GoGaS®
Ecothermal Engineering

HIGH INTENSITY HEATERS:
Innovative Technology with Maximum Efficiency

With a radiation factor of more than 80%*

* (2011 measured independently on GoGaS KMI 18 and 24)

GoGaS high intensity heaters: Sunny times for your halls

WARMTH CREATES COMFORT

Unlike any other directly-fired heating systems, infrared radiators function predominantly by warming the surface on which the radiation is taking effect, not by warming the air. Infrared radiation has the characteristic of warming only the body on which it impinges. Everything and everybody who comes within the range of the infrared radiation absorbs the radiation and becomes an irradiator of warmth. We feel most comfortable when we are in the presence of high levels of radiation intensity, such as ray of sunlight, or the cosy warmth of a ceramic tile stove.

The temperature which is appreciated is made up of the ambient temperature and the radiation temperature. The use of this simple physical phenomenon saves energy, and saves money too. The special comfort with, at the same time, maximum efficiency, is achieved with the highest ever measured radiation factor of more than 80%*. And energy savings of more than 50% over conventional heating systems are the general rule.

FROM GERMANY TO THE WORLD

Our infrared radiators have become standard heating systems in many areas and many sectors. Whether in stadiums, outdoor areas, commercial premises, or storage halls, whether in Europe, Asia, or the USA, GoGaS is always there. More than 65 years of experience and the hallmark of quality "Made in Germany" – values you can really trust.

THE DRIVE FOR RESEARCH AND THE THIRST FOR KNOWLEDGE

GoGaS has been the leader in innovation for high intensity heaters for decades. The achievements which have shown the way to the future with the drive for research are, among others, the development of multi-stage and modular regulating systems, the fully-insulated combination radiator, and the patented double nozzle.

*(2011 measured independently on GoGaS KMI 18 and 24)

Space heating 2.0: Efficient and sustainable

Decentralised, directly-fired systems are the benchmark for efficient space heating. **Decentralised systems have the advantage that they do not convey the heat, but only the energy – and they do it without any losses, directly into the heating area.** Directly-fired systems, which are incorporated into one unit for heat generation and heat transfer, and even make standstill losses in the heating areas usable, now have the status that they deserve.

The largest study* conducted on this topic, in 2012, awarded bright radiator systems excellent scores in all categories:

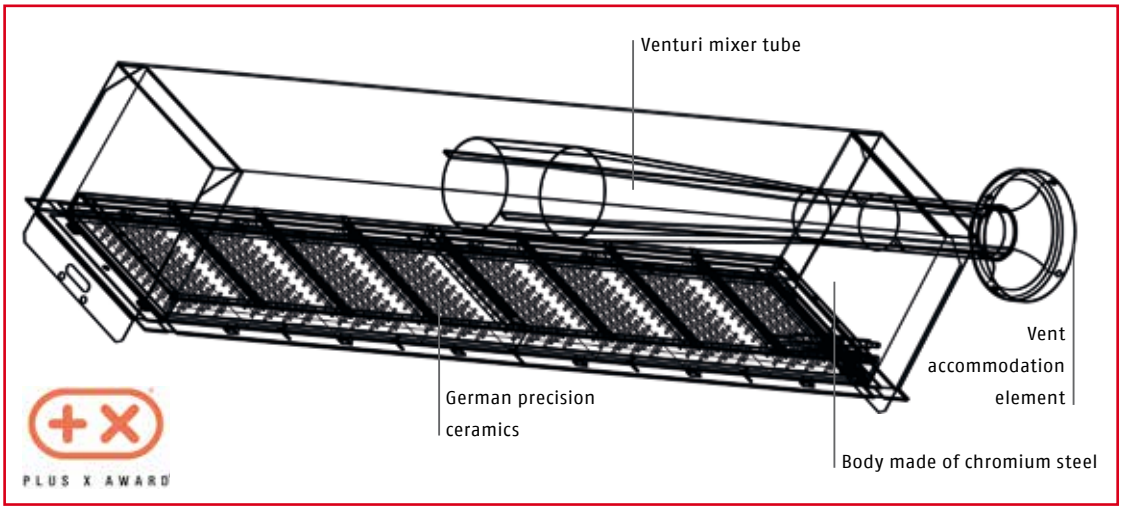
- **"Very Good" for energy efficiency**
- **"Very Good" for ambient air quality**
- **"Good" for thermal comfort**

* (High Intensity Heaters Study 2012 – Download at www.gogas.com)

The warm heart that's full of innovations

The heart of all GoGaS high intensity heaters is the combustion chamber, packed with innovations, made of heat-resistant chromium steel and fitted with German precision ceramics and a truly extraordinary structured surface. This surface-enlarging structure, and more than 900 extremely fine pores on every ceramic plate, allow for surface temperatures of 950°C to be achieved, and thermal energy of 1,500 Watt per ceramic plate. **A system which is designed for operational safety and reliability and long service life, even under the toughest conditions.**

In 2011 the combustion chamber in the VARIOMAX design was distinguished by winning the international Plus X Award.



