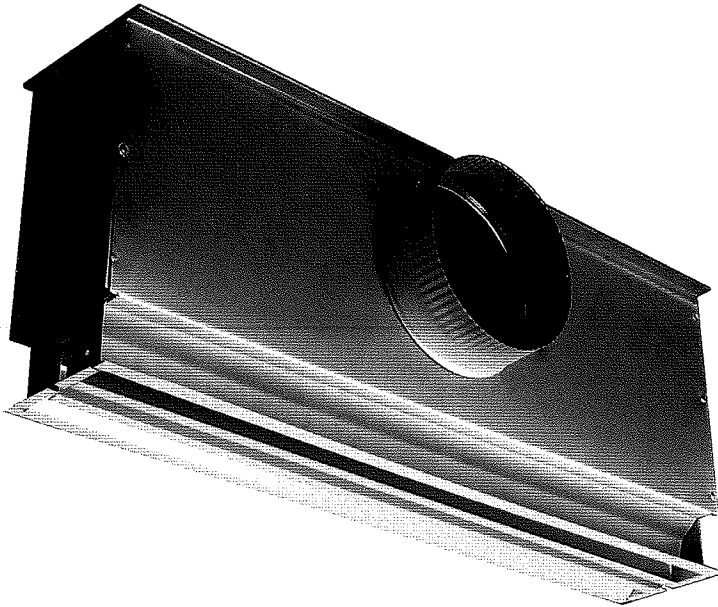


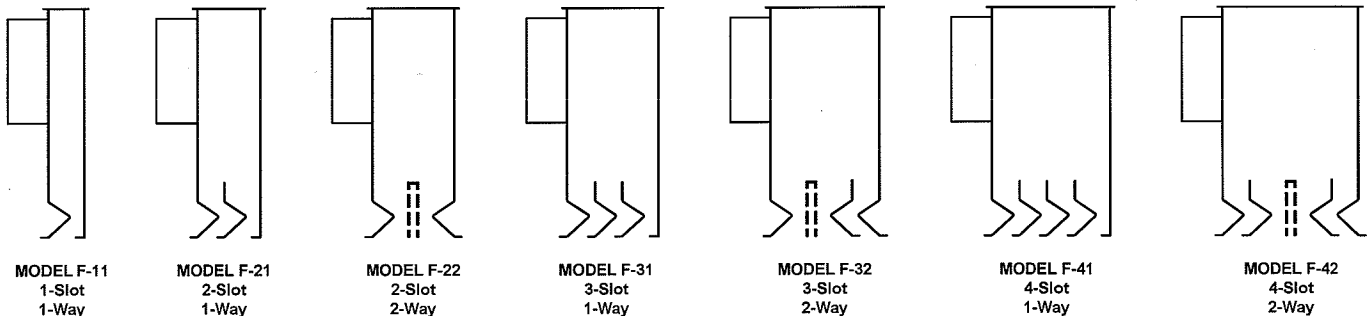


PLENUM FIXED BLADE AIR DIFFUSERS

MODELS "F" AND "FL" • 1 THRU 4 SLOTS WIDE



- Model F designed for use with 15/16" and 9/16" T-bar suspended ceilings or "hard" ceiling systems.
- Fixed pattern control with 1 and 2 way patterns.
- Model F 1 thru 4 slot styles - both supply and matching return.



APPLICATION

Ideal for use with variable and constant volume systems for supply or return units. Minimizes air "dumping" at low flow rates. Handles heated or cooled air, functions well in areas with low ceilings and ideal for "blanketing" windows and outside walls.

