

ACOUSTIC CABINET FANS

CVTT Series, Forward Curve Belt Drive Fans



Description

The CVTT range of belt drive cabinet fans offer a wide range of airflow and static pressure development performances. The range comprises of ten nominal product sizes with a selection of motor powers between 0.18 and 15.0 kW. All models incorporate double inlet forward curved centrifugal fans. Air volume performance ranges from 500 up to 40,000 m³/hr, with static pressure developments up to 600 mmWG. Due to the flexible design the range can be supplied with either a horizontal or vertical discharge configuration to suit the most demanding applications. If required (to special order) inlet panels can be supplied with a circular ducting connection flange.

Applications

The CVTT range are suitable for many general ventilation applications where precise continuous volume flow rates are required. Typical applications include:

- Commercial offices.
- Public Buildings.
- Restaurants.
- Commercial and Industrial Kitchens.

Construction

Casing

The fan casings are manufactured from heavy gauge galvanised sheet steel with double thickness side panels. All panels are internally lined with high density acoustic insulation, and the motor / belt access panel is supplied with pressure locks providing secure and fast maintenance access.

The CVTT range are supplied, as standard, with the access door (for motor, pulley and belt assembly) on the right hand side of the unit when viewed from the discharge end. If required, to special order, the access door can be supplied on the left hand side. Please enquire.

Fan / Impeller

All models incorporate a double inlet low pressure forward curved centrifugal impeller. The impeller is housed in a specifically designed galvanised metal scroll casing. The complete impeller and motor assembly is then mounted within the fan cabinet on anti-vibration mounts and connected to the discharge port with a rectangular flexible coupling. All models are supplied, as standard, in horizontal discharge (code H) configuration. However, vertical discharge (code V) configuration can be supplied to special order. Please enquire.

Motor / Transmission

All models incorporate three phase asynchronous induction motors with a squirrel cage rotor in die cast aluminium. All motors are manufactured in accordance with UNE-20113 and CEI 34-1 standards. The CVTT motors incorporate the following standard specifications:

- Three Phase 230/400V 50Hz, IP55 Protection
- All motors up to 2.2 kW are mounted onto the fan casing scroll.
- All motors above 3.0 kW are mounted separate to the fan scroll onto an adjoining support frame.
- Motors are suitable for belt and pulley transmission.

Technical characteristics

Model Type	Motor power		Fan speed		Air volume		Maximum weight with motor (kg)
	Minimum (kW)	Maximum (kW)	Minimum (r.p.m.)	Maximum (r.p.m.)	Minimum (m ³ /h)	Maximum (m ³ /h)	
CVTT-7/7	0,18	0,75	800	1800	500	2400	43
CVTT-9/9	0,37	1,1	800	1500	1300	4500	52
CVTT-10/10	0,37	1,5	600	1300	1500	5000	66
CVTT-12/12	0,37	2,2	500	1100	1500	7500	88
CVTT-15/15	0,55	4,0	300	1000	2000	12000	108
CVTT-18/18	1,1	5,5	400	900	2500	16000	147
CVTT-20/20	1,5	7,5	300	800	4000	20000	270
CVTT-22/22	1,5	11,0	300	700	4000	28000	309
CVTT-25/25	2,2	11,0	250	600	5000	32000	350
CVTT-30/28	2,2	15,0	200	500	6000	40000	472

