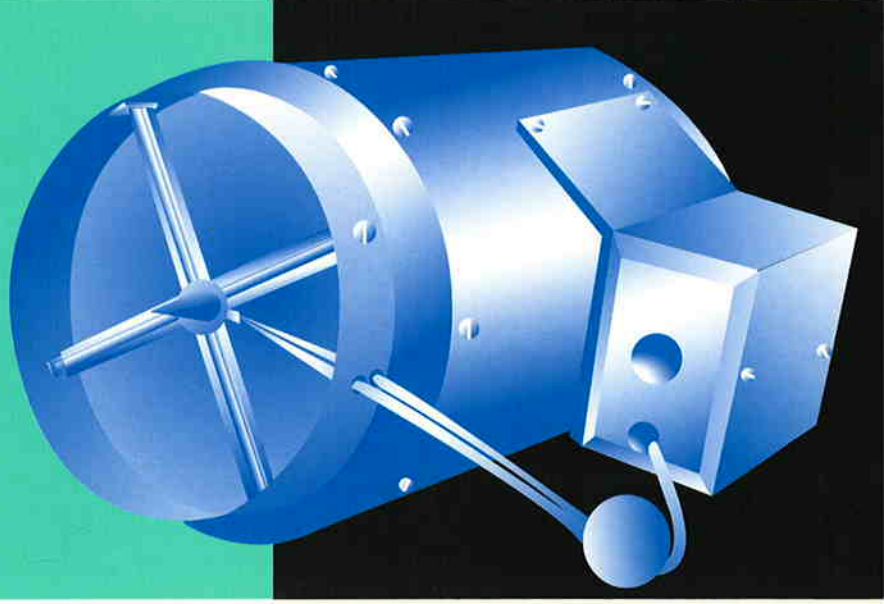
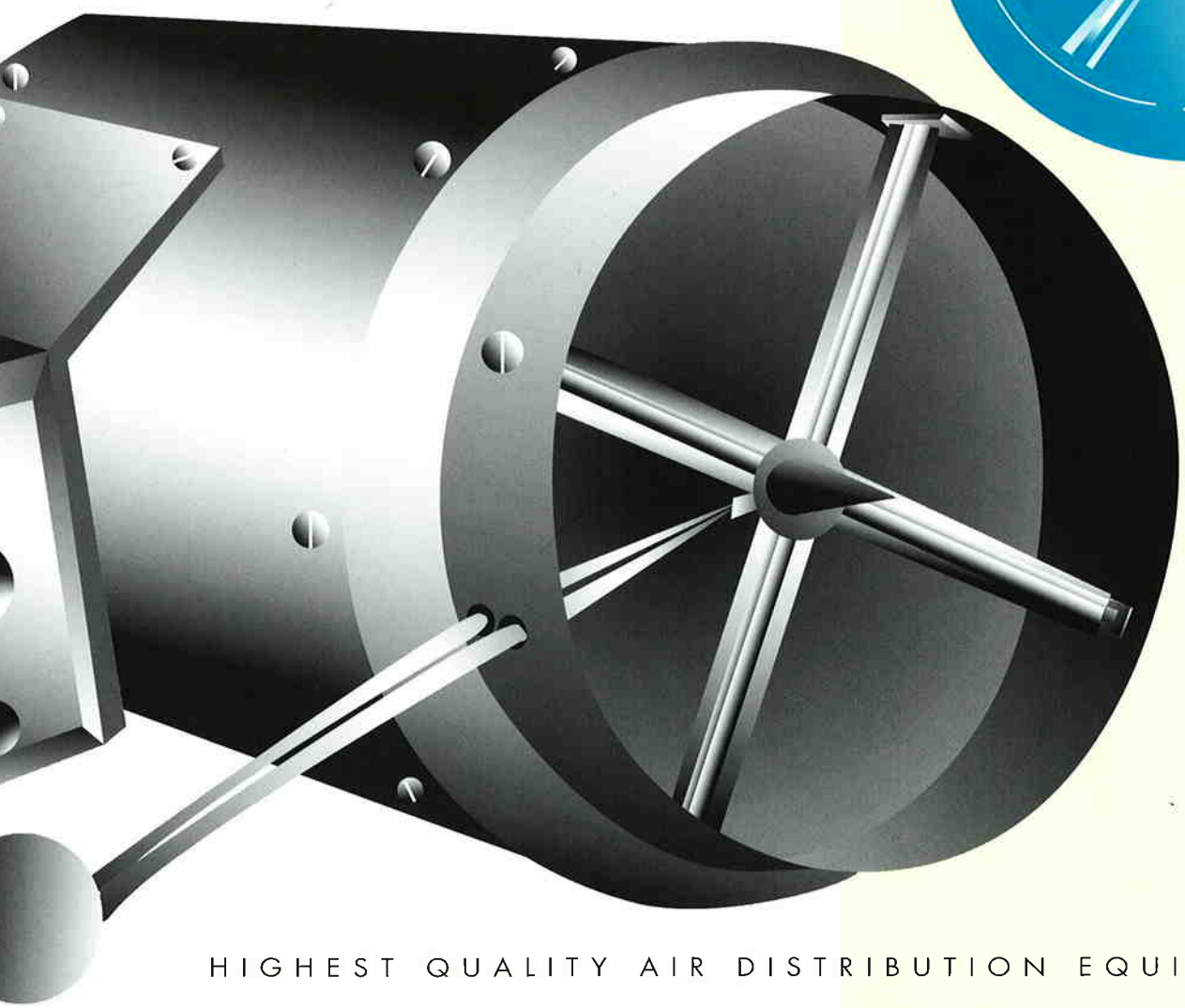
Engineered for
Versatile Application
and Energy Conservation



