

**Infrared brooders KROMS 1 - KROMS 1.5**  
**Infrared brooders KROMS 5 - KROMS 10**  
**Temperature control systems**

# Livestock heating



# Infrared brooders KROMSCHROEDER

**The ideal heating solution for optimal poultry and pig installations, with considerable savings in gas consumption**

## Innovative design

Thanks to their conical radiating surface of stainless steel sheet and their anodized aluminium canopy, Kromschroeder brooders provide more radiant energy using less gas than any other heating system.

## Infrared radiation. Principle of working

The sun gives living creatures heat in the form of infrared electromagnetic waves. These have the particularity that they travel across the air without heating it, affecting the mass of objects, surfaces and living creatures, when they become heat and increases their temperature.

## Kromschroeder brooders work on the same principle

Infrared radiation gives an agreeable feeling in the surface of bodies. The indirect effect of radiant heat can be noted by heating of the surrounding surfaces, such as the floor and other objects. The result is an extremely comfortable ambient temperature, which can be achieved with relatively low air temperatures.

The mathematical formula expressing the physical correlation between air temperature and radiation temperature is as follows:

$$t_R = t_L + t_s$$

Where:  $t_R$  = resulting temperature  
 $t_L$  = air temperature  
 $t_s$  = mean radiant temperature

This expression tells us that we can obtain the same degree of comfort with different air temperatures.

Radiant heat offsets low air temperatures. Because of the lower air temperature, the difference between the interior and the exterior air temperature is considerably reduced, minimizing losses through air renewal to a large extent. Consequently, you save energy and considerably cut your operating costs.

With convective heating systems, hot air rises, far away from the area where it is needed.



Infrared radiation, however, heats the objects and living creatures it comes into contact with. The air is heated indirectly, upon contact with the hot masses. The heat is therefore transmitted to where it is needed. What's more, the temperature is distributed evenly, thanks to the cone-shaped design of the radiant surfaces, producing uniform circles with different comfort levels. The animals can move freely, choosing the most suitable area for their heat requirements.

## Advantages of Kromschroeder Brooders:

- High energy efficiency: up to 30%-40% energy savings compared with conventional systems
- High quality, durability and comfortable warm
- Possibility of various heating areas
- No dust stirred up or draughts produced
- Quick heat-up time
- Return of investments in just a few broods