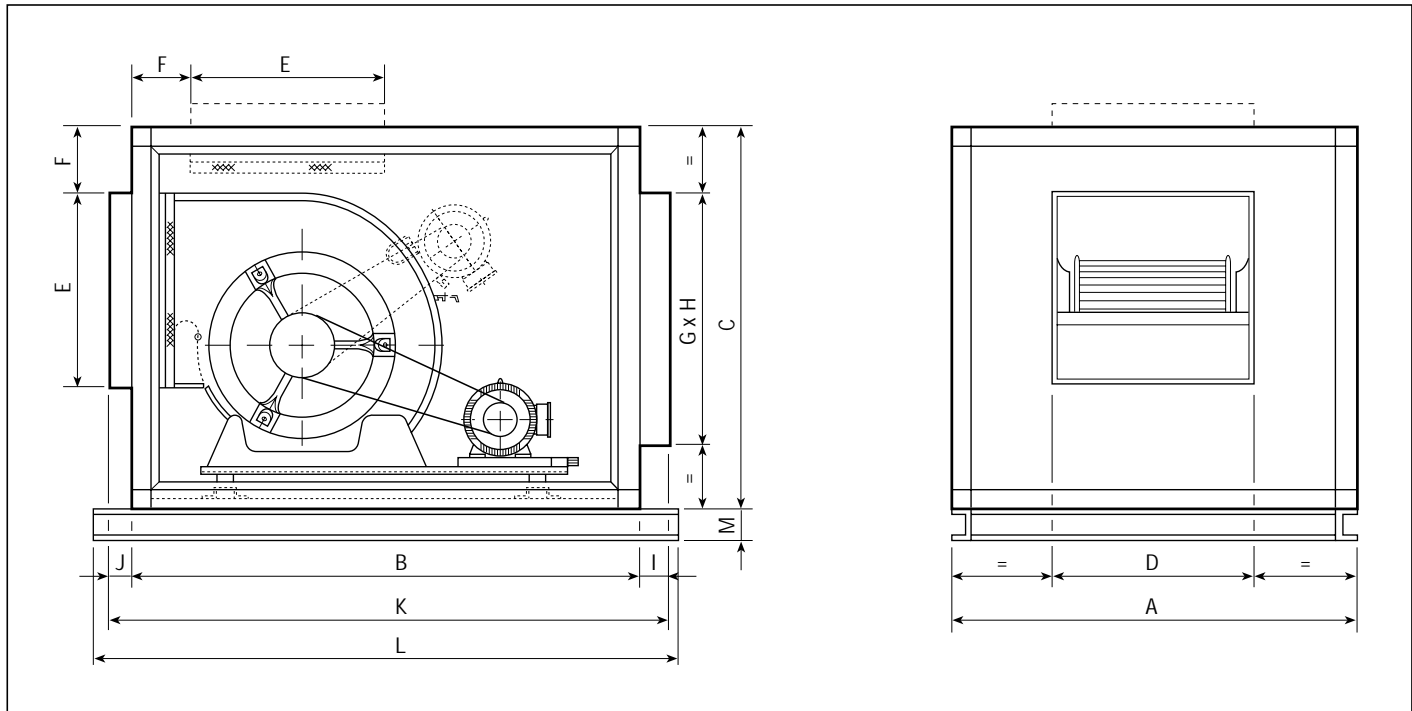
* With high power motor.

Acoustic characteristics

Sound power spectrum: To obtain the sound power spectrum, subtract the correction values (dB(A)) shown in the table below at the corresponding octave average frequencies, from the value provided in the product Performance Curve graphs.

Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	16000 Hz
CVTT-7/7	17	15	11	12	4	4,5	14	19	27
CVTT-9/9	17	15	11	12	4	4,5	14	19	27
CVTT-10/10	17	15	11	11	4	4,5	14	20	27
CVTT-12/12	16	14	11	10	4,4	4,5	15	21	27
CVTT-15/15	13	13	10	10	4,6	5	15	22	27
CVTT-18/18	11	12	9	9	5	6	15	22	27
CVTT-20/20	10	11	8	8	5,7	7	16	23	27
CVTT-22/22	9	11	7	8	6,3	7,5	17	24	27
CVTT-25/25	9	11	7	8	6,3	7,5	17	25	27
CVTT-30/28	9	11	7	8	6,3	7,5	18	25	27

■ Dimensions (mm)



