



**Johnson  
& Starley**

**Dravo**  
Division



# LCSA Room Sealed Unit Heater (22kW – 97kW)

LCSA compact gas fired suspended warm air heaters utilise a tubular heat exchanger to provide a simple low cost heating solution suitable for all standard industrial and commercial heating applications.

LCSA fan-assisted balanced flue units incorporate an integral flue gas exhaust fan to induce combustion air mechanically from outside the building. This same fan then exhausts the products of combustion back to the outdoor atmosphere. A single balanced flue terminal provides a combined air inlet and flue outlet.

Units are CE certified as either balanced flue appliances or fan assisted flue units, where combustion air is drawn from the heated space. Each unit is fitted as standard with a high capacity axial fan and fully adjustable curved blade horizontal discharge louvers.

The LCSA Series gas fired heaters are available in seven sizes, with heat outputs ranging from 22kW to 97kW, for use on natural gas or LPG (to special order).



## Features & Benefits

- High thermal efficiency – above 91% nett, resulting in lower running costs
- Multi-try ignition system for enhanced reliability
- Dual limit stats for additional safety.

## Specification

### Heat Exchanger

Tubular aluminised steel heat exchanger complete with multiple in-shot burners.

### Air Distribution

A high capacity axial flow fan is fitted to all units for improved air distribution. An optional Economy Thermostat may be fitted to heaters installed at high level to recycle warm air down to working level when the burners are switched off.

The fan operation is controlled by an integral controller which delays fan start-up until the heat exchanger has reached operating temperature and continues to run after the burner has switched off until all the useful heat has been dissipated.

### Enhanced Safety & Reliability

To ensure safe automatic operation, each unit is fitted as standard with comprehensive safety controls. Ignition is controlled and monitored from a multi-try electronic sequence controller and gas safety shut-off valve. A differential pressure switch shuts off the burners if either the flue or combustion air supply is obstructed or the flue exhaust fan fails. A limit thermostat protects the unit from overheating and a second higher limit thermostat is fitted to provide dual safety control.

## Installation

Units may be suspended or alternatively mounted on a suitable non-combustible support. Four integral suspension points complete with an M10 female thread are provided to each heater.

The balanced flue terminal provides both the combustion air inlet and flue outlet from a single building penetration. The terminals are ordered separately from the heaters to suit either a wall or roof outlet.

Additional flue and combustion air pipes may be added, up to a maximum of nine metres of flue pipe, plus nine metres of combustion air pipe. (This reduces by 1.5 metres for every 90° bend fitted.)

To comply with CE approvals, balanced flue appliances must be used with the manufacturer's balanced flue system.

The units are also certified for fan assisted flue installations, where the combustion air is to be drawn from within the heated space; an alternative wall or roof terminal is required for this application.

A single phase electrical supply is required to each unit. This supply should not be switched off except for maintenance.

Units must not be installed in atmospheres containing highly flammable or explosive vapours, combustible dust, halogenated hydrocarbons or chlorinated vapours.

They are also unsuitable for areas where contaminants may affect electrical motors or connections.

## Ease of Maintenance

All controls are housed behind a hinged service door situated on the right hand side when viewed from the front.

## Certification

Units are designed and tested in accordance with current European CE Standards.

## Applications

- Factories • Greenhouses • Warehouses • Workshops

## Technical Data

Model	LCSA20	LCSA30	LCSA35	LCSA45	LCSA60	LCSA75	LCSA100
Nominal heat output (kW)	22	26	36	45	61	73	97
Airflow (m <sup>3</sup> /h)	2300	2900	4400	4600	6700	7200	8700
Temperature rise (°C)	28	26	24	28	27	30	32
Throw <sup>1</sup> (m)	13	17	24	25	30	32	29
Gas Consumption							
Nat gas G20 (m <sup>3</sup> /h)	2.5	3.0	4.2	5.2	7.0	8.4	11.2
Propane G31 (kg/h)	1.9	2.2	3.1	3.8	5.2	6.2	8.2
Gas connection <sup>2</sup> (Rc)	½	½	¾	¾	¾	¾	¾
Air inlet / flue outlet dia. (mm)	100/100	100/100	130/130	130/130	130/130	130/130	130/130
Total electrical rating (kW)	0.27	0.49	0.49	0.49	0.84	0.84	1.16
Free field (dB(A))	41	46	46	47	52	52	55
Typical installation (dB(A))	48	53	53	54	59	59	62
Recommended mounting height (underside of heater) <sup>3</sup>	3	3	3-4	3-4	3-4	3-4	3.5-4
Approximate weight (kg)	62	66	92	97	112	124	175