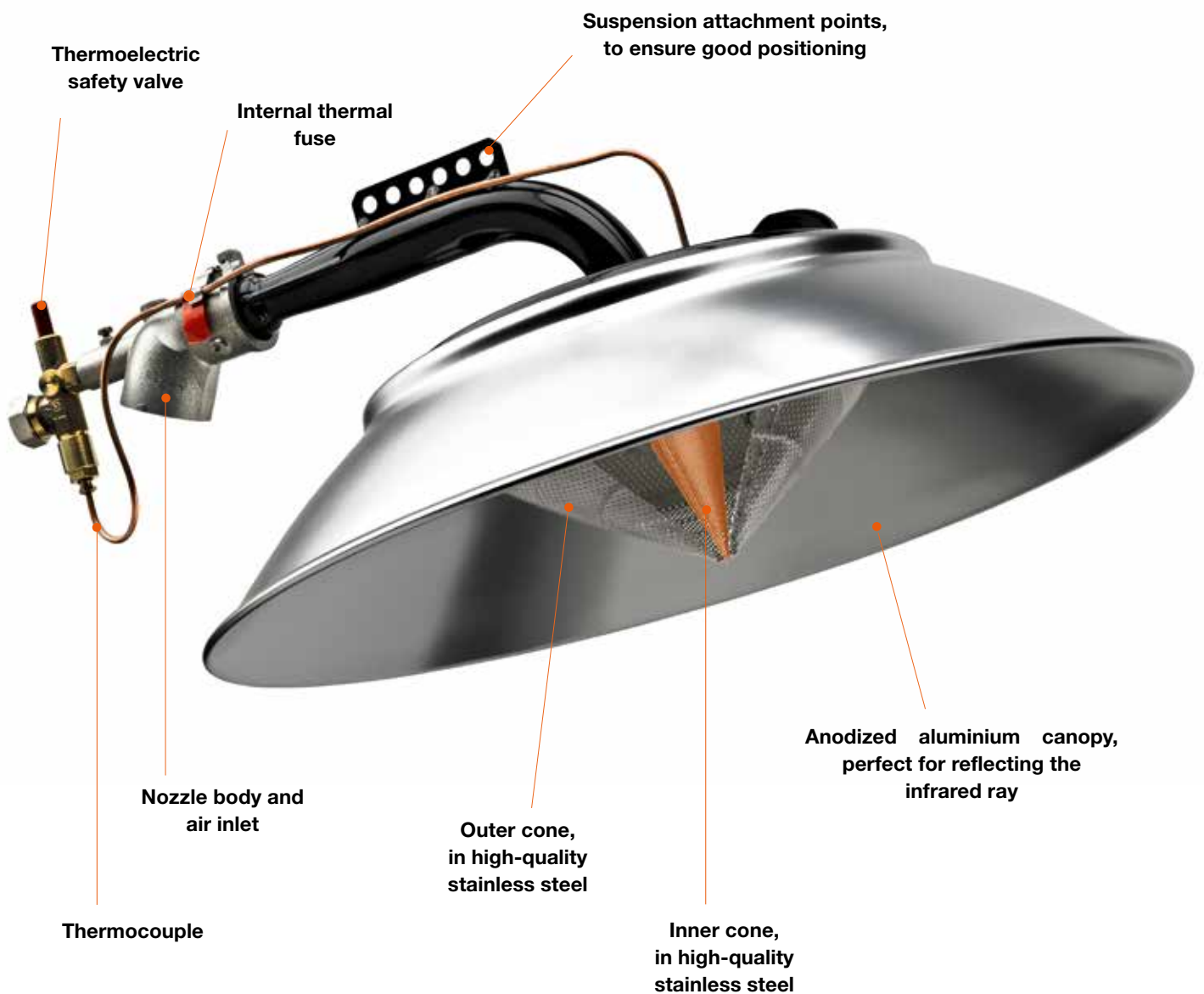
**Hot air heating**



**Radiation heating**

**Low maintenance**  
**Safety and reliability**

## **Main components of the brooder**



# KROMS 1 - KROMS 1.5

For small poultry installations  
For pig farrowing or weaning



## KROMS 1 - KROMS 1.5

Infrared gas brooder with double radiating surface of stainless steel for poultry applications and farrowing or weaning sows.

- Capacities of 1 and 1.5 kW
- Modulating control between 10-20% and 100% of nominal capacity
- Equipped with thermoelectric safety valve
- EC type-examination Certificate
- Depending on the model, fitted with manual output regulation
- Optional: individual automatic temperature regulation (VRT – model KROMS 1.5)

Technical Features		KROMS 1 BP	KROMS 1.5 BP	KROMS 1 HP	KROMS 1.5 HP
Capacity (kW)		0,24 / 0,83	0,43 / 1,45	0,09 / 0,83	0,16 / 1,45
Consumption	Propane gas(g/h)	18 / 60	31 / 105	6,5 / 60	12 / 105
	Natural gas(m³/h)	0,020 / 0,068	0,035 / 0,119	-	-
Inlet pressure (mbar)		300	300	1400	1400
Working pressure (mbar)		37 / 300	37 / 300	20 / 1400	20 / 1400

Minimum distances recommended		KROMS 1 BP	KROMS 1.5 BP	KROMS 1 HP	KROMS 1.5 HP
A (m)		0,80	1,10	0,80	1,10
B (m)		0,75	0,75	0,75	0,75
C (m)		0,70	1,00	0,70	1,00

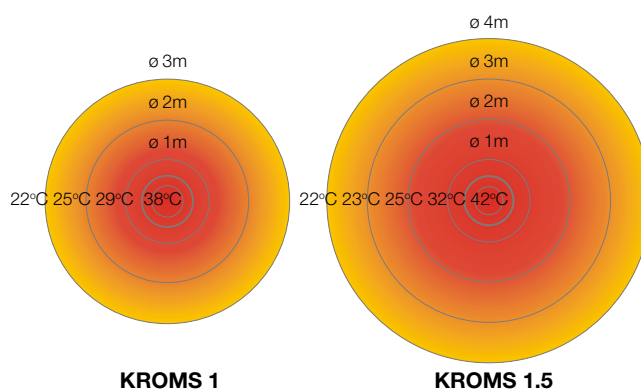
Coverage in number of animals (*)		KROMS 1 BP	KROMS 1.5 BP	KROMS 1 HP	KROMS 1.5 HP
Broilers		150 / 300	350 / 500	150 / 300	350 / 500
Piglets (weaning)		10 / 12	20 / 22	10 / 12	20 / 22

Control type applicable		KROMS 1 BP	KROMS 1.5 BP	KROMS 1 HP	KROMS 1.5 HP
Manual regulation		X	X	-	-
Automatic regulation (VRT)		X	X	-	-
Mini Therm control panel		X	X	X	X

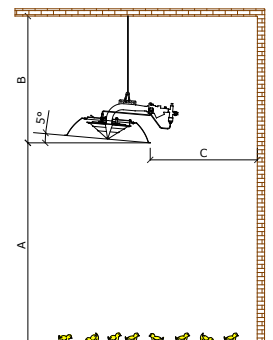
(\*) Reference values. Various factors come into play such as external temperatures, relative humidity, the degree of insulation of buildings, density of birds per m², etc.  
For a more accurate calculation in each case, please contact our technical department.

