



HI-LINE LV.

The **HI-LINE LV** is a low-voltage unit designed specifically for a variety of applications where safety matters most, for example, installation in bathrooms. The innovative engineering of the 12V unit ensures that effective and efficient outputs are not compromised.



HI-LINE LV single switch function.

System Design for Fan Convectors

Fan convectors are intended to be connected to central heating systems in the same way as radiators, and offer advantages and benefits not available from traditional emitters. To ensure optimum fan convector performance, great care must be taken to ensure that the choice of unit and the heating system design are considered. The following factors must be taken into consideration:

- Fan convectors should only be used on closed circulation, two pipe, pump assisted central heating systems.
- Fan convectors should be correctly sized to match the heat loss requirement of the room with the unit operating at its lowest fan speed.
- The heating system must be capable of providing sufficient hot water through the heat exchanger. This means that:
 - The minimum pipe size should be 15mm.
 - Fan convectors are not suitable for use on microbore pipe-work.
 - Fan convectors are not suitable for one-pipe systems.
 - Where the unit is fitted onto a system with other emitters, a separate circuit for the fan convector should be considered to ensure an adequate water flow through it.
- The heating system water temperature must be greater than 43°C in heating mode for the unit to operate (lower temperatures possible for heat pump applications on wall mounted units).
- Optimum performance of the fan convector will require effective balancing of the whole system.
- Fan convectors should not be used to replace radiators in existing systems unless pipe-work sizing, system design and system balancing can guarantee an adequate flow of water through the fan convector.
- The maximum working pressure through the heat exchanger is 10 bar (150 lb/in²). The maximum allowable water temperature through the heat exchanger is 90°C.
- Wall mounted units should be mounted on a flat wall, and stud or partition walls should be avoided to minimise the possibility of noise transmission.

HI-LINE RC Performance Data (continued)
Approximate Hydraulic Resistance

Litres/h	mm wg				kPa			
	7-4	10-6	15-10	20-14	7-4	10-6	15-10	20-14
455	1084	1240	1500	1774	9.4	12.12	14.7	17.42
340	798	657	905	1140	7.7	6.42	8.9	11.2
227	350	327	450	565	3.5	3.25	4.37	5.5
113	134	105	157	221	1.4	1.1	1.57	2.1

Weight, Water Content and Motor Power

Model	Motor Power (W)	Water Content (l)	Unpacked Weight (kg)
20-14	80	0.77	14.7
15-10	62	0.56	11.3
10-6	35	0.32	8.9
7-4	35	0.30	7.4

Noise Levels

Model	Sound Pressures at 2.5m (dBA)		
	Normal	Medium	Boost
20-14	33.3	38.7	45.4
15-10	28.8	35.4	45.6
10-6	23.5	30.8	37.2
7-4	23.4	32.5	43.3

Noise levels tested in accordance with EN 23741.

Air Flow

Model	Air Flow (m ³ /h)			Air Flow (ft ³ /h)		
	Normal	Medium	Boost	Normal	Medium	Boost
20-14	285	371	431	10061	13096	15214
15-10	207	276	333	7307	9743	11755
10-6	143	171	220	5048	6036	7766
7-4	81	105	133	2859	3707	4695

HI-LINE LV Performance Data

This model should only be selected if the normal fan speed output is capable of maintaining the calculated heat losses of the room at the chosen operating conditions. This will enable the boost fan speed and the higher temperature differences to be used to greater advantage for rapid warming of the room from cold in excessive conditions.

When establishing the temperature difference, i.e. mean water to room temperature, allowance should be made for temperature drop in the system. It is the temperature at the convector which dictates the output.

Heating Performance Data

Model	Fan Speed	Temperature Difference (°C)									
		Heat Output (watts)					Heat Output (Btu/h)				
		20°	30°	40°	50°	60°	20°	30°	40°	50°	60°
7-4	Normal	352	541	734	930	1128	1201	1846	2504	3173	3849
	Boost	645	991	1344	1702	2065	2201	3381	4586	5807	7046

Heat outputs tested in accordance with BS 4856 Part 1.

Flow Rate: 340 ltr/h (75 gal/h).

Flow Rate Correction Factors:

455 ltr/h (100 gal/h) multiply by 1.06.

227 ltr/h (50 gal/h) multiply by 0.96.

113 ltr/h (25 gal/h) multiply by 0.85.