Type	A	B	C	D	E	F	G	H	I	J	K	L	M
Horizontal discharge													
CVTT-7/7 - H	554	710	483	232	222	92	325	325	40	30	780	-	-
CVTT-9/9 - H	605	800	554	300	260	96	400	400	40	30	870	-	-
CVTT-10/10 - H	710	850	605	333	289	94	450	450	40	30	920	-	-
CVTT-12/12 - H	775	950	675	396	341	82	500	500	40	30	1020	-	-
CVTT-15/15 - H	950	1018	775	473	403	88	600	600	40	30	1088	-	-
CVTT-18/18 - H	1018	1250	900	556	479	82	700	700	40	30	1320	-	-
CVTT-20/20 - H	1250	1350	1140	630	630	137	800	800	40	30	1420	1510	80
CVTT-22/22 - H	1350	1500	1250	695	700	161	900	900	40	30	1570	1660	80
CVTT-25/25 - H	1500	1600	1350	796	800	122	1000	1000	40	30	1670	1760	80
CVTT-30/28 - H	1700	1900	1600	870	945	150	1200	1200	40	30	1970	2060	80
Vertical discharge													
CVTT-7/7 - V	554	710	483	232	222	92	325	325	40	30	780	-	-
CVTT-9/9 - V	605	800	554	300	260	96	400	400	40	30	870	-	-
CVTT-10/10 - V	710	850	605	333	289	94	450	450	40	30	920	-	-
CVTT-12/12 - V	775	950	675	396	341	82	500	500	40	30	1020	-	-
CVTT-15/15 - V	950	1018	775	473	403	88	600	600	40	30	1088	-	-
CVTT-18/18 - V	1018	1250	900	556	479	82	700	700	40	30	1320	-	-
CVTT-20/20 - V	1250	1500	1018	630	630	137	800	800	40	30	1540	1660	80
CVTT-22/22 - V	1350	1600	1086	695	700	161	900	900	40	30	1640	1760	80
CVTT-25/25 - V	1500	1800	1190	796	800	128	1000	1000	40	30	1840	1960	80
CVTT-30/28 - V	1700	2000	1390	870	945	128	1200	1200	40	30	2040	2160	80