CONNOLS-AIR
TERMINAL UNITS





HIGHEST QUALITY AIR DISTRIBUTION EQUIPMENT

VAV & CAV AIR TERMINAL UNITS

V750 CONNOLS-AIR TERMINAL UNITS

MODEL V750-1 : Pressure Independent VAV Air Terminal Unit

MODEL V750-D : Pressure Dependent VAV Air Terminal Unit

MODEL V750-C : Constant Air Volume Air Terminal Unit

Designed for efficient control of room temperature and with energy conservation in mind, the *Connols-Air* terminal units are the most reliable devices available for precise control of air volume. V750 air terminal units are recommended for use in the retrofit of existing high energy air systems or in new building constructions. In many retrofit type systems, the V750 air terminal units are applicable directly to a system where the older high pressured type equipment has been deactivated but not removed.

CONSTRUCTION

The V750 terminal units are constructed of double casing of 0.7 or 1.0mm hot-dip pre-galvanised steel in mill finish, with 25mm thick fibreglass insulation in between the inner and outer casings. Insulation comply with the requirement of NFPA90A. The V750 blade is constructed of double-skin galvanised steel plates with felt all round to provide a good seal. Steel control housing comes with each air terminal unit to protect the control components against dust & damage (except for certain DDC controller models which are factory-encased in PVC housing). The air terminal units are available in standard sizes of 5, 6, 7, 8, 10, 12,14, 16, 18 and covering an air flow range of up to 2500 *l*/s.

APPLICATION

The V750 terminal units are available for both system pressure-independent and system pressure-dependent variable volume (VAV) operation & constant air volume (CAV) applications, depending on the control sequence selected. Supply air capacities can range from 50 *l*/s to 2500 *l*/s, depending on the air terminal sizes.

CONTROLS

The V750 air terminal units can be supplied with pneumatic or electronic analog controls for stand-alone operations. Microprocessor direct digital control (DDC) air terminal units are also available for stand-alone operations or for integration with building automation system for central monitoring and controls.

FEATURES OF CONNOLS-AIR TERMINAL UNIT

- Double-skin casing construction ensures low radiated noise and absence of fibreglass erosion.
- Double-skin blade with felt seal all round ensures rigidity of the blade and low air leakage.
- Blade is designed to close at 60 degrees so as to provide more linear flow characteristic and, hence, more precise modulation of air flow.
- Accurate control of air volume is possible with accurate multi-point pressure differential flow sensor.
- A wide range of temperature controllers is available for all types of control functions.
- A wide choice of control options is available such as electronic analog, pneumatic and direct digital microprocessor controls for stand-alone operations or integration with building automation systems.
- Low minimum pressure loss for energy conservation.
- Each unit has a P or PID cooling control algorithm, depending on the type of controller installed.

