

OVERVIEW – LINEAR BAR, GRILLES and REGISTERS

- **Curtainaire**
- **Trimaire**
- **Varicore**

- Extruded Aluminum Construction
- 1/4" Bars on 1/2" Centers
- Floor, Sidewall or Ceiling Mount
- Pencil Proof

Model CC Series



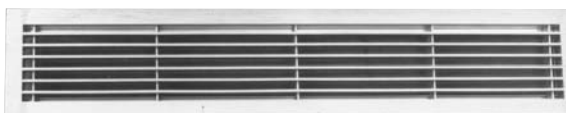
- Extruded Aluminum Construction
- 1/8" Bars on 1/4" Centers
- Floor, Sidewall or Ceiling Mount
- Pencil Proof

Model CT Series



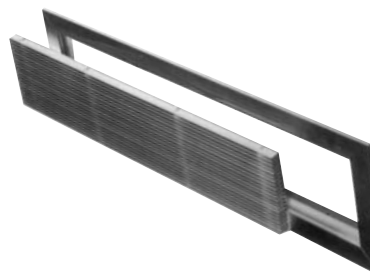
- Extruded Aluminum Construction
- 1/8" Bars on 1/2" Centers
- Floor, Sidewall or Ceiling Mount

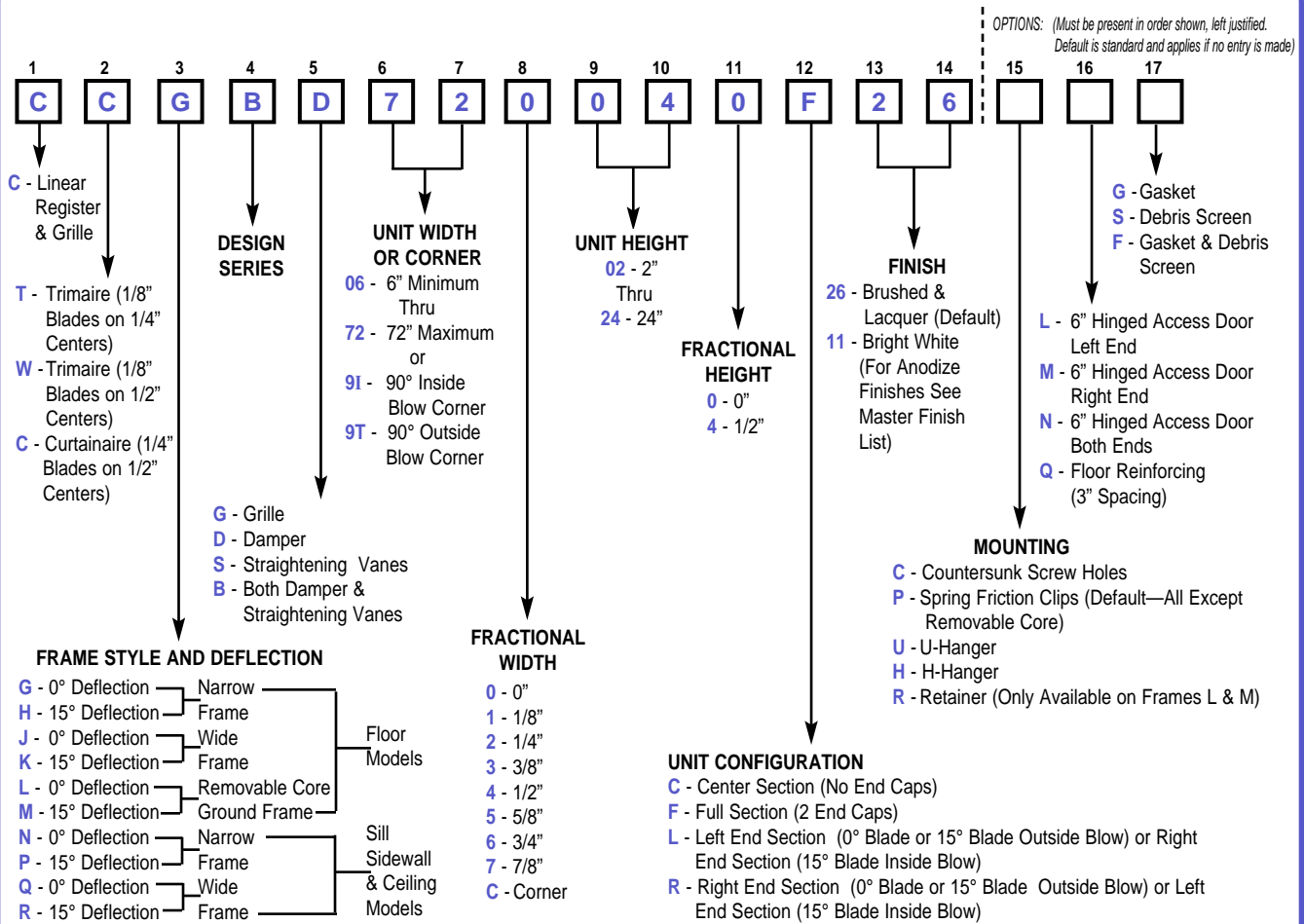
Model CW Series



- Extruded Aluminum Construction
- Reversible Core, For 5° or 15° Upward or Downward Deflection
- Pencil Proof

Varicore





▼ PRODUCT DESCRIPTION

CURTAINAIRE—CC SERIES

Carnes extruded aluminum Curtainair is an attractive, beautifully finished, linear type grille.

Curtainair is ideal for floor or sill application and is equally efficient for side wall or ceiling mounting.

All Curtainair units have 1/4" wide blades on 1/2" centers. They are available for floor or sill mounting in sizes 2" to 12" high. Side wall or ceiling models are available in sizes 2" to 24" with counter sunk screw holes or two types of concealed mounting. Curtainair is available with 3/4" or 1" wide frame borders. The floor mount models have the blade supports on 6" centers as standard. Blade supports on 3" centers are optional for extra heavy duty applications. The sill, sidewall and ceiling models have the blade supports on 9" centers. All models are available with 0° or 15° blade deflection. Maximum single unit length is 72". Two or more lengths may be butted together with only a hairline crack at the joint, creating the appearance of a continuous grille.

The standard finish is brushed satin aluminum with a coat of lacquer for added protection. Natural, color, or duranodic anodize or painted finishes are available on special order. Curtainair grilles are carefully protected for shipment to preserve the flawless appearance of the product.