■ Performance curves

FAN SELECTION EXAMPLE FOR A CVTT CABINET FAN

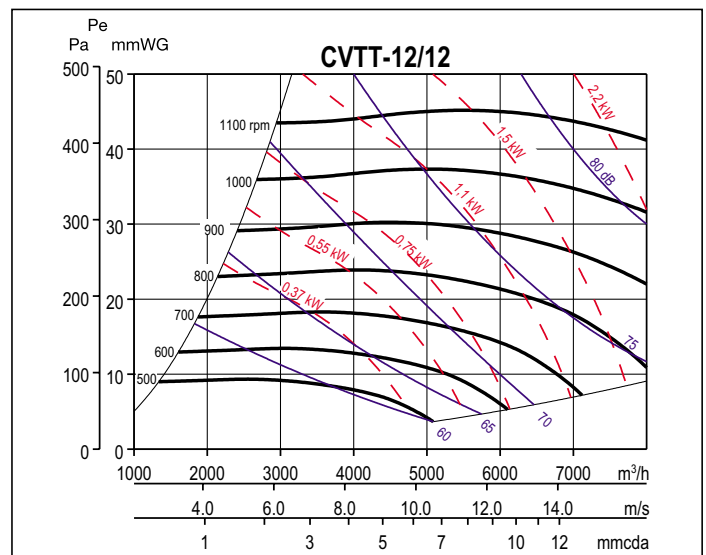
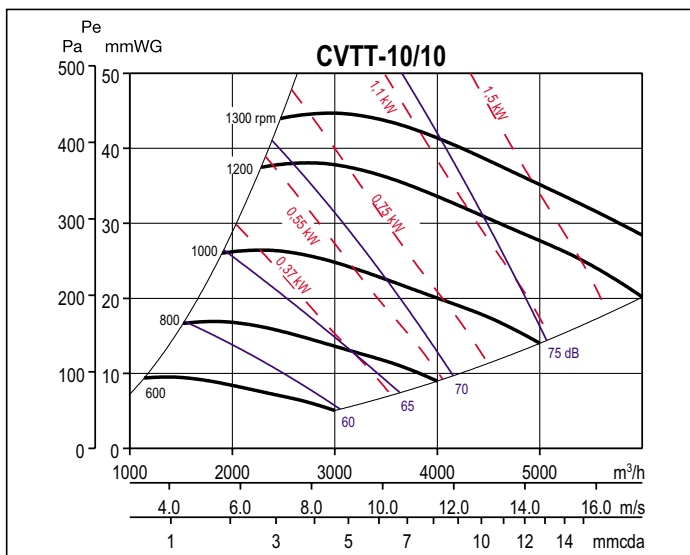
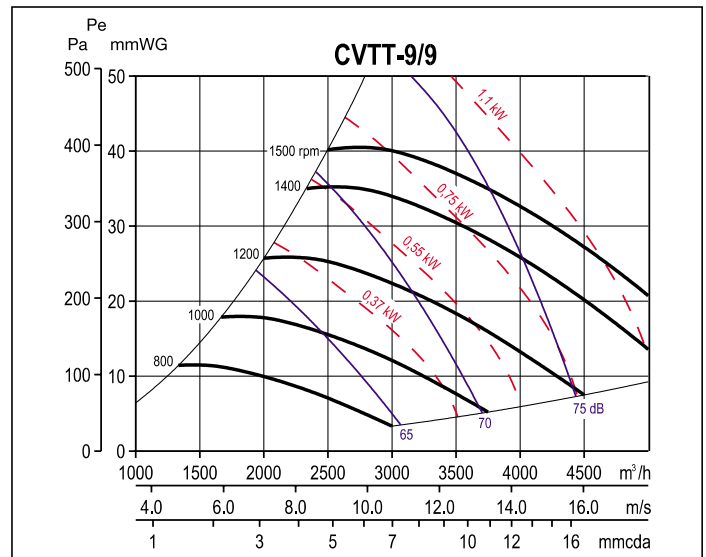
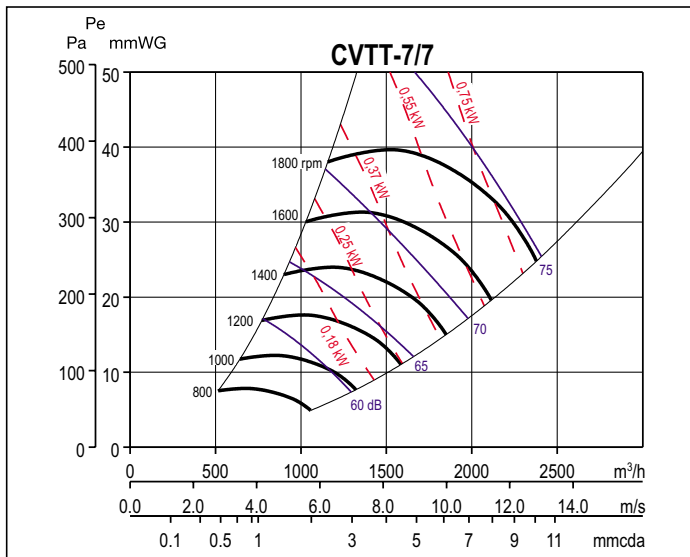
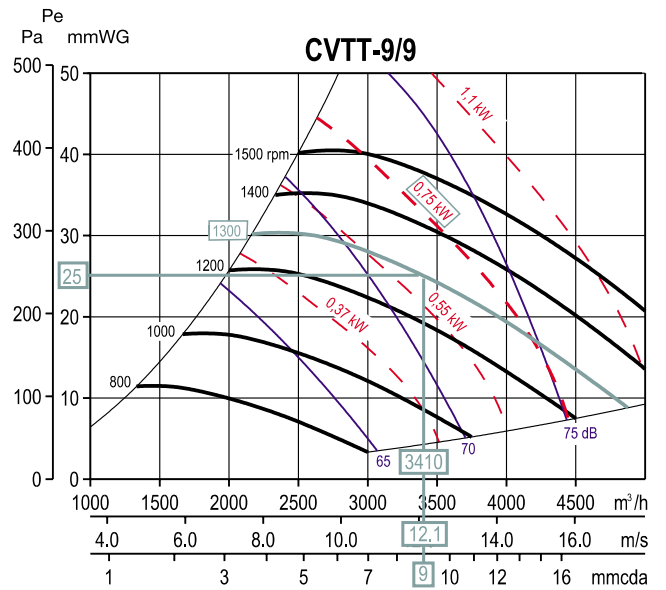
Required volume: 3410 m³/h
 @ calculated pressure: 25 mm c.d.a.

