30	27	26					
7	42	34	28	24	41	33	28	24	32	27	24	31	27	24	30	27	24	23					
8	39	30	25	21	38	30	25	21	29	24	21	28	24	21	27	24	21	20					
9	36	27	22	18	35	27	22	18	26	21	18	25	21	18	25	21	18	17					
10	33	25	20	16	32	24	20	16	24	19	16	23	19	16	23	19	16	15					

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