CONSTRUCTION

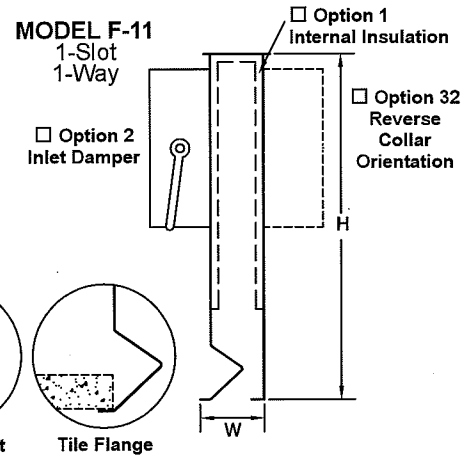
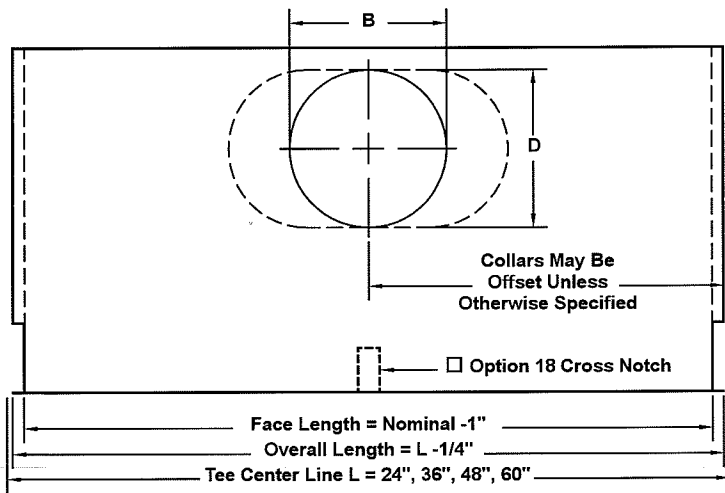
Diffuser plenum is constructed of 24 gauge galvanealed steel. Factory furnished center "T"s and optional surface mounting frames are extruded aluminum. Interior or exterior of plenum available with coated fiberglass insulation. Round or oval inlets are available with optional damper. Units available in any length to 60".

APPEARANCE

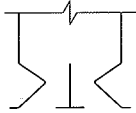
Integrates with "T"-bar ceiling with off-white "T" bars and blades. Surface mounting frame for mounting in "hard" ceilings available.

MODEL "F" DIFFUSER WITH FIXED BLADE 1 thru 4 Slot Models

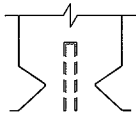
FOR USE WITH 15/16" WIDE TEE CEILINGS



ACCESSORY OPTIONS



Option 3
Factory installed 15/16" Wide Center T
for F-22, F-32 or F-42 units.



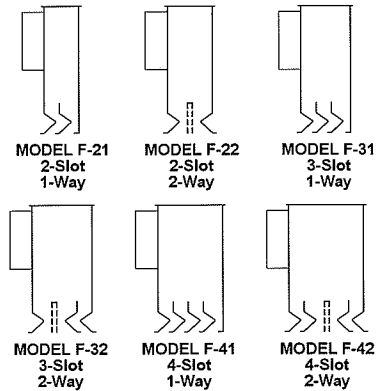
Option 4
Slot provided in ends for F-22,
F-32 or F-42 units to fit astride
ceiling grid T-bar by others.

MODEL	DIFFUSER WIDTH "W"
F-11	1-3/4"
F-21	3-3/8"
F-22	3-9/16"
F-31	5-1/32"
F-32	5-7/32"
F-41	6-13/16"
F-42	6-7/8"

NOMINAL INLET SIZE	"B"	"D"	"H"
5" RD.	4-7/8"	4-7/8"	
6" RD.	5-7/8"	5-7/8"	9-1/4"
8" OV.	10-3/16"	5-1/8"	
8" RD.	7-7/8"	7-7/8"	11-1/4"
10" OV.	11-1/2"	8"	
10" RD.	9-7/8"	9-7/8"	13-1/4"
12" OV.	13-7/8"	9-9/16"	