With the required volume and static pressure values calculated we trace along the horizontal (against pressure value) and vertical (against volume value) to the point of intersection, as shown. This intersection point lies on the projected fan curve (green line) with a Speed (r.p.m.) of 1300 and motor power of 0.75kW (power curve in dashed red - motor power curve always to right of fan curve). From this point we can also approximate the sound power level as being 71.8dB(A), as it lies between the blue lines of 70dB(A) and 75dB(A).

The resulting model would have the reference CVTT-9/9 - 0,75 kW (1300 r.p.m.), where:

- Motor Power: 0,75 kW
- Speed: 1300 r.p.m.
- Sound Pressure Level @ 1m: 71.8 dB(A)
- Air Velocity at Discharge: 12.1 m/s

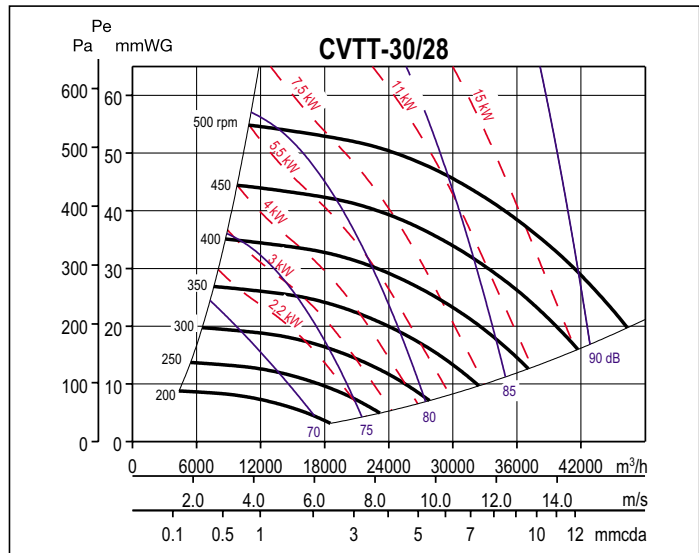
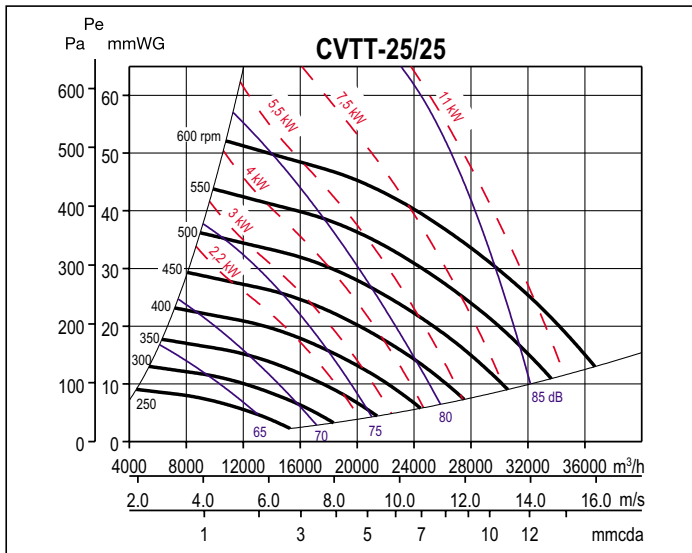
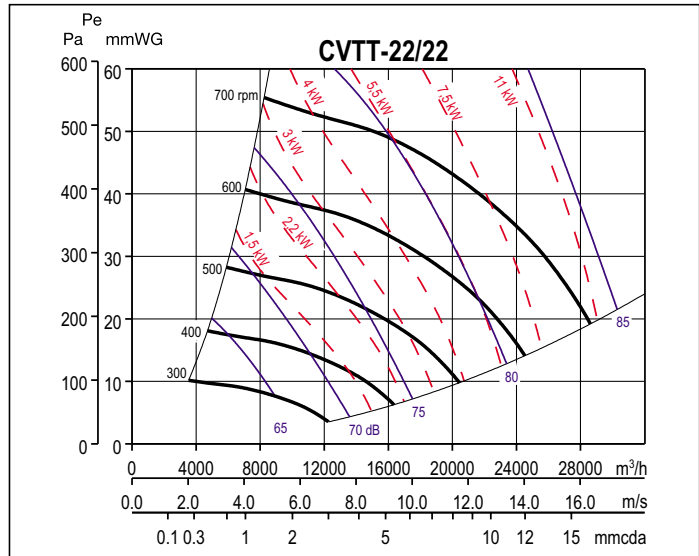
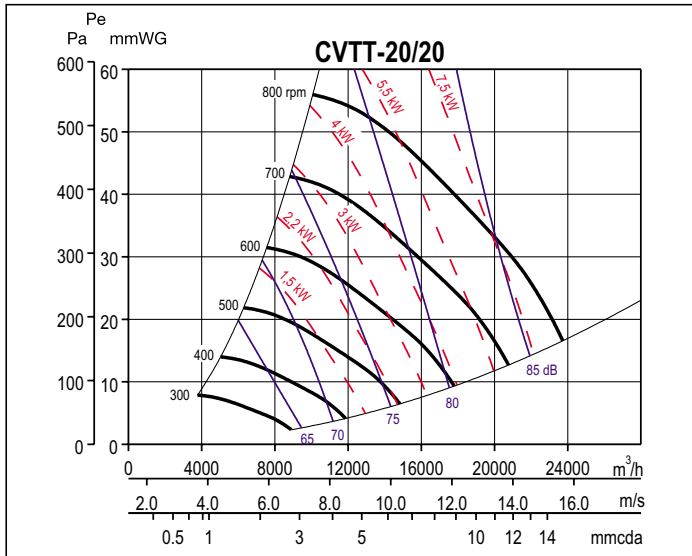
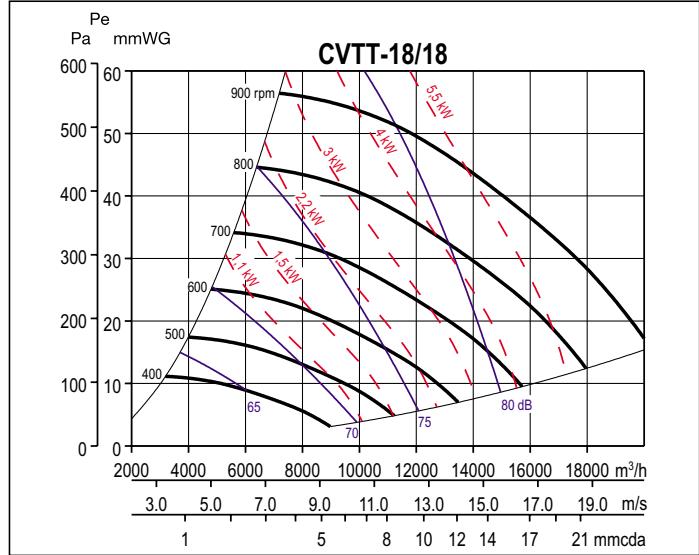
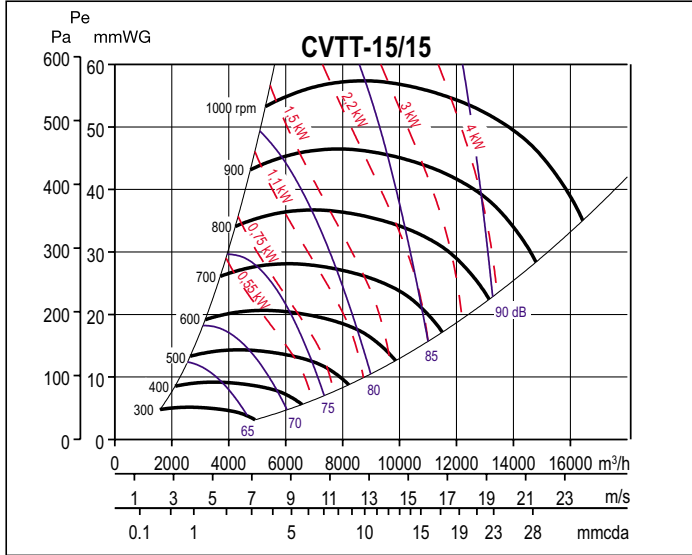
If the fan operates with a free discharge, the fan pressure reading should be increased by the value of pressure rated in the bottom scale - mmWG. In our example we will use an increment of 9 mmWG.