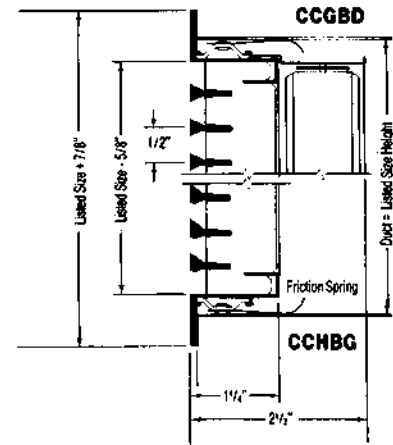
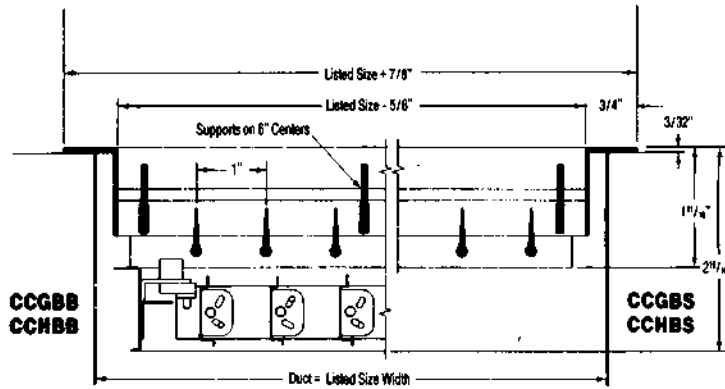
TRIMAIRE—CT & CW SERIES

Carnes extruded aluminum Trimaire is truly a fineline masterpiece pencil proof. The sharp clean lines will contribute to the appearance of any modern building interior.

Trimaire is ideal for floor and sill applications and is equally efficient for sidewall or ceiling mounting.

Trimaire is available in the CT series with 1/8" wide blade on 1/4" centers or the CW series with 1/8" blade on 1/2" centers. They are available for floor or sill mount in sizes 2" to 12" high. Sidewall or ceiling models are available in sizes 2" to 24" with countersunk screw holes or two types of concealed mounting. Trimaire is available with 3/4" or 1" wide frame borders. All models have the blade supports on 6" centers as standard. Blade supports on 3" centers are optional on floor mount models for extra heavy duty application. All models are available with 0° or 15° blade deflection. Maximum single unit length is 72". Two or more lengths may be butted together with only a hairline crack at the joint, creating the appearance of a continuous grille.

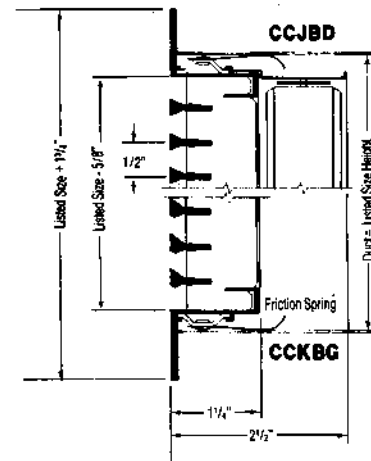
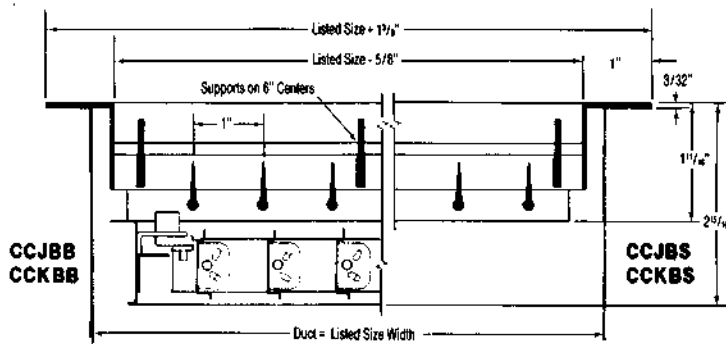
The standard finish is brushed satin aluminum with a coat of lacquer for added protection. Natural, color, or duranodic anodize or painted finishes are available on special order. Trimaire grilles are carefully protected for shipment to preserve the flawless appearance of the product.



Model	Degree Blade Deflection	Damper	Straightening Vanes	Available Sizes*			
				Listed Size Height		Listed Size Width	
				Min.	Max.	Min.	Max.
CCGBG	0	NO	NO	2	12	6	72
CCHBG	15	NO	NO	2	12	6	72
CCGBD	0	YES	NO	2	12	6	72
CCHBD	15	YES	NO	2	12	6	72
CCGBS	0	NO	YES	2	12	6	72
CCHBS	15	NO	YES	2	12	6	72
CCGBB	0	YES	YES	2	12	6	72
CCHBB	15	YES	YES	2	12	6	72

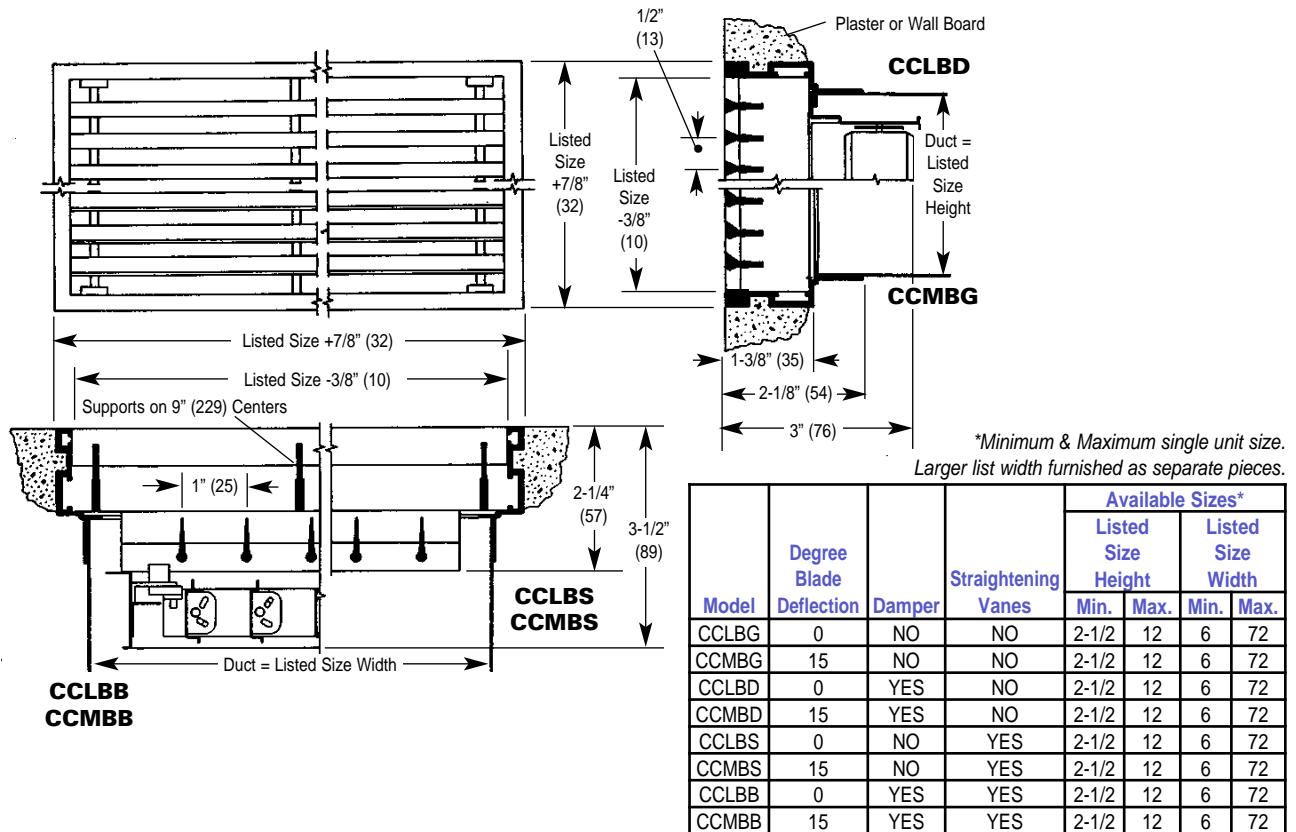
*Minimum & Maximum single unit size. Larger list width furnished as separate pieces.