SUPPLY PATTERNS - 2, 3 & 4 SLOTS

F-22, F-32 & F-42 SHOWN WITH OPTION 4

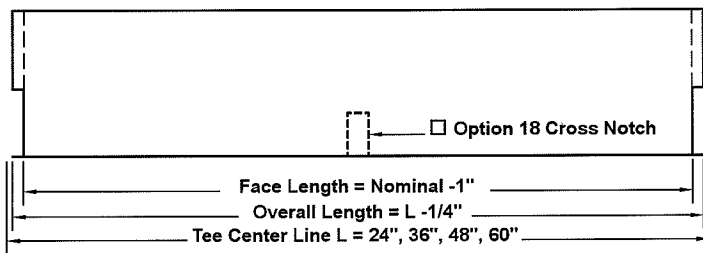


MODEL "FR" DIFFUSER WITH FIXED BLADE 1 thru 4 Slot Models

OPEN SIDE RETURN

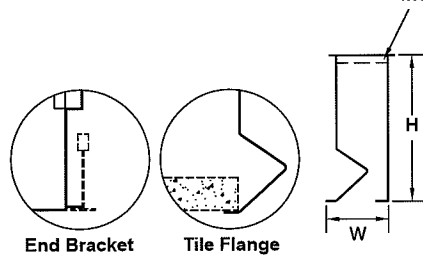
FOR USE WITH 15/16" WIDE TEE CEILINGS

(FOR DUCTED RETURN, USE SUPPLY DIFFUSER)

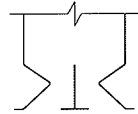


MODEL FR-11
1-Slot
1-Way

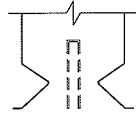
Option 1
Internal Insulation On Top



ACCESSORY OPTIONS



Option 3
Factory installed
15/16" Wide Center T
for FR-22, FR-32 or
FR-42 units.

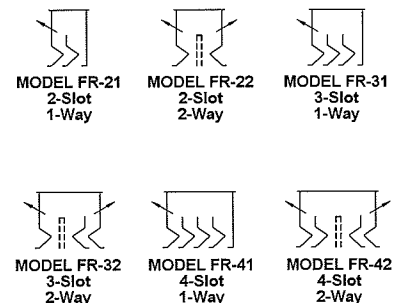


Option 4
Slot provided in ends for FR-22,
FR-32 or FR-42 units to fit
ceiling grid T-bar by others.

MODEL	DIFFUSER WIDTH "W"	"H"
FR-11	1-3/4"	5"
FR-21	3-3/8"	
FR-22	3-9/16"	
FR-31	5-1/32"	
FR-32	5-7/32"	
FR-41	6-13/16"	
FR-42	6-7/8"	

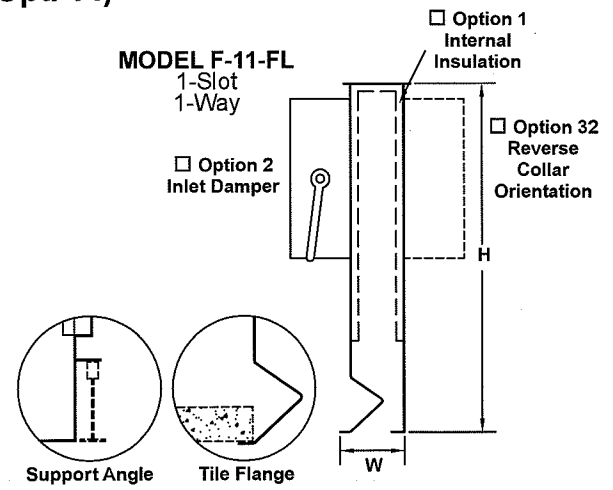
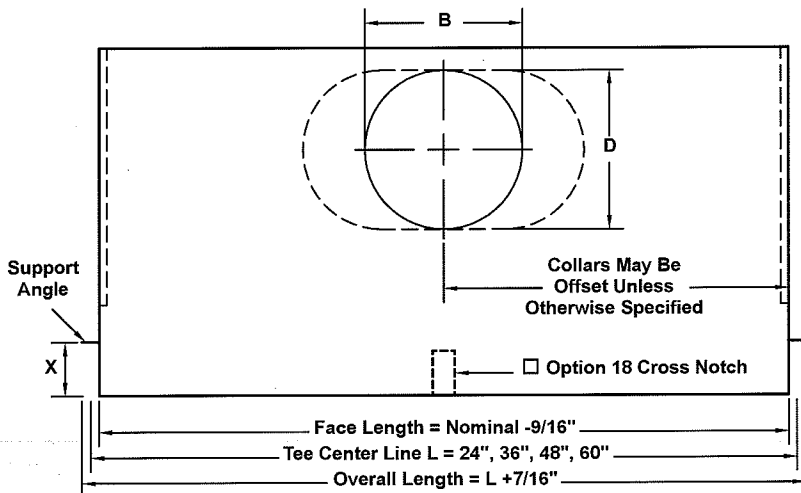
RETURN PATTERNS - 2, 3 & 4 SLOTS