Performance curves

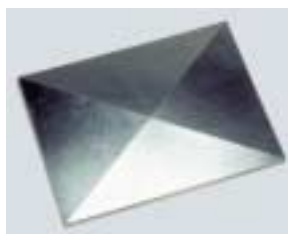
- Q = Air volume in, m³/hr and m³/s
- Pe = Static pressure in mmWG and Pa.
- Dry air at 20 °C and 760 mmHg.
- Air flow data in accordance with the following standards: UNE 100-212-89, BS 848, Part 1, AMCA 210-85 and ASHRAE 51-1985.



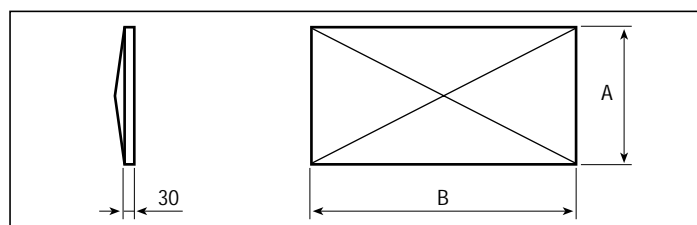
Options: Circular Inlet Flanges

CVTT model	Nominal circular inlet flange diameter (mm)
CVTT-7/7	315
CVTT-9/9	400
CVTT-10/10	450
CVTT-12/12	500
CVTT-15/15	600
CVTT-18/18	700
CVTT-20/20	800
CVTT-22/22	900
CVTT-25/25	1000
CVTT-30/28	1200

Accessories



CTI, Pitched Roof Cover
Pitched roof / cover for exterior mounted installations.

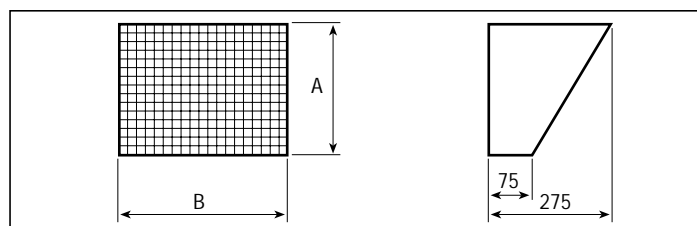


Type	Model	A	B	Type	Model	A	B	
							H	V
CTI-7	CVTT-7/7	557	713	CTI-18	CVTT-18/18	1021	1253	1253
CTI-9	CVTT-9/9	608	803	CTI-20	CVTT-20/20	1253	1353	1503
CTI-10	CVTT-10/10	713	853	CTI-22	CVTT-22/22	1353	1503	1603
CTI-12	CVTT-12/12	778	953	CTI-25	CVTT-25/25	1503	1603	1803
CTI-15	CVTT-15/15	953	1021	CTI-30	CVTT-30/28	1703	1903	2003

Dimensions mm.



Protection Guards Discharge CVD / Inlet CVA
Protection guards designed for the direct connection to the discharge (CVD) or inlet (CVA) fan flanges. The guards are designed to minimise water ingress and the entry of foreign objects when used for exterior mounted installations.



Model	Discharge			Inlet		
	Type	A	B	Type	A	B
CVTT-7/7	CVD-7	225	235	CVA-7	382	328
CVTT-9/9	CVD-9	263	303	CVA-9	403	403
CVTT-10/10	CVD-10	292	336	CVA-10	453	453
CVTT-12/12	CVD-12	344	399	CVA-12	503	503
CVTT-15/15	CVD-15	406	476	CVA-15	603	603
CVTT-18/18	CVD-18	482	559	CVA-18	703	703
CVTT-20/20	CVD-20	633	633	CVA-20	803	803
CVTT-22/22	CVD-22	698	703	CVA-22	903	903
CVTT-25/25	CVD-25	799	803	CVA-25	1003	1003
CVTT-30/28	CVD-30	873	948	CVA-30	1203	1203

Dimensions mm.