ACCESSORIES

The V750 air terminal units can be coupled with accessories such as hot water coils and electric heaters for reheat and winter heating purposes. High performance silencers and multiple outlet silencers are also available to meet low noise requirements.

FIGURE 1: V750 TERMINAL BOX CONSTRUCTION

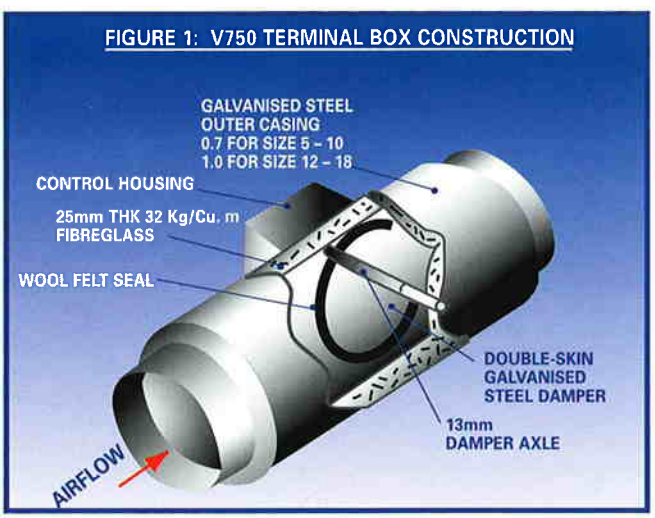


FIGURE 2: DIMENSIONS OF V750 AIR TERMINAL BOX

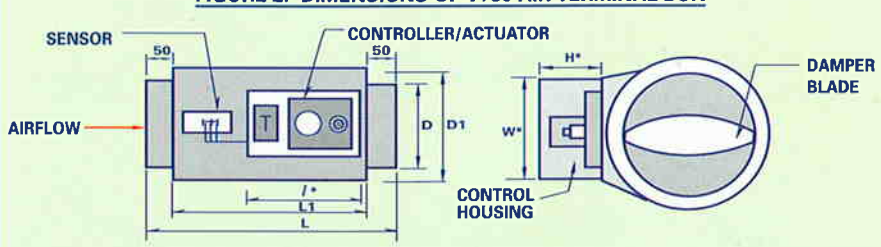


TABLE 1

SIZE	L	D	L1	DI
5	470	124	369	175
6	470	150	369	201
7	470	175	369	226
8	470	201	369	251
10	521	251	419	302
12	572	302	470	353
14	635	353	533	403
16	686	403	585	454
18	737	454	635	505