FR-22, FR-32 & FR-42 SHOWN WITH OPTION 4

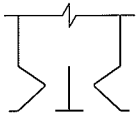


MODEL "F-FL" DIFFUSER WITH FIXED BLADE 1 thru 4 Slot Models

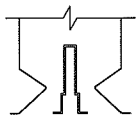
FOR USE WITH 9/16" WIDE TEE CEILINGS (Opt. 14)



ACCESSORY OPTIONS



Option 3
Factory installed 15/16" Wide Center T for F-22-FL, F-32-FL or F-42-FL units.



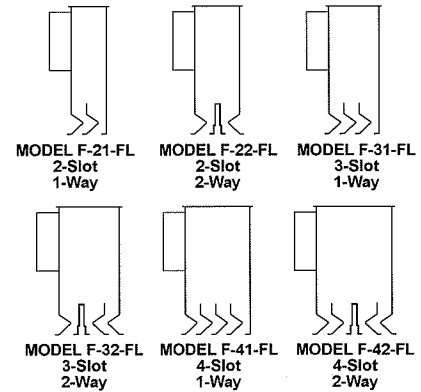
Option 4
Slot in ends and highhat provided for F-22-FL, F-32-FL or F-42-FL units to fit astride ceiling grid T-bar by others.

MODEL	DIFFUSER WIDTH "W"
F-11-FL	2-1/4"
F-21-FL	3-7/8"
F-22-FL	4-1/16"
F-31-FL	5-17/32"
F-32-FL	5-23/32"
F-41-FL	7-5/16"
F-42-FL	7-3/8"

NOMINAL INLET SIZE	"B"	"D"	"H"
5" RD.	4-7/8"	4-7/8"	9-1/4"
6" RD.	5-7/8"	5-7/8"	
8" OV.	10-3/16"	5-1/8"	11-1/4"
8" RD.	7-7/8"	7-7/8"	
10" OV.	11-1/2"	8"	13-1/4"
10" RD.	9-7/8"	9-7/8"	
12" OV.	13-7/8"	9-9/16"	

SUPPLY PATTERNS - 2, 3 & 4 SLOTS

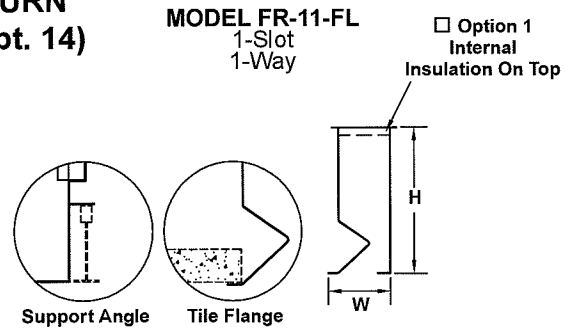
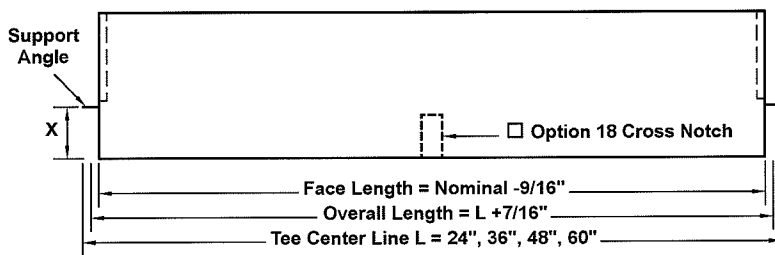
F-22-FL, F-32-FL & F-42-FL SHOWN WITH OPTION 4