Twins – similar and entirely different

The heart, embedded in two different systems, both combination radiators, true to the infrared principle and yet very different. **The Premium Series KMI and the Series M are among the absolute best systems in their class.** They are designed as combination radiators, in other words a combined radiation from the ceramics and the sophisticated reflectors, guarantors for the maximum achievable radiation factor.

PRICE-PERFORMANCE WINNER: SERIES M

The price-performance winner Series M, with its reflector geometry made of Feran, is a real achievement with its low weight, easy handling in installation, and, of course, the low costs. If the focus is not necessarily on efficiency, or the annual operating hours are low, the Series M has to be the first choice.

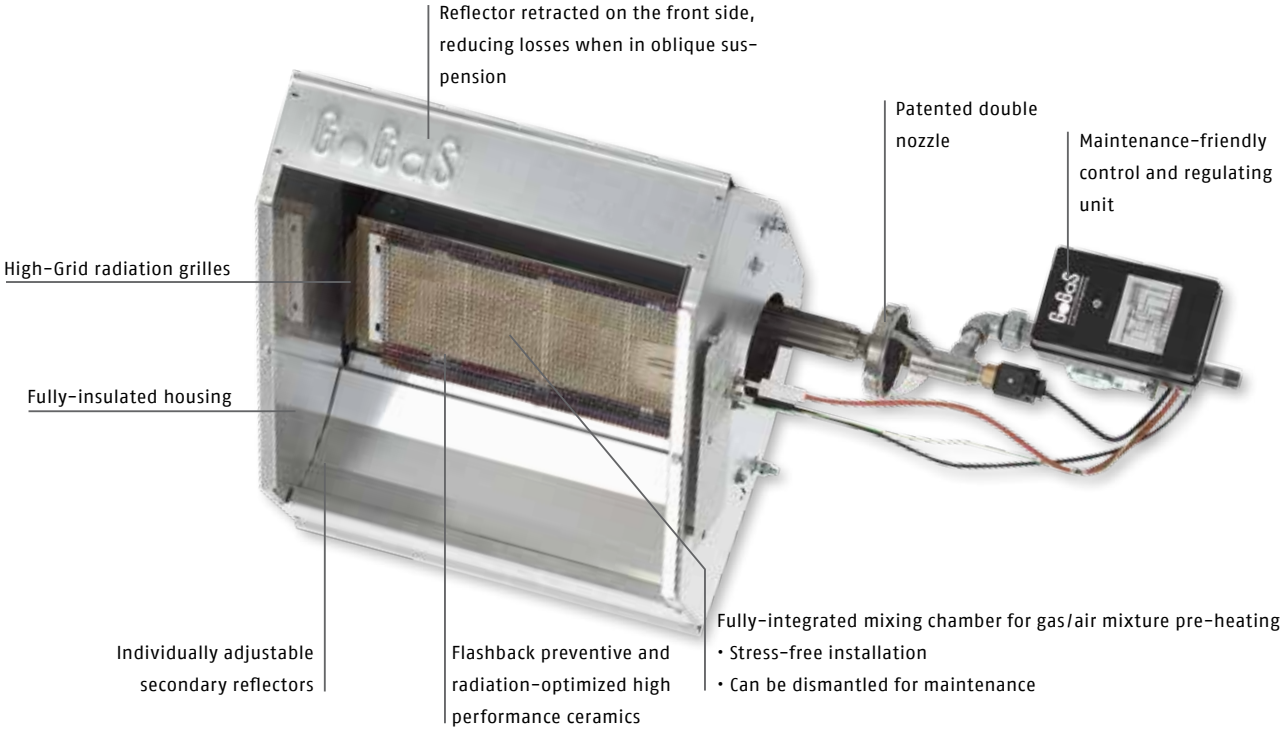
PREMIUM SYSTEM: SERIES KMI

The greatest GoGaS innovation in the high intensity heaters sector, the Series KMI, is the ultimate premium system. When governments were considering the efficiency of decentralised hall heating systems, the KMI was undoubtedly one of the inspirations. With the Series KMI, the innovative "warm heart" is freely suspended in a 3D-enclosed isolated chamber. Hot combustion gases at about 650°C flow around the combustion chamber from all sides, and the gas/air mixture undergoes extremely effective pre-heating. The almost perfect combustion of the combustible gases is virtually pollution-free. The high temperatures are conducted via two individually adjustable Feran secondary reflectors into a thermal radiation arrangement which is beyond compare in its efficiency. This innovation from GoGaS creates different radiation profiles depending on the setting, tailored precisely to suit your hall.