PERFORMANCE DATA

GENERATED NOISE OF V750 TERMINAL UNIT ONLY

UNIT SIZE	AIR FLOW		MIN. PRESS.	SOUND POWER LEVEL Lw, dB re 10^{-12} WATTS													
				@125 Pa (0.5"W.G.) OCTAVE BAND CENTRE FREQUENCIES, Hz							@250 Pa (1.0"W.G.) OCTAVE BAND CENTRE FREQUENCIES, Hz						
	l/s	CFM	LOSS	125	250	500	1k	2k	4k	NC	125	250	500	1k	2k	4k	NC
5	43	90	18	42	41	41	38	35	29	26	43	43	44	44	41	34	34
	59	125	28	45	42	41	40	37	30	29	45	44	45	45	42	35	34
	83	175	47	46	43	43	42	39	31	31	48	47	48	47	43	37	36
	94	200	61	49	45	43	44	41	34	33	51	49	48	48	46	38	37
	106	225	76	50	45	45	45	42	35	34	52	50	49	48	47	40	38
	118	250	90	52	47	45	46	43	36	35	52	51	51	49	48	41	39
	142	300	125	53	52	50	47	44	37	36	54	54	52	51	49	42	40
6	94	200	4	43	40	42	43	40	33	32	46	44	45	46	45	38	35
	118	250	6	48	43	45	43	40	35	32	52	47	48	47	46	40	37
	142	300	10	50	45	46	45	42	36	34	53	49	50	49	48	41	39
	165	350	14	51	47	47	45	43	38	35	54	52	51	50	49	43	40
	189	400	19	52	47	47	46	44	40	36	56	53	52	52	50	45	41
	213	450	24	52	49	47	46	44	42	36	57	54	53	53	51	47	42
	236	500	31	53	50	49	47	45	45	37	60	56	55	54	52	50	43
	260	550	38	53	52	49	48	45	47	37	60	55	56	54	52	52	44
7	142	300	7	49	45	44	41	38	30	30	53	48	48	45	46	41	37
	189	400	14	52	47	47	43	40	33	32	56	52	52	49	47	43	38
	236	500	31	53	50	49	45	42	37	34	60	55	55	52	48	45	41
	283	600	34	55	54	54	46	43	39	39	64	59	58	53	49	47	44
	331	700	49	57	55	56	48	44	40	41	66	61	62	55	50	48	48
	378	800	66	58	58	58	50	45	42	44	67	63	64	58	52	49	50
	425	900	88	59	60	60	53	47	43	46	68	64	66	59	53	50	52
8	142	300	5	46	44	42	36	33	24	26	51	47	46	41	41	32	32
	189	400	9	50	47	46	39	35	25	32	54	51	51	45	42	34	36
	236	500	15	53	50	49	42	38	29	34	58	55	55	48	44	37	40
	283	600	22	55	52	52	44	40	30	37	63	57	58	51	46	38	43
	331	700	32	56	53	54	46	41	32	39	64	59	61	53	47	40	47
	378	800	42	57	56	56	48	43	36	41	65	61	63	56	50	42	49
	472	1000	70	58	60	60	53	47	40	46	66	65	66	59	52	45	52
10	189	400	4	49	44	43	38	34	24	27	53	47	48	43	41	32	33
	283	600	9	54	49	48	40	39	29	33	58	53	53	47	44	36	38
	378	800	16	55	53	52	45	40	35	37	60	57	57	51	46	41	42
	472	1000	25	57	57	55	49	43	37	40	62	61	61	55	50	42	47
	567	1200	36	59	60	60	53	48	40	45	64	62	63	58	52	44	49
	661	1400	49	61	63	63	58	51	43	49	66	66	67	62	56	49	53
	779	1600	66	64	66	67	61	54	46	53	69	69	70	64	58	52	57
12	378	800	7	53	54	42	47	39	31	37	57	57	56	51	46	39	41
	567	1200	17	55	55	55	49	41	33	40	60	58	59	55	49	41	44
	756	1600	30	60	61	62	55	47	40	48	64	64	64	60	53	46	49
	944	2000	48	62	64	66	58	52	43	52	66	67	68	62	56	50	51
	1133	2400	70	64	66	68	60	55	46	55	69	69	71	64	56	53	57
14	567	1200	7	53	53	53	46	38	30	38	55	54	55	55	49	42	44
	756	1600	13	55	55	57	48	40	33	40	59	59	60	56	51	44	46
	944	2000	22	58	59	61	51	44	38	47	62	61	62	67	52	45	48
	1133	2400	34	59	61	64	54	48	41	50	65	64	66	60	53	48	53
	1322	2800	49	60	62	64	55	49	43	53	66	66	68	63	55	49	54
	1511	3200	67	61	64	66	59	52	46	53	67	68	70	65	58	52	57
	1700	3600	90	62	65	69	62	55	48	56	68	69	72	66	60	54	58
16	756	1600	8	52	53	53	48	39	33	38	56	56	56	53	49	43	42
	944	2000	13	55	57	56	50	44	36	41	59	59	58	55	51	45	44
	1133	2400	20	56	59	59	52	46	40	45	61	61	61	58	52	47	47
	1322	2800	29	58	61	60	53	47	41	46	63	63	64	60	53	48	50
	1511	3200	37	59	63	62	56	50	44	48	65	66	66	62	56	50	52
	1700	3600	48	61	64	64	59	52	46	50	66	67	67	63	58	52	54
	1889	4000	60	63	66	66	62	54	47	53	68	69	68	65	59	54	56
	2078	4400	76	66	68	67	65	56	49	54	70	71	70	67	61	56	57
	2267	4800	84	69	70	69	68	58	50	57	71	74	72	68	64	57	58
18	944	2000	5	52	55	51	48	43	37	37	55	57	54	53	50	44	42
	1133	2400	7	53	56	53	50	44	38	39	56	58	56	55	51	45	44
	1322	2800	9	56	59	55	50	45	39	40	60	61	59	56	51	46	45
	1511	3200	13	57	61	57	52	47	42	43	62	63	61	58	54	48	47
	1700	3600	17	59	62	59	55	48	43	45	63	64	62	60	55	49	49
	1889	4000	21	59	63	60	56	49	44	46	64	66	64	61	56	51	50
	2078	4400	25	60	63	60	56	50	45	46	65	66	64	62	56	51	51
	2267	4800	31	60	65	61	57	51	47	47	65	68	65	63	57	52	52
	2456	5200	37	61	67	62	60	52	48	49	66	70	66	64	58	53	53