MODEL "FR-FL" DIFFUSER WITH FIXED BLADE 1 thru 4 Slot Models

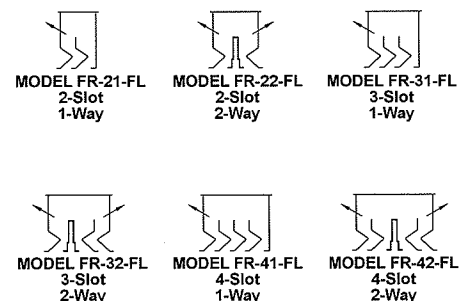
OPEN SIDE RETURN FOR USE WITH 9/16" WIDE TEE CEILINGS (Opt. 14)

(FOR DUCTED RETURN, USE SUPPLY DIFFUSER)

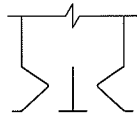


RETURN PATTERNS - 2, 3 & 4 SLOTS

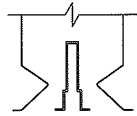
FR-22-FL, FR-32-FL & FR-42-FL SHOWN WITH OPTION 4



ACCESSORY OPTIONS



Option 3
Factory installed 15/16" Wide Center T for FR-22-FL, FR-32-FL or FR-42-FL units.



Option 4
Slot in ends and highhat provided for FR-22-FL, FR-32-FL or FR-42-FL to fit astride ceiling grid T-bar by others.

MODEL	DIFFUSER WIDTH "W"	"H"
FR-11-FL	2-1/4"	5"
FR-21-FL	3-7/8"	
FR-22-FL	4-1/16"	
FR-31-FL	5-17/32"	
FR-32-FL	5-23/32"	
FR-41-FL	7-5/16"	
FR-42-FL	7-3/8"	

MODEL F SLOT DIFFUSER PERFORMANCE DATA

SUPPLY

MODEL	INLET	48" LONG							
		CFM	50	75	100	125	150	175	200
F-11 1 SLOT 1 WAY	8" Oval	CFM	50	75	100	125	150	175	200
		Ps	0.01	0.03	0.05	0.08	0.11	0.15	0.20
		NC	<20	<20	<20	<20	24	29	32
		THROW	10	14	16	18	19	20	21
F-21 2 SLOT 1 WAY	8" Oval	CFM	100	150	200	250	300	350	400
		Ps	0.01	0.03	0.05	0.08	0.12	0.17	0.22
		NC	<20	<20	<20	<20	24	28	32
		THROW	12	16	19	22	24	26	27
F-22 2 SLOT 2 WAY	8" Oval	CFM	100	150	200	250	300	350	400
		Ps	0.01	0.02	0.04	0.06	0.09	0.12	0.16
		NC	<20	<20	<20	<20	25	29	33
		THROW	10	13	16	18	19	21	22
F-31 3 SLOT 1 WAY	10" Oval	CFM	150	225	300	375	450	525	600
		Ps	0.01	0.03	0.05	0.08	0.11	0.15	0.19
		NC	<20	<20	<20	23	28	33	37
		THROW	15	21	25	28	30	33	34
F-32 3 SLOT 2 WAY	10" Oval	CFM	150	225	300	375	450	525	600
		Ps	0.01	0.02	0.04	0.06	0.09	0.12	0.16
		NC	<20	<20	<20	24	29	34	38
		THROW-2S	12	16	19	22	24	26	27
		THROW-1S	10	14	16	18	19	20	21
F-41 4 SLOT 1 WAY	10" Oval	CFM	200	300	400	500	600	700	800
		Ps	0.01	0.02	0.04	0.07	0.09	0.13	0.17
		NC	<20	<20	<20	26	32	37	41
		THROW	24	29	33	35	37	39	41
F-42 4 SLOT 2 WAY	10" Oval	CFM	200	300	400	500	600	700	800
		Ps	0.01	0.03	0.05	0.07	0.11	0.14	0.19
		NC	<20	<20	20	27	33	38	42
		THROW	12	16	19	22	24	26	27