Average temperatures obtained under ideal conditions, with a air temperature close to 22 °C.

This information may vary slightly according to the degree of insulation of the building and the total number of brooders running at any one time.



Detail of hanging position brooder



# KROMS 5 - KROMS 10

For medium and large poultry installations  
For pig fattening sector



## KROMS 5 - KROMS 10

Infrared gas brooder with double radiating surface of stainless steel sheet for medium and large poultry installations and the pig fattening sectors

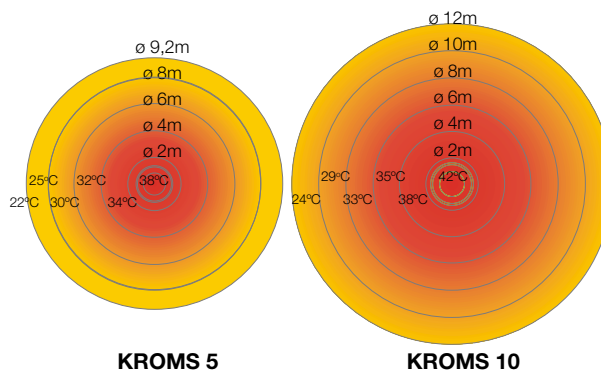
- Capacities of 5 and 10 kW
- Modulating control between 10% and 100% of nominal capacity
- Fitted with thermoelectric safety valve and internal thermal safety fuse
- EC type-examination certificate
- Optional: individual automatic temperature regulation (VRT)

Technical features		KROMS 5 BP	KROMS 10 BP	KROMS 5 HP	KROMS 10 HP
Capacity (kW)		0,55 / 4,80	1,15 / 10	0,55 / 5	1,12 / 10,80
Consumption	Propane gas(g/h)	40 / 346	85 / 722	40 / 360	85 / 780
	Natural gas(m³/h)	0,045 / 0,393	0,095 / 0,819	-	-
Working pressure (mbar)		20 / 300	20 / 300	20 / 1400	20 / 1400
Minimum distances recommended		KROMS 5 BP	KROMS 10 BP	KROMS 5 HP	KROMS 10 HP
A (m)		1,60	2,00	1,60	2,00
B (m)		0,75	0,75	0,75	0,75
C (m)		1,50	2,50	1,50	2,50
Coverage in number of animals (*)		KROMS 5 BP	KROMS 10 BP	KROMS 5 HP	KROMS 10 HP
Broilers		1500 / 1800	2500 / 3000	1500 / 1800	2500 / 3000
Turkeys		500	975	500	975
Guinea fowls		700	1400	700	1400
Ducks		400	860	400	860
Pigs		Fattening	-	Fattening	-
Control type applicable		KROMS 5 BP	KROMS 10 BP	KROMS 5 HP	KROMS 10 HP
Automatic regulation (VRT)		X	X	X	X
Mini Therm control panel		X	X	X	X
KROMS C control panel		X	X	X	X
KROMS E control panel		X	X	X	X
KROMS EA control panel		X	X	X	X
KM12 control panel		-	-	X	X
KROMS HP adj. minimum		-	-	X	X
KROMS BP adj. minimum		X	X	-	-

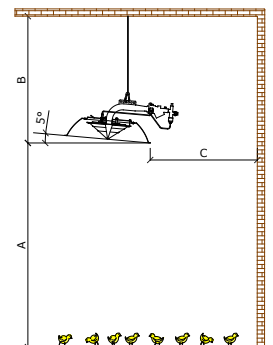
(\*) Reference values. Various factors come into play such as external temperatures, relative humidity, the degree of insulation of buildings, density of birds per m², etc.  
For a more accurate calculation in each case, please contact our technical department.

Average temperatures obtained under ideal conditions, with a air temperature close to 22 °C.

This information may vary slightly according to the degree of insulation of the building and the total number of brooders running at any one time.



Detail of hanging position brooder





# Automatic temperature regulation without power supply

## 1- Manual regulation systems

Available for KROMS 1 and 1.5 brooders. Allows adjustment of the power of these brooders easily and quickly by way using a manual valve.