Approximate Hydraulic Resistance

Litres/h	mm wg	kPa
455	1084	9.4
341	798	7.7
227	350	3.5
113	134	1.4

Noise Levels

Fan Speed	Sound Pressures at 2.5m (dBA)
Normal	16.6
Boost	32.5

Noise levels tested in accordance with EN 23741.

HI-LINE LV Performance Data (continued)

Weight, Water Content and Motor Power

Motor Power (W)	Water Content (l)	Unpacked Weight (kg)
30	0.3	7.4

Air Flow

Fan Speed	Air Flow (m ³ /h)	Air Flow (ft ³ /h)
Normal	81	2859
Boost	133	4695

HI-LINE Super RC Performance Data

The unit must be sized to match the calculated heat loss requirement of the room with the unit operating at normal fan speed. The higher fan speeds will be used automatically when the room temperature is significantly lower than the preset temperature.

When establishing the temperature difference, i.e. mean water to room temperature, allowance should be made for temperature drop in the system. It is the temperature at the convector which dictates the output.

Heating Performance Data

Model	Fan Speed	Temperature Difference (°C)									
		Heat Output (watts)					Heat Output (Btu/h)				
		20°	30°	40°	50°	60°	20°	30°	40°	50°	60°
29-20	Normal	1858	2870	3906	4962	6033	6339	9791	13328	16930	20584
	Medium	2234	3462	4723	6011	7319	7622	11811	16116	20508	24972
	Boost	2599	4040	5526	7045	8591	8867	13785	18854	24037	29313
25-18	Normal	1709	2563	3417	4270	5123	5833	8746	11658	14569	17481
	Medium	1962	3030	4124	5238	6369	6695	10339	14072	17873	21730
	Boost	2172	3454	4800	6200	7600	7411	11785	16378	21154	25931

Heat outputs tested in accordance with BS 4856 Part 1.

Flow Rate Correction Factors:

455 ltr/h (100 gal/h) multiply output by 1.03.
 227 ltr/h (50 gal/h) multiply output by 0.98.
 113 ltr/h (25 gal/h) multiply output by 0.85.

Approximate Hydraulic Resistance

ltr/h	mm wg		kPa	
	25-18	29-20	25-18	29-20
455	2095	2551	20.5	24.6
340	1282	1530	12.6	15.0
227	620	850	6.1	8.3
113	234	245	2.3	2.4

Air Flow

Model	Air Flow (m ³ /h)			Air Flow (ft ³ /h)		
	Normal	Medium	Boost	Normal	Medium	Boost
29-20	390	470	540	13772	16597	19069
25-18	350	430	500	12360	15185	17657

Weight, Water Content and Motor Power

Model	Motor Power (W)	Water Content (l)	Unpacked Weight (kg)
29-20	80	0.85	21.0
25-18	80	0.63	18.0

HI-LINE RC E Performance Data

Heating Performance Data

Model	Heat Output (kW)	
	Low	High
RC E	1	2

Weight

Model	Unpacked Weight (kg)
RC E	3.3

HI-LINE Controls

HI-LINE RC & HI-LINE Super RC

Units are supplied with an electronic infra-red remote control system with the following features:

- Automatic room temperature control.
- Fan only option for ambient air circulation.
- Three fan speeds.
- Unit mounted controls and display.
- Unit control panel electronic tamper proof lock.
- Displayed temperature calibration system.

HI-LINE LV

Units are fitted with a switch offering high and low fan speed and off selection. A low limit thermostat is fitted to the unit to ensure that the fan stops after the heating system is switched off and the water flow stops.

HI-LINE RC E

Units are supplied with an electronic infra-red remote control system with the following features:

- Automatic room temperature control.
- Fan only option for ambient air circulation.
- Timer for user setting of heating periods.
- Unit mounted controls and temperature display .
- Single fan speed.
- Optional oscillating outlet vanes for improved air circulation.