PERFECT COMBUSTION:
Only 10 m^3 discharged air needs to be conducted away per installed Kilowatt, without a discharge air system and simply by way of a ventilator.
What about the discharge air temperature?
Never higher than the ambient temperature!
Thermal efficiency: Better than 95%!
Heat input and comfort: 100%.

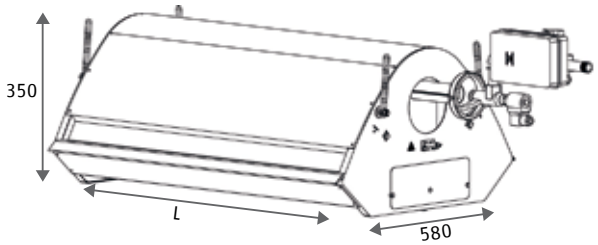
Technical data & facts

High Intensity Heaters Series KMI



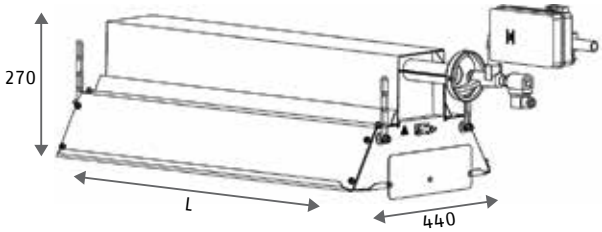
PERFORMANCE VALUES FOR HIGH INTENSITY HEATERS SERIES KMI & HIGH INTENSITY HEATERS SERIES M					
Nominal heat input	6	12	18	24	36
Kilowatt maximum	6	12	18	24	36
Kilowatt minimum	3	3	6	9	12	18

HIGH INTENSITY HEATER SERIES KMI



DIMENSIONAL DATA FOR THE SERIES KMI		
Type	Length (mm)	Weight (kg)
6	480	14,5
12	849	22,5
18	1218	30,5
24	1587	39,5
36	2325	54,5

HIGH INTENSITY HEATER SERIES M



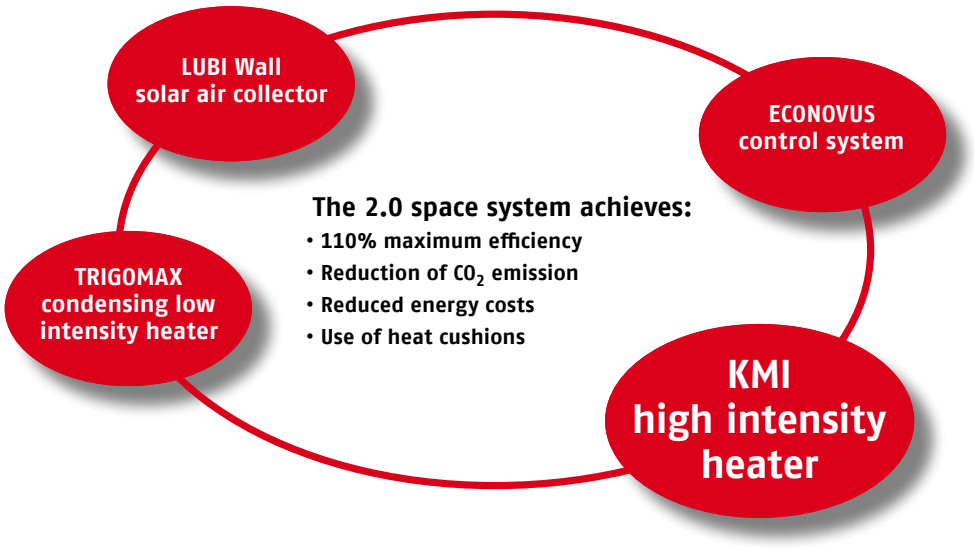
DIMENSIONAL DATA FOR THE SERIES M		
Type	Length (mm)	Weight (kg)
6	450	7
12	820	13
18	1190	17
24	1580	22
36	2310	31

Space heating 2.0

The high intensity heater KMI as