Curtainair Floor Application (CCJB, CCKB)

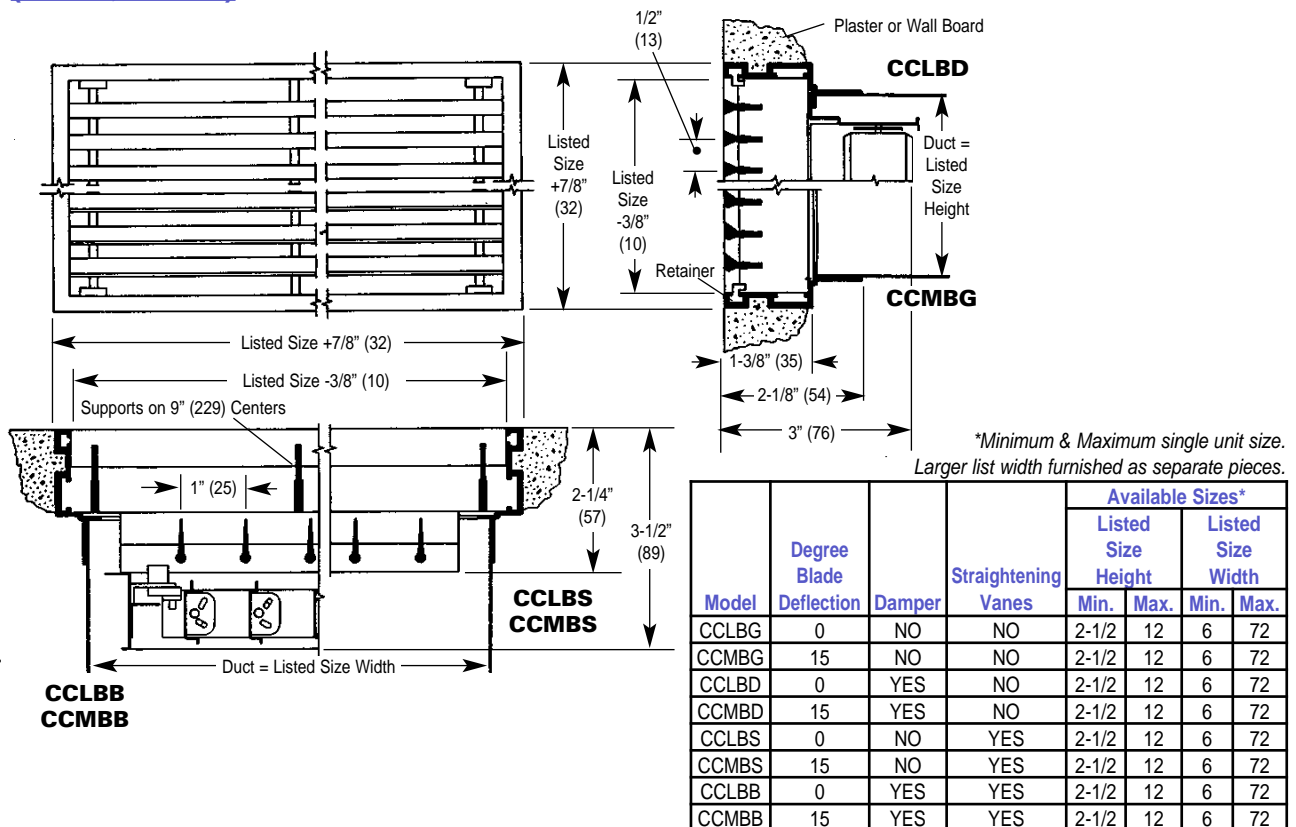


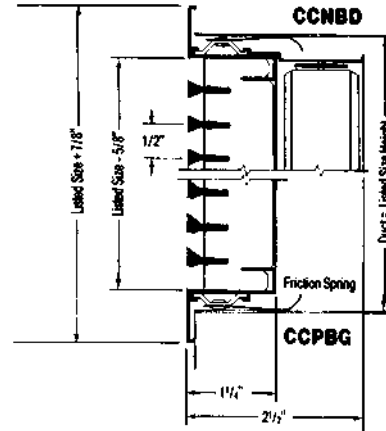
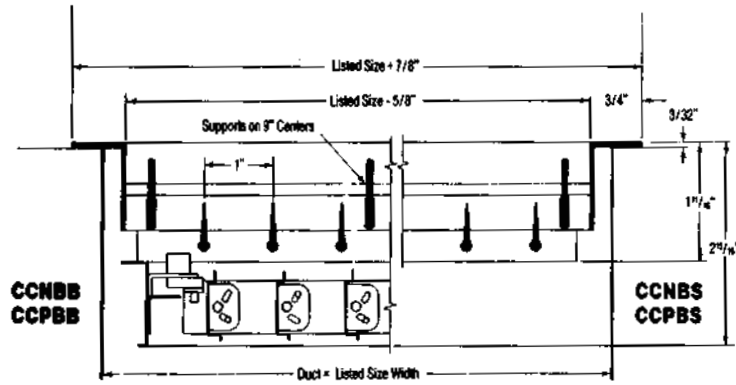
Model	Degree Blade Deflection	Damper	Straightening Vanes	Available Sizes*			
				Listed Size Height		Listed Size Width	
				Min.	Max.	Min.	Max.
CCJBG	0	NO	NO	2	12	6	72
CCKBG	15	NO	NO	2	12	6	72
CCJBD	0	YES	NO	2	12	6	72
CCKBD	15	YES	NO	2	12	6	72
CCJBS	0	NO	YES	2	12	6	72
CCKBS	15	NO	YES	2	12	6	72
CCJBB	0	YES	YES	2	12	6	72
CCKBB	15	YES	YES	2	12	6	72

*Minimum & Maximum single unit size. Larger list width furnished as separate pieces.