Note:

- *Test data obtained generally in accordance to ISO 5220, ISO 5135, ISO 3741 and related standards.*
- *NC values are based on 10 dB room absorption in all octave bands.*
- *All pressure indicated are differential pressure measured across the VAV terminal box.*
- *"–" represents noise level below 20 dB.*

PERFORMANCE DATA

RADIATED NOISE OF V750 TERMINAL UNIT ONLY

UNIT SIZE	AIR FLOW		MIN. PRESS. LOSS	SOUND POWER LEVEL Lw, dB re 10^{-12} WATTS														
				@125 PA (0.5"W.G.) OCTAVE BAND CENTRE FREQUENCIES, Hz							@250 PA (1.0"W.G.) OCTAVE BAND CENTRE FREQUENCIES, Hz						
	I/S	CFM		125	250	500	1K	2K	4K	NC	125	250	500	1K	2K	4K	NC
5	43	90	18	28	25	22	21	20	–	–	29	27	25	27	26	23	–
	59	125	28	31	26	22	23	22	–	–	31	28	26	28	27	24	–
	83	175	47	32	27	24	25	24	20	–	34	31	29	30	28	26	–
	94	200	61	35	29	24	27	26	23	–	37	33	29	31	31	27	21
	106	225	76	36	29	26	28	27	24	–	38	34	30	31	32	29	22
	118	250	90	38	31	26	29	28	25	–	38	35	31	32	33	30	23
	142	300	125	39	36	31	30	29	26	–	40	38	33	34	34	31	25
6	94	200	4	29	24	23	26	25	22	–	32	28	26	29	30	27	20
	118	250	6	34	27	26	26	25	24	–	38	31	29	30	31	29	21
	142	300	10	36	29	27	28	27	25	–	39	33	31	32	33	30	23
	165	350	14	37	31	28	28	28	27	20	40	36	32	33	34	32	25
	189	400	19	38	31	28	29	29	29	22	42	37	33	35	35	34	27
	213	450	24	38	33	28	29	29	31	24	43	40	34	36	36	36	28
	236	500	31	39	34	30	30	30	34	27	46	41	36	37	37	39	31
	260	550	38	39	36	30	31	30	36	28	46	39	37	37	37	41	33
7	142	300	7	38	34	31	26	27	–	–	42	37	35	30	35	27	26
	189	400	14	41	36	34	28	29	–	–	47	41	39	34	36	29	26
	236	500	31	42	39	36	30	31	23	20	49	45	42	37	37	31	27
	283	600	34	44	43	41	31	32	25	25	53	48	45	38	38	33	30
	331	700	49	46	44	43	33	33	26	27	55	50	49	40	39	34	34
	378	800	66	47	47	45	35	34	28	30	56	52	51	43	41	35	36
	425	900	88	48	49	47	38	36	29	33	57	53	53	44	42	36	37
8	142	300	5	35	33	29	21	22	–	–	40	36	33	26	30	–	20
	189	400	9	39	36	33	24	24	–	–	46	40	38	30	31	20	23
	236	500	15	42	39	36	27	27	–	20	49	44	42	33	33	23	26
	283	600	22	44	41	39	29	29	–	23	52	46	45	36	35	24	30
	331	700	32	45	42	41	31	30	–	25	53	48	48	38	36	26	33
	378	800	42	46	45	43	33	32	22	27	54	50	50	41	39	28	35
	472	1000	70	47	49	47	38	36	26	32	55	54	53	44	41	31	37
10	189	400	4	38	32	31	25	21	–	–	42	35	36	30	28	–	20
	283	600	9	43	37	36	27	26	–	20	47	41	41	34	31	21	25