RETURN

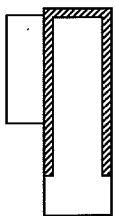
MODEL		48" LONG							
		CFM	50	75	100	125	150	175	200
FR-1 1 SLOT	CFM	100	150	200	250	300	350	400	
	-Ps	0.01	0.03	0.05	0.07	0.10	0.14	0.18	
FR-2 2 SLOT	CFM	150	225	300	375	450	525	600	
	-Ps	0.01	0.02	0.04	0.07	0.10	0.13	0.18	
FR-3 3 SLOT	CFM	200	300	400	500	600	700	800	
	-Ps	0.01	0.02	0.04	0.07	0.10	0.14	0.18	
FR-4 4 SLOT	CFM	200	300	400	500	600	700	800	
	-Ps	0.01	0.02	0.04	0.07	0.10	0.14	0.18	

1. Data determined in accordance with ANSI / ASHRAE Standard 70-1991.
2. CFM is cubic feet per minute
3. Ps is static pressure, inches of water
4. Throw values are in feet, to terminal velocities, Vt = 50 Fpm.
5. NC level is based on 10 dB room attenuation re:10-12 watts.

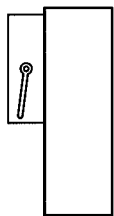
PERFORMANCE CORRECTION FACTORS FOR OTHER LENGTHS

DIFFUSER LENGTH	24"	36"	48"	60"
CFM CHANGE	x .5	x .87	x 1.0	x 1.25
NC CHANGE	-3	-1	0	+1
THROW CHANGE	x .7	x .87	x 1.0	x 1.12

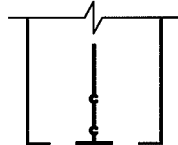
OPTIONS FOR "F" AND "FL" AIR DIFFUSERS FOR USE WITH 15/16" TEE BAR GRID



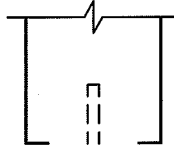
Option 1
Internal Insulation.



Option 2
Inlet Damper With Manual Quadrant.



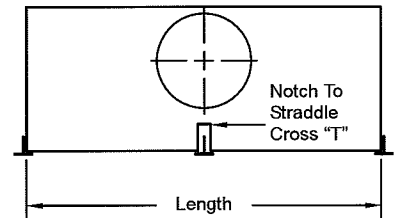
Option 3
Factory Installed 15/16" Wide Center T.



Option 4
Slot Provided In Ends to Fit Astride Ceiling Grid T-Bar By Others.



Option 12
Extruded Aluminum Frame. No Surface Screws. Fastened Thru Slot Opening. Off-White Finish.



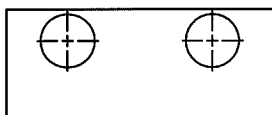
Option 18
Cross Notch For Cross "T".

Option 14
Fineline End Brackets And Highhat For Use With Donn Fineline, Chicago Metallic, Armstrong (And Others) Ceilings With 9/16" Wide Tees.

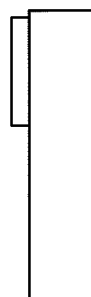
Option 25
Individually Packaged Units.

Option 26
Individually Tagged Units.

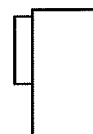
Option 27
Non-Standard Inlet Collars And Dampers.



Option 24
Multiple Collars In Diffuser.



Option 28
Non-Standard Unit Height.



LOWER



Option 32
Reverse Collar Orientation.