Manual valve

## 2- Automatic regulation systems. Individual control

Varying the output of Kromschroeder brooders and controlling the ambient temperature of the device is possible by incorporating the thermostatic radiator valve (VRT), enabling control of multiple comfort zones in a single facility. Its unique design provides smooth and automatic capacity adjustment of the device. VRTs available with or without capillary, and with various modulation ranges and working pressures. Available for KROMS brooder versions 1.5, 5 and 10. Sensors built into the head and externally with 2-metre capillary tube

Head Numbering	Ambient temperature °C
Δ	15
*	20
1	22
2	28
3	33
4	36
5	38



## 3-Automatic regulation systems Centralized control

Centralized control system of brooder output and temperature regulation. No power supply required. Available in two versions depending on the number of brooders installed..

### Mini Therm control panel Technical features

- Thermostatic sensor built into the end of a capillary tube of 2 to 8 m
- Pressure regulator for minimum capacity



### KROMS C control panel Technical features

- Thermostatic sensor built into the end of a capillary tube of 15 m
- Adjustable maximum and minimum capacity regulator



**In both cases (Minitherm and KROMS C) installation of the line filter and input regulator is recommended.**

Control panel type	Inlet pressure (bar)	Maximum numbers of brooders to be controlled (1)							
		KROMS 1		KROMS 1.5		KROMS 5		KROMS 10	
		GN	GLP	GN	GLP	GN	GLP	GN	GLP
Mini Therm BP (2)	0,30	17	33	10	19	4	5	2	2
Mini Therm HP (2)	1,40 a 1,50	-	130	-	75	-	16	-	8
KROMS C BP (2)	0,30	-	-	-	-	28	36	13	16
KROMS C HP (2)	1,40 a 1,50	-	-	-	-	-	40	-	20

(1) Values vary according to the controller installed before the control panel.

(2) The control panel version (BP or HP) corresponds to the version of the brooder that it is to control.

## Easier to integrate into automated installations

### Automatic regulation systems.

#### Capacity modulation and control of internal temperature

Through control panels KROMS E, EA, KM12, and HP/BP with adjustable minimum, specially designed for controlling Kromschroeder brooder capacity modulation, and combined with the installation's control computers or the T20 temperature control, automated temperature control can be performed.

#### KROMS EA BP/HP control panel

##### Technical features

- Equipped with thermoelectric actuator with modulated control
- Built-in minimum setting regulators
- Power supply: 24 V / 50-60 Hz
- Set point signal from 2 to 10 V dc
- Manual operation in case of power failure



#### KROMS BP/HP adjustable minimum control panels

##### Technical features

- Equipped with electrovalve with on / off control
- Power supply: 230 Vac / 50-60 Hz
- Brooders work on minimum or maximum capacity
- Must be used governed by a centralized control or, failing that, with a thermostat (not included in the control)
- Ability to set the minimum pressure value

#### KROMS E BP/HP control panel

##### Technical features

- Equipped with thermoelectric actuator with on / off control
- Power supply: 230 Vac / 50-60 Hz
- Operation time: 5 minutes from 20 mbar to reaching the corresponding final value
- Must be used governed by a centralized control or, failing that, with a thermostat (not included in the control)



#### KM12 control panel

##### Technical features

- Centralized control systems equipped with servomotor
- Has two sensors for averaging all-round temperature and allows progressive capacity modulation of the brooders
- Power supply: 230 Vac / 50-60 Hz
- Percentage display of power delivered and the throttle opening.
- Manual operation in case of power failure

Control panel type	Inlet pressure (bar)	Maximum numbers of brooders to be controlled (1)			
		KROMS 5		KROMS 10	
		NG	LPG	NG	LPG
KROMS E BP (2)	0,30	28	36	13	16
KROMS E HP (2)	1,40	-	40	-	20
KROMS EA BP (2)	0,30	-	36	13	16
KROMS EA HP (2)	1,40	-	40	-	20
KM12 (2)	1,40	-	20	-	10
KROMS HP adj. minimum (2)	1,40	-	52	-	24
KROMS BP adj. minimum (2)	0,30	28	36	14	19

(1) Values vary according to the controller installed before the control panel.

(2) The control panel version (BP or HP) corresponds to the version of the brooder that it is to control.



Experts in livestock heating.

Kromschroeder, S.A. has emerged as a leading company in manufacturing and selling of products and system, as well as in rendering services to the different fields of distribution and efficient use of energy.

With a highly qualified team and a wide range of products and innovative systems for the development of energy efficiency, Kromschroeder, SA grants full satisfaction to the most demanding needs and expectations of customers.

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