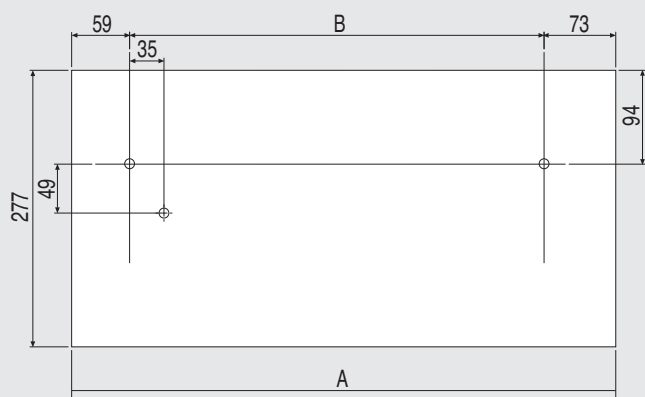
HI-LINE Water Connections

Water connections (15mm compression) are on the right-hand side and the system pipework may be brought in from above or the rear. Supplied with isolating valves.

HI-LINE Electrical Data

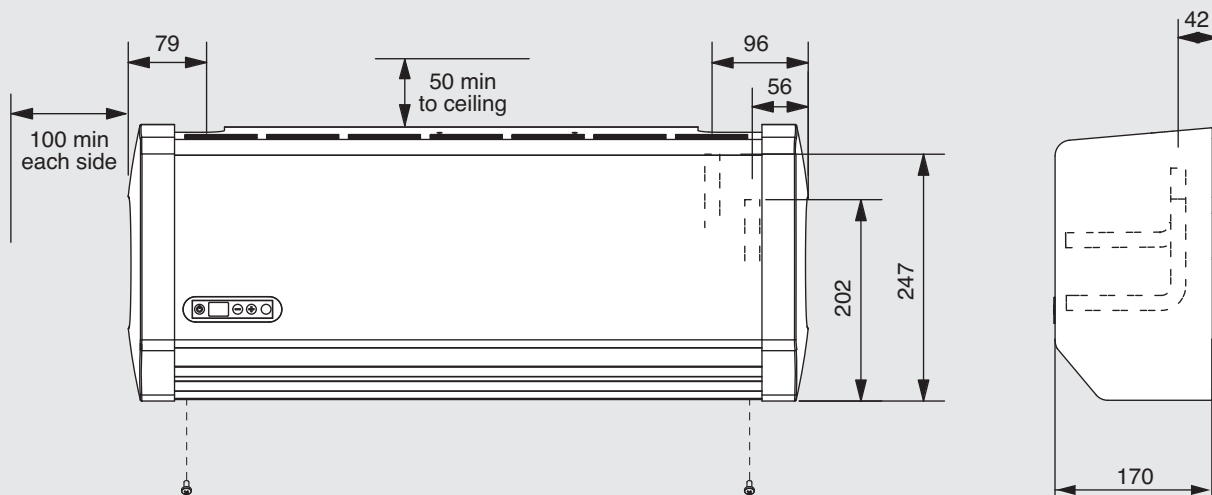
All HI-LINE models require an electrical supply of 220-240V - 50Hz fused at 3A (except HI-LINE RC E model which requires to be fused at 10A).