	378	800	16	44	41	40	32	27	20	24	49	45	45	38	33	26	30
	472	1000	25	46	45	43	36	30	22	27	51	49	49	42	37	27	34
	567	1200	36	48	48	48	40	35	25	33	53	50	51	45	39	29	36
	661	1400	49	50	51	51	45	38	28	36	55	54	55	49	43	34	40
	779	1600	66	53	54	55	48	41	31	40	58	57	58	51	45	37	43
12	378	800	7	42	42	40	34	26	–	24	46	45	44	38	33	24	29
	567	1200	17	44	43	43	36	28	–	28	48	46	47	42	36	26	31
	756	1600	30	49	49	50	42	34	25	35	53	52	52	47	40	31	36
	944	2000	48	51	52	54	44	39	28	39	55	55	56	49	43	35	41
	1133	2400	70	53	54	56	47	42	31	41	58	57	59	51	45	38	44
14	567	1200	7	42	41	41	33	25	–	25	44	42	43	42	36	27	31
	756	1600	13	44	43	45	35	27	–	30	48	47	48	43	38	29	33
	944	2000	22	46	46	48	38	31	22	33	52	49	52	45	39	31	36
	1133	2400	34	48	49	52	41	35	26	36	54	52	54	47	40	33	39
	1322	2800	49	49	50	52	42	36	28	36	55	53	56	50	42	34	41
	1511	3200	67	50	52	54	46	39	31	38	56	56	58	52	45	37	43
	1700	3600	90	51	53	57	49	42	33	42	57	57	60	53	47	39	46
16	756	1600	8	43	41	43	37	27	21	27	47	44	46	42	37	31	31
	944	2000	13	46	45	46	39	32	26	31	50	47	48	44	39	33	33
	1133	2400	20	47	47	49	41	34	28	34	52	49	51	47	40	35	36
	1322	2800	29	49	49	50	42	35	29	35	54	51	54	49	41	35	38
	1511	3200	37	50	51	52	45	38	32	37	56	54	56	51	44	38	40
	1700	3600	48	52	52	54	48	40	34	39	57	55	57	52	46	40	41
	1889	4000	60	54	54	56	51	42	35	41	59	57	58	54	47	42	43
	2078	4400	76	57	56	57	54	44	37	43	61	59	60	56	49	44	45
	2267	4800	84	60	58	59	57	46	38	46	62	62	62	57	52	45	46
18	944	2000	5	43	43	41	37	31	25	25	46	45	44	42	38	32	31
	1133	2400	7	44	44	43	39	32	26	27	47	46	46	44	39	33	33
	1322	2800	9	47	47	45	39	33	27	30	51	49	49	45	39	34	34
	1511	3200	13	48	49	47	41	35	30	32	53	51	51	47	42	36	36
	1700	3600	17	50	50	49	44	36	31	34	54	52	52	49	43	37	38
	1889	4000	21	50	51	50	45	37	32	35	55	54	54	50	44	39	39
	2078	4400	25	51	51	50	45	38	33	35	56	54	54	51	44	39	39
	2267	4800	31	51	53	51	46	39	35	36	56	56	55	52	45	40	41
	2456	5200	37	52	55	52	49	40	36	38	57	58	56	53	46	41	42

Note:

- *Test data obtained generally in accordance to ISO 5220, ISO 5135, ISO 3741 and related standards.*
- *NC values are based on 10 dB room absorption in all octave bands.*
- *All pressure indicated are differential pressure measured across the VAV terminal box.*
- *"–" represents noise level below 20 dB.*