Curtainair Sidewall and Ceiling Application - Removable Core w/Option "R" (CCLB, CCMB)

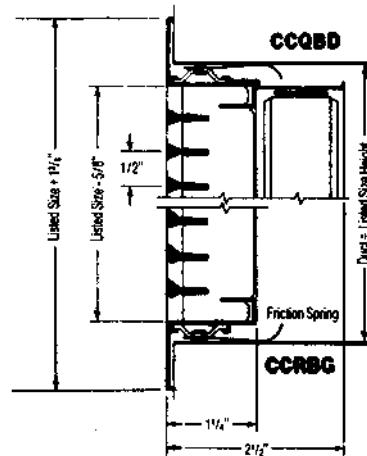
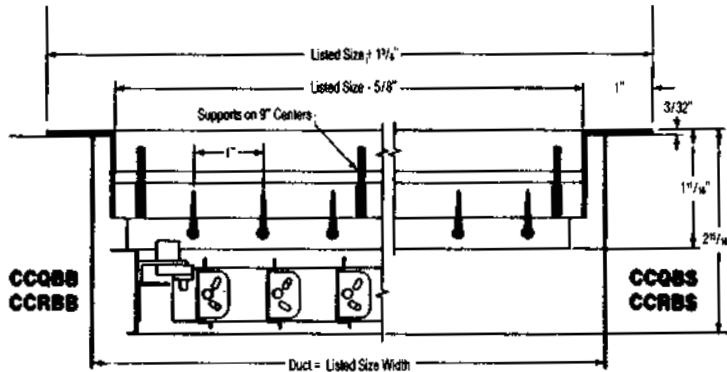




Model	Degree Blade Deflection	Damper	Straightening Vanes	Available Sizes*			
				Listed Size Height		Listed Size Width	
				Min.	Max.	Min.	Max.
CCNBG	0	NO	NO	2	12	6	72
CCPBG	15	NO	NO	2	12	6	72
CCNBD	0	YES	NO	2	12	6	72
CCPBD	15	YES	NO	2	12	6	72
CCNBS	0	NO	YES	2	12	6	72
CCPBS	15	NO	YES	2	12	6	72
CCNBB	0	YES	YES	2	12	6	72
CCPBB	15	YES	YES	2	12	6	72

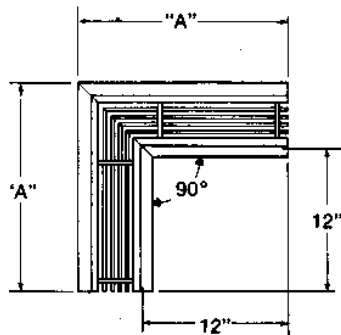
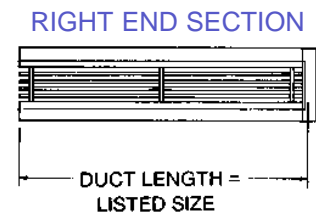
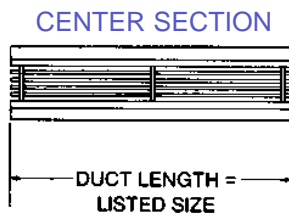
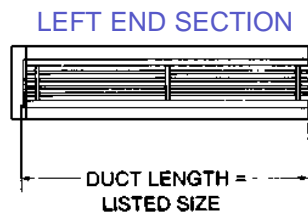
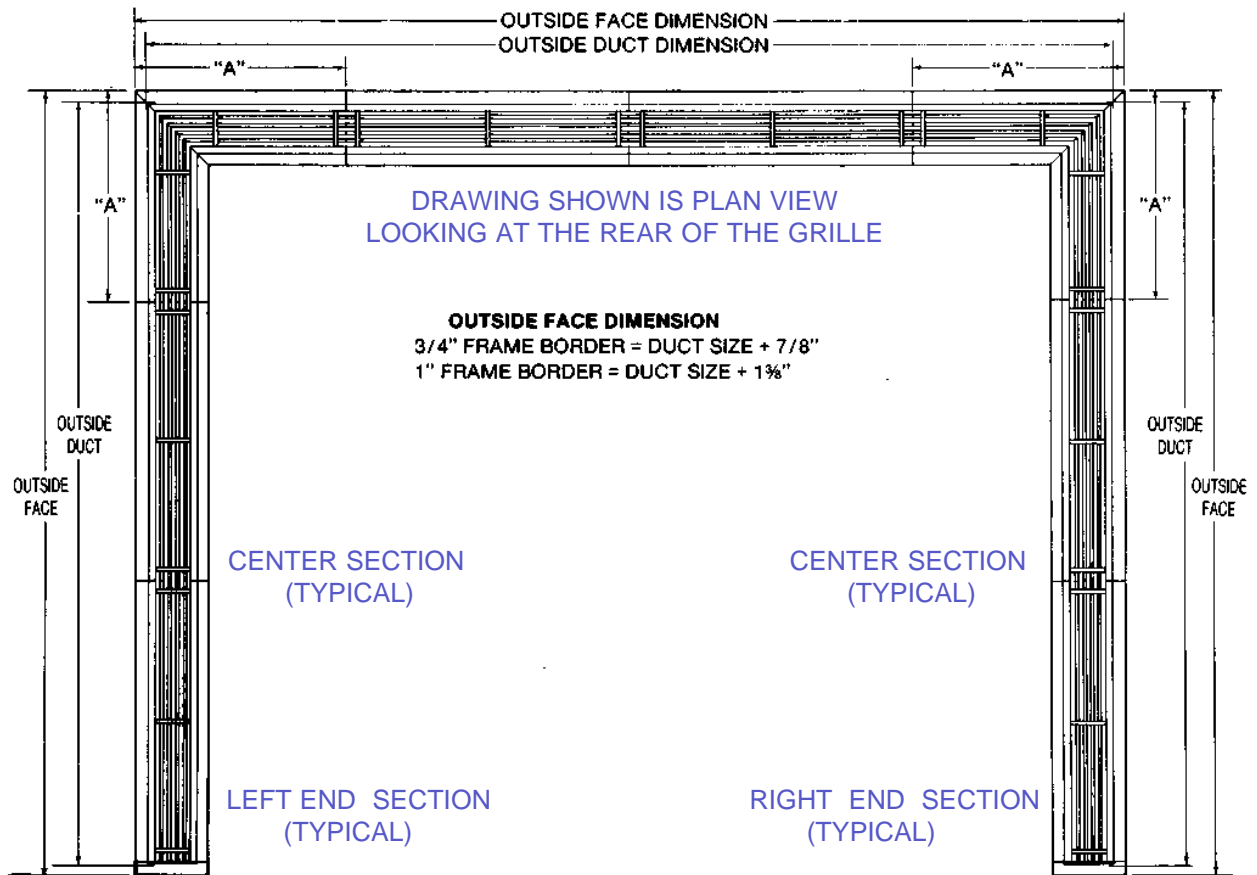
*Minimum & Maximum single unit size. Larger list width furnished as separate pieces.