<sup>1</sup> Throw depends on height of building, mounting height of heater, room temperature and louvre settings.

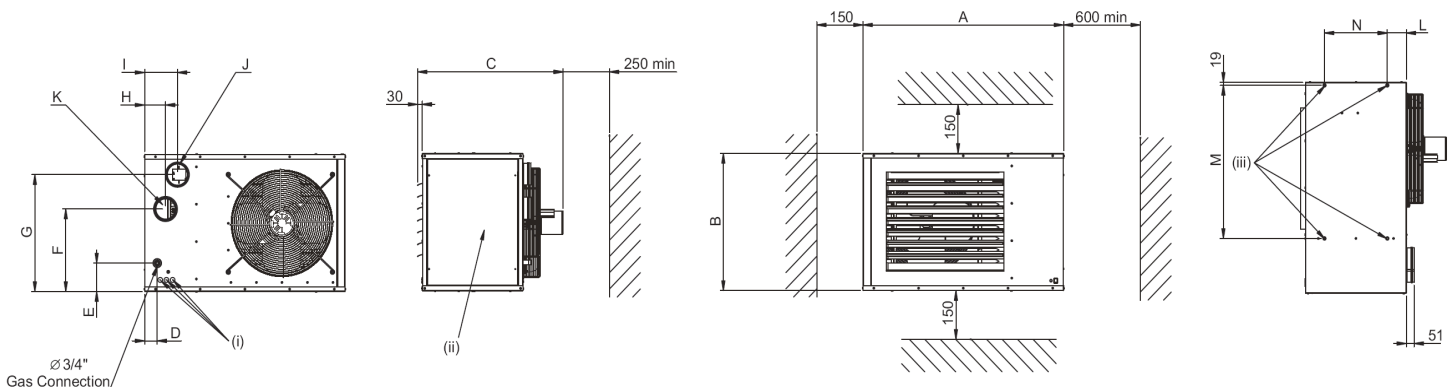
<sup>2</sup> Not supply line size.

<sup>3</sup> Recommended height to underside of heater for standard horizontal discharge units. Downturn nozzles are recommended for units installed at higher mounting heights. For buildings over 4 metres high, air re-circulation fans are recommended in conjunction with the heaters.

\* Natural gas G20 inlet pressure min. 17.5 mbar, max. 50 mbar. Propane G31 inlet pressure min. 37 mbar, max. 50 mbar.

## Dimensions

Model	LCSA20	LCSA30	LCSA35	LCSA45	LCSA60	LCSA75	LCSA100
A Cabinet Width	965	965	965	965	1298	1298	1298
B Height	567	567	845	845	845	845	954
C Overall length	907	914	927	927	942	942	1153
D Side to gas inlet	87	87	82	82	82	82	82
E Base to gas inlet	106	106	175	175	175	175	180
F Base to air inlet	345	345	508	508	508	508	608
G Base to flue outlet	444	444	720	720	720	720	833
H Side to air inlet	122	122	134	134	135	135	212
I Side to flue outlet	221	221	211	211	212	212	212
J Flue outlet	100	100	130	130	130	130	130
K Air inlet	100	100	130	130	130	130	130
L Back to suspension point	123	123	123	123	123	123	128
M Suspension centers	611	611	611	611	942	942	942
N Suspension centers	406	406	406	406	406	406	550



(i) Electrical Connections

(ii) Access Panel

(iii) Suspension Points (M10 Female)