HI-LINE RC Dimensions and Fixings



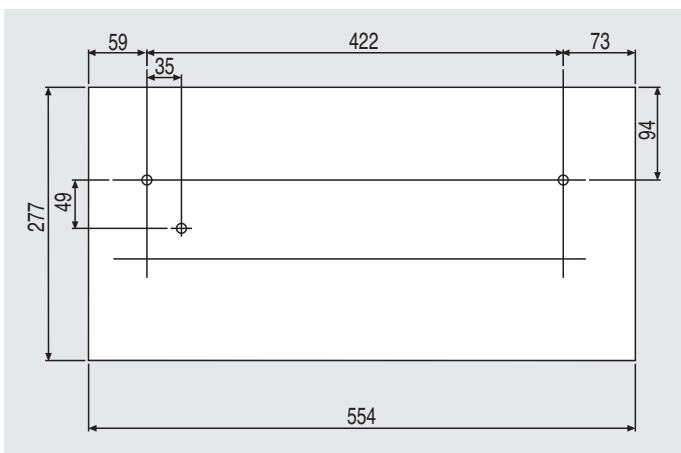
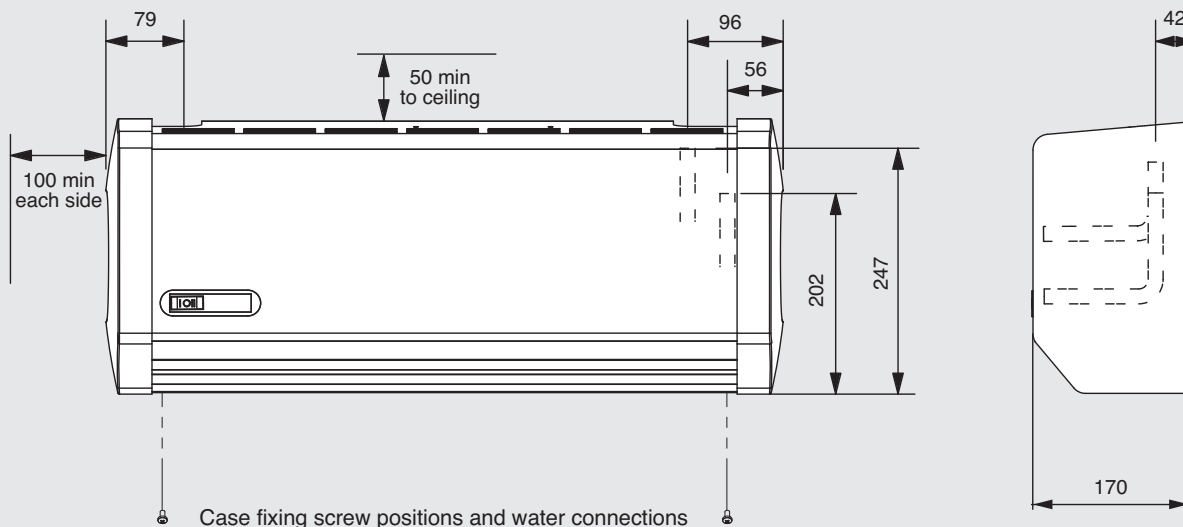
Model	Dimensions (mm)	
	A	B
20-14	1171	1039
15-10	886	754
10-6	682	550
7-4	554	422

- Maximum installation height is 2.13m to the underside of the unit.
- Minimum installation height is 1.8m to the underside of the unit.
- Maximum ceiling height is 3m.
- Minimum clearance each side is 100mm.
- Minimum top clearance is 50mm.



Case fixing screw positions and water connections

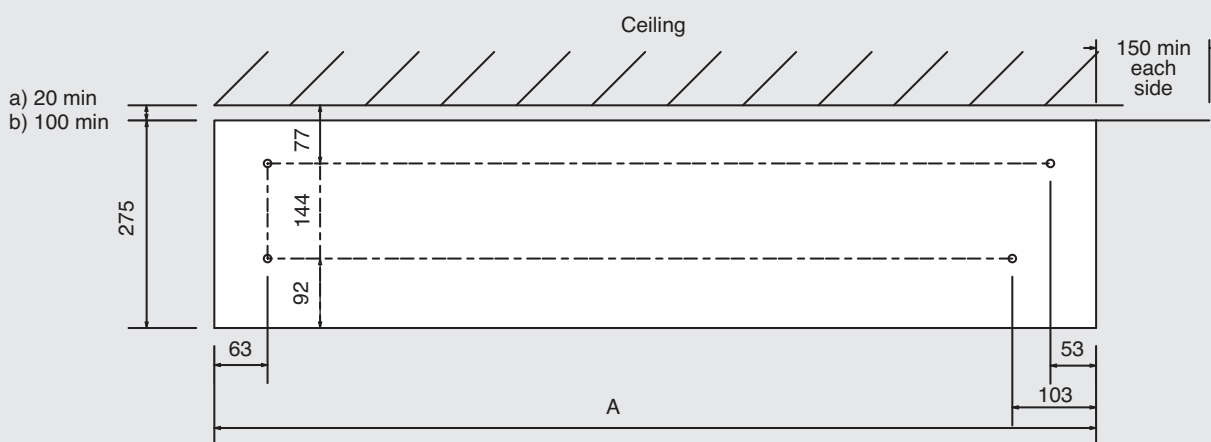
HI-LINE LV Dimensions and Fixings



Dimensions (mm)		
Height	Width	Depth
277	554	170

- Maximum installation height is 2.13m to the underside of the unit.
- Minimum installation height is 1.8m to the underside of the unit.
- Maximum ceiling height is 3m.
- Minimum clearance each side is 100mm.
- Minimum top clearance is 50mm.
- Please note the transformer can be mounted internally or external to the unit.

HI-LINE Super RC Dimensions and Fixings



Model	Dimensions (mm)
	A
29-20	1360
25-18	1150

a = rear entry pipework
b = top entry pipework