Curtaine Sill Application (CCQB, CCRB)



Model	Degree Blade Deflection	Damper	Straightening Vanes	Available Sizes*			
				Listed Size Height		Listed Size Width	
				Min.	Max.	Min.	Max.
CCQB	0	NO	NO	2	12	6	72
CCRB	15	NO	NO	2	12	6	72
CCQBD	0	YES	NO	2	12	6	72
CCRBD	15	YES	NO	2	12	6	72
CCQBS	0	NO	YES	2	12	6	72
CCRBS	15	NO	YES	2	12	6	72
CCQBB	0	YES	YES	2	12	6	72
CCRBB	15	YES	YES	2	12	6	72

*Minimum & Maximum single unit size. Larger list width furnished as separate pieces.



SPECIFY INSIDE OR
OUTSIDE BLOW ON
15° BLADE
DEFLECTION

DIMENSIONS LISTED IN INCHES

Listed Size	"A" Dimension		Listed Size	"A" Dimension	
	3/4" Frame	1" Frame		3/4" Frame	1" Frame
2	14-3/8	14-5/8	7-1/2	19-7/8	20-1/8
2-1/2	14-7/8	15-1/8	8	20-3/8	20-5/8
3	15-3/8	15-5/8	8-1/2	20-7/8	21-1/8
3-1/2	15-7/8	16-1/8	9	21-3/8	21-5/8
4	16-3/8	16-5/8	9-1/2	21-7/8	22-1/8
4-1/2	16-7/8	17-1/8	10	22-3/8	22-5/8
5	17-3/8	17-5/8	10-1/2	22-7/8	23-1/8
5-1/2	17-5/8	18-1/8	11	23-3/8	23-5/8
6	18-3/8	18-5/8	11-1/2	23-7/8	24-1/8
6-1/2	18-7/8	19-1/8	12	24-3/8	24-5/8
7	19-3/8	19-5/8			

SOUND DATA

Sound ratings are based on a 4 foot unit with a damper full open, and a 20 db room attenuation. For lengths other than 4 feet, use the table below to determining the increase in noise level.

Number of 4 foot lengths	db to be added
1	0
2	3
3	5
4	6
6	8
10	10

Tests show that drastic dampering at the grille will result in considerable db increase. Dampering at the grille should be reserved for fine balancing. Gross balancing should be provided for by dampers upstream in the supply ductwork.

NC values shown in the performance tables are for the damper in the full open position. Partially closed dampers will increase the NC level as shown in the table below.

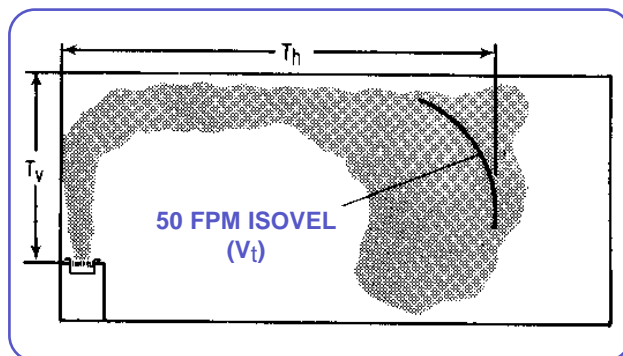
Effective Damper Opening %	db to be added
100	0
82	8
71	13
50	21

“L” indicated NC value less than 20.

PRESSURE

The total and static pressure is with damper in the full open position and is given in inches of water gage (w.g.)

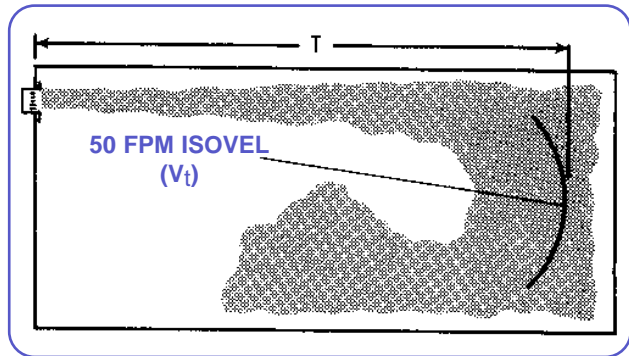
THROW



SILL & FLOOR APPLICATION

Throw values are based on 4 foot length of grille having 0° or 15° blade deflection and supply air temperature equal to room air temperature. The maximum throw value shown is based on a Vt of 50 FPM and the minimum throw value on 150 FPM. Throw values for sidewall application are based on 8 to 10 foot mounting height (See sketches above).

Cooler supply air will result in shorter throw values.



SIDEWALL APPLICATION

Warmer supply air will result in longer throw values. Use the multiplication factors in the table below to determine throw values depending on supply air temperature.

Vt FPM	Isothermal	$\Delta t = -20^{\circ}\text{F}$	$\Delta t = +20^{\circ}\text{F}$
150	1.00	1.00	1.00
100	1.00	.90	1.10

▼ SPECIFICATIONS

CURTAINAIRE

Furnish and install Carnes CC Series Curtainair extruded aluminum linear registers or grilles of the size and style shown on the drawings. Units shall have 1/4" wide blades on 1/2" centers and be pencil proof. Units for floor application shall have the blade supports on 6" centers. For extra heavy duty floor application the blade supports are to be on 3" centers. Units for sill, sidewall or ceiling applications are to have blade supports on 9" centers. Sidewall and ceiling units are to be provided with concealed mounting hardware.

TRIMAIRE

Furnish and install Carnes CT or CW Series Trimaire extruded aluminum linear registers or grilles of the size and style shown on the drawings. The CT Series has 1/8" wide blades on 1/4" centers. The CW Series has 1/8" blades on 1/2" centers. All units are to have blade supports on 6" centers. For extra heavy duty floor application the blade supports are to be on 3" centers. Sidewall and ceiling units are to be provided with concealed hardware.

0° Blade Deflection

List Size Height	A _k Per Ft. of Length	Duct Velocity - FPM		200	300	400	500	600	700	800	900
		Total Pressure P _t		.010	.025	.046	.073	.107	.147	.193	.247
		Static Pressure P _t		.008	.020	.037	.058	.085	.117	.154	.197
2"	.038	CFM/FT.		33	50	67	84	100	117	134	150
		NC		L	22	31	38	44	48	53	55
		Throw	Sidewall	8 - 4	9 - 6	11 - 6	11 - 8	12 - 8	15 - 9	16 - 9	17 - 10
		in Ft.	Sill-Floor	12 - 8	13 - 10	14 - 11	15 - 12	16 - 12	18 - 13	19 - 14	20 - 15
2-1/2"	.063	CFM/FT.		42	62	83	104	125	146	166	187
		NC		L	L	22	29	35	39	43	47
		Throw	Sidewall	8 - 4	10 - 6	12 - 7	12 - 8	13 - 8	15 - 9	17 - 9	17 - 11
		in Ft.	Sill-Floor	13 - 9	14 - 11	15 - 12	16 - 12	17 - 12	18 - 14	20 - 15	21 - 15
3"	.089	CFM/FT.		50	75	100	125	150	175	200	225
		NC		L	L	L	22	29	33	37	41
		Throw	Sidewall	8 - 4	10 - 6	12 - 7	13 - 8	14 - 8	15 - 9	17 - 10	18 - 11
		in Ft.	Sill-Floor	13 - 9	15 - 11	16 - 12	17 - 12	18 - 13	19 - 14	20 - 14	21 - 15
3-1/2"	.114	CFM/FT.		58	88	117	146	175	204	234	263
		NC		L	L	L	L	23	28	32	36
		Throw	Sidewall	8 - 4	11 - 7	13 - 8	14 - 9	15 - 9	16 - 10	18 - 11	18 - 12
		in Ft.	Sill-Floor	14 - 9	15 - 11	17 - 12	18 - 13	19 - 13	20 - 15	21 - 15	22 - 16
4"	.139	CFM/FT.		67	100	133	176	200	233	266	300
		NC		L	L	L	L	22	26	30	34
		Throw	Sidewall	10 - 4	12 - 7	14 - 8	15 - 9	16 - 10	17 - 11	19 - 12	19 - 12
		in Ft.	Sill-Floor	14 - 9	16 - 11	18 - 12	19 - 13	20 - 14	21 - 15	22 - 15	23 - 16
4-1/2"	.164	CFM/FT.		75	113	150	188	225	263	300	338
		NC		L	L	L	L	22	27	31	34
		Throw	Sidewall	11 - 4	13 - 7	15 - 9	16 - 10	17 - 10	18 - 12	20 - 12	20 - 13
		in Ft.	Sill-Floor	15 - 9	16 - 12	19 - 13	20 - 14	21 - 14	22 - 16	23 - 16	24 - 17
5"	.189	CFM/FT.		83	125	167	209	250	292	334	375
		NC		L	L	L	L	22	27	34	37
		Throw	Sidewall	12 - 4	14 - 8	16 - 9	17 - 10	18 - 11	20 - 13	21 - 13	22 - 14
		in Ft.	Sill-Floor	15 - 9	17 - 12	20 - 13	21 - 14	22 - 15	23 - 16	24 - 16	25 - 17
6"	.238	CFM/FT.		100	150	200	250	300	350	400	450
		NC		L	L	L	L	23	29	32	36
		Throw	Sidewall	14 - 4	15 - 8	17 - 10	19 - 11	20 - 12	22 - 13	23 - 13	25 - 15
		in Ft.	Sill-Floor	16 - 9	18 - 12	20 - 13	22 - 15	23 - 16	25 - 17	26 - 17	27 - 18
8"	.322	CFM/FT.		133	200	267	334	400	467	534	600
		NC		L	L	L	L	24	28	33	36
		Throw	Sidewall	13 - 4	16 - 9	18 - 11	21 - 12	23 - 13	25 - 14	26 - 15	28 - 17
		in Ft.	Sill-Floor	17 - 10	19 - 13	21 - 14	23 - 16	25 - 17	27 - 18	28 - 18	30 - 19
10"	.401	CFM/FT.		167	250	333	417	500	583	666	750
		NC		L	L	L	L	24	29	33	37
		Throw	Sidewall	15 - 5	18 - 10	20 - 12	24 - 14	26 - 15	28 - 16	30 - 17	31 - 19
		in Ft.	Sill-Floor	18 - 10	21 - 13	23 - 15	25 - 17	27 - 18	29 - 19	31 - 20	33 - 21
12"	.471	CFM/FT.		200	300	400	500	600	700	800	900
		NC		L	L	L	23	26	30	34	37
		Throw	Sidewall	17 - 5	21 - 11	23 - 14	27 - 16	29 - 17	32 - 19	34 - 20	35 - 21
		in Ft.	Sill-Floor	20 - 11	23 - 14	26 - 16	28 - 19	30 - 20	32 - 21	34 - 22	36 - 23

Notes on Performance Data

- Performance data is based on tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.
- Actual performance in the field may vary.
- Tests were conducted in isothermal conditions.
- Sound levels are based on a room absorption of 10 db re 10⁻¹² watts.

Notes on Units of Measure Used

- Air flow is given in cubic feet per minute (CFM).
- Static and Total Pressure is given in inches of water (w.g.).
- Throws are given in feet to terminal velocities of 50 and 150 fpm, respectively.
- L indicates an NC of less than 20.

15° Blade Deflection

List Size Height	Ak Per Ft. of Length	Duct Velocity - FPM		200	300	400	500	600	700	800	900
		Total Pressure Pt		.014	.034	.062	.099	.143	.197	.259	.331
		Static Pressure Pt		.012	.029	.053	.084	.121	.167	.220	.281
2"	.034	CFM/FT.		33	50	67	84	100	117	134	150
		NC		L	29	36	41	45	49	52	54
		Throw	Sidewall	8 - 5	10 - 6	11 - 6	15 - 9	15 - 9	16 - 9	19 - 11	19 - 11
		in Ft.	Sill-Floor	12 - 7	13 - 9	14 - 10	14 - 10	15 - 11	17 - 12	18 - 13	18 - 14
2-1/2"	.058	CFM/FT.		42	62	83	104	125	146	166	187
		NC		L	22	29	34	39	42	45	48
		Throw	Sidewall	9 - 5	11 - 6	12 - 7	15 - 9	15 - 9	17 - 9	19 - 11	19 - 11
		in Ft.	Sill-Floor	12 - 8	14 - 10	15 - 10	15 - 11	16 - 13	18 - 13	19 - 13	19 - 14
3"	.081	CFM/FT.		50	75	100	125	150	175	200	225
		NC		L	20	25	30	34	39	41	44
		Throw	Sidewall	9 - 5	11 - 6	13 - 8	15 - 9	16 - 9	18 - 10	19 - 11	20 - 11
		in Ft.	Sill-Floor	12 - 8	14 - 10	15 - 11	16 - 12	17 - 12	18 - 13	19 - 13	20 - 14
3-1/2"	.103	CFM/FT.		58	88	117	146	175	204	234	263
		NC		L	L	21	26	30	34	37	40
		Throw	Sidewall	9 - 6	12 - 7	14 - 9	16 - 10	17 - 9	19 - 11	20 - 12	20 - 12
		in Ft.	Sill-Floor	12 - 8	14 - 10	15 - 11	17 - 12	18 - 12	18 - 13	20 - 14	21 - 15
4"	.125	CFM/FT.		67	100	133	176	200	233	266	300
		NC		L	L	L	26	29	33	36	38
		Throw	Sidewall	10 - 6	13 - 7	15 - 9	17 - 11	18 - 10	20 - 12	21 - 13	21 - 13
		in Ft.	Sill-Floor	13 - 8	15 - 11	16 - 11	18 - 12	19 - 13	19 - 14	21 - 15	22 - 16
4-1/2"	.147	CFM/FT.		75	113	150	188	225	263	300	338
		NC		L	L	L	24	29	32	35	38
		Throw	Sidewall	11 - 6	14 - 7	16 - 9	18 - 11	19 - 11	21 - 13	22 - 14	22 - 14
		in Ft.	Sill-Floor	13 - 8	15 - 11	16 - 11	18 - 12	20 - 13	20 - 14	22 - 15	22 - 16
5"	.167	CFM/FT.		83	125	167	209	250	292	334	375
		NC		L	L	L	24	29	32	36	38
		Throw	Sidewall	12 - 6	15 - 7	17 - 10	19 - 12	21 - 12	23 - 14	24 - 15	25 - 15
		in Ft.	Sill-Floor	14 - 8	16 - 11	17 - 12	19 - 13	21 - 14	22 - 15	23 - 16	23 - 17
6"	.208	CFM/FT.		100	150	200	250	300	350	400	450
		NC		L	L	L	24	30	34	37	40
		Throw	Sidewall	13 - 6	16 - 7	19 - 10	21 - 12	23 - 13	25 - 14	26 - 16	28 - 16
		in Ft.	Sill-Floor	15 - 8	17 - 11	19 - 12	20 - 14	22 - 15	23 - 16	24 - 17	25 - 17
8"	.282	CFM/FT.		133	200	267	334	400	467	534	600
		NC		L	L	L	24	28	32	35	38
		Throw	Sidewall	14 - 7	18 - 8	21 - 11	24 - 13	26 - 14	28 - 15	29 - 17	31 - 18
		in Ft.	Sill-Floor	16 - 8	18 - 11	20 - 13	21 - 15	23 - 16	25 - 17	26 - 18	27 - 18
10"	.355	CFM/FT.		167	250	333	417	500	583	666	750
		NC		L	L	L	23	28	31	34	37
		Throw	Sidewall	16 - 8	20 - 9	23 - 13	27 - 15	29 - 16	31 - 17	33 - 19	25 - 20
		in Ft.	Sill-Floor	17 - 9	20 - 11	22 - 14	23 - 16	25 - 17	27 - 18	29 - 19	30 - 20
12"	.402	CFM/FT.		200	300	400	500	600	700	800	900
		NC		L	L	20	23	28	31	34	36
		Throw	Sidewall	19 - 8	23 - 11	26 - 15	30 - 17	32 - 19	34 - 20	37 - 22	39 - 23
		in Ft.	Sill-Floor	18 - 9	22 - 12	24 - 14	26 - 16	28 - 18	30 - 20	32 - 21	33 - 22

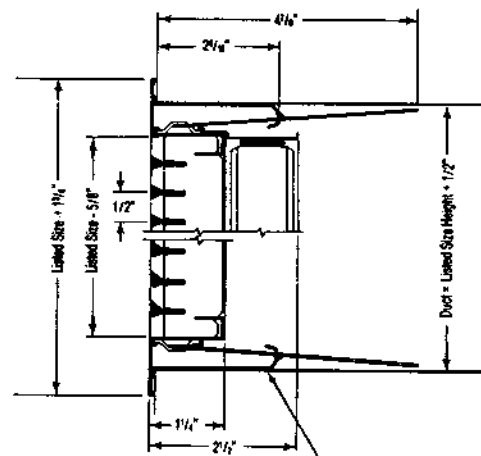
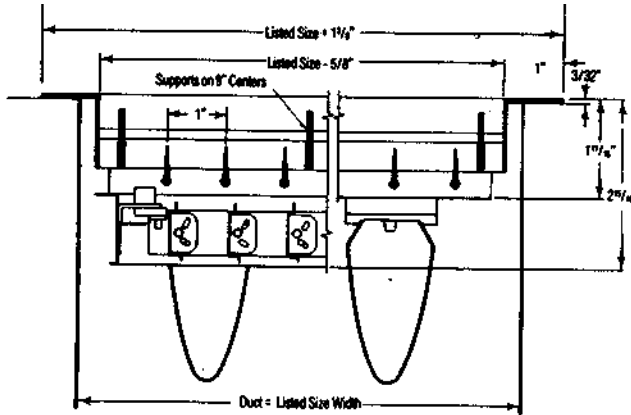
Notes on Performance Data

- Performance data is based on tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.
- Actual performance in the field may vary.
- Tests were conducted in isothermal conditions.
- Sound levels are based on a room absorption of 10 db re 10⁻¹² watts.

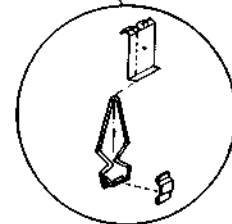
Notes on Units of Measure Used

- Air flow is given in cubic feet per minute (CFM).
- Static and Total Pressure is given in inches of water (w.g.).
- Throws are given in feet to terminal velocities of 50 and 150 fpm, respectively.
- L indicates an NC of less than 20.

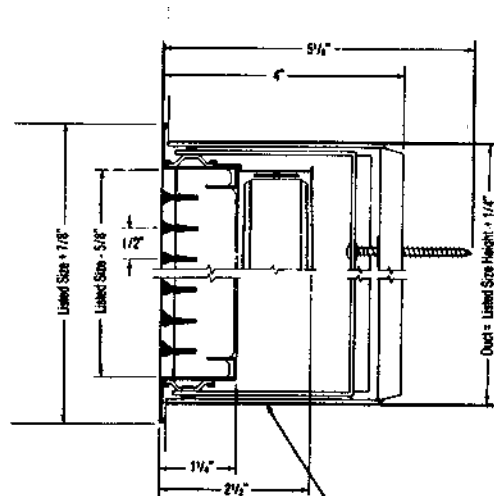
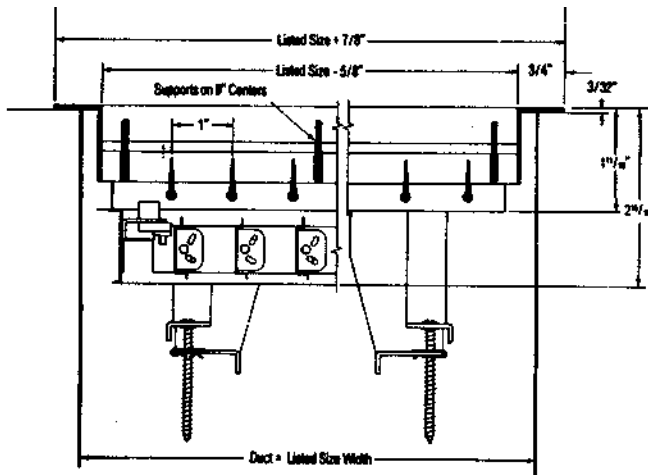
CURTAINAIRE/TRIMAIRE OPTION "H"



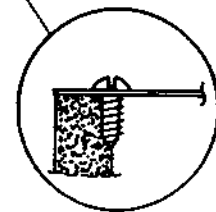
- Only recommended with wide frames J, K, Q & R.
- Available on CC, CT & CW (Model CC shown above).
- Duct height must be oversized by 1/2" or Grille height undersized by 1/2" to accommodate Option "H" hardware.

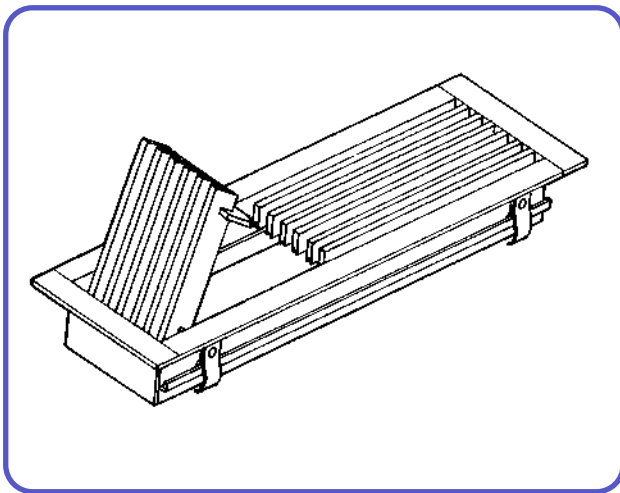


CURTAINAIRE/TRIMAIRE OPTION "U"



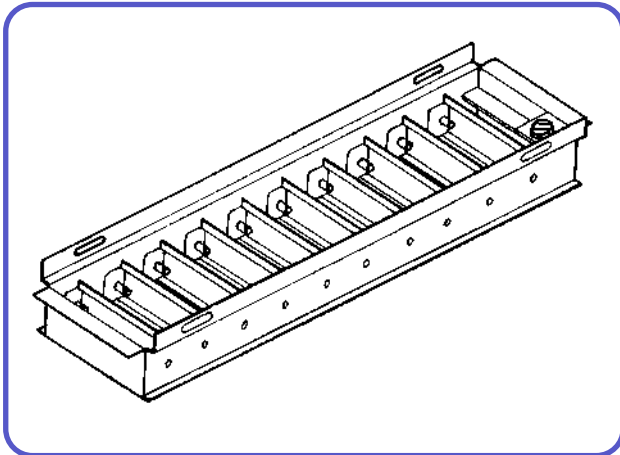
- Only recommended with wide frames J, K, Q & R.
- Available on CC & CW. Not recommended on CT because of difficulty in fitting a screwdriver through the face (Model CC shown above).
- Duct height must be oversized by 1/4" to accommodate Option "U" hardware.





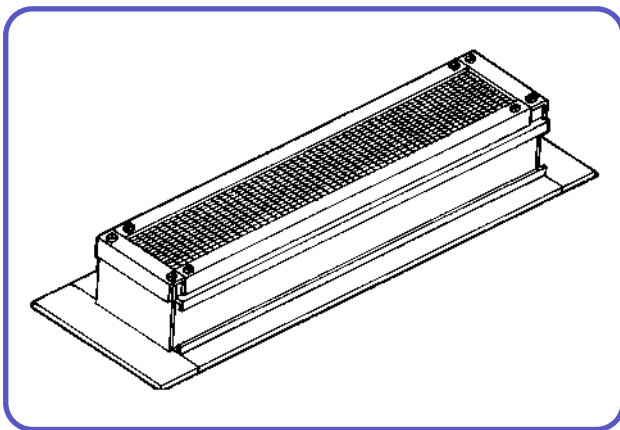
ACCESS DOOR (*Options L, M or O*)

The primary application for linear bar grilles with access doors is access through the grille to operate the controls of a fan coil unit. Access doors are available on both Curtinaire and Trimaire grilles in both 0° and 15° blade deflection. When an access door is required in one end of the grille with 15° blade deflection, it is important that information is provided to insure the door is placed on the correct end in relationship to the required air pattern. The standard access door length is 6". Other lengths to meet any job requirement can be made on special order. Access doors can be ordered in one or both ends of the grille. Units with access doors are not available for floor application



OPPOSED BLADE DAMPER — Model CXDA

Opposed blade dampers are generally ordered attached to the grille by using the proper model number. The model CXDA opposed blade damper can be ordered separate for field mounting when the job requires that only a portion of the grille be damped. Model CXDA dampers are cold roll steel construction and painted gray enamel finish. These dampers are available in width size 6" though 36", and height sizes 2-1/2" through 24". The damper actuator is slotted to accept a standard screwdriver and is easily accessible through the grille face. A height size 2" damper is available. It is single blade construction.



DEBRIS SCREEN (*Option S*)

Debris screen is 18 x 14 galvanized wire cloth (insect screen). It is designed to prevent small objects from falling into the duct system. Curtinaire and Trimaire units equipped with debris screen are particularly effective in restaurant sill applications. Debris screen is available on units with or without dampers and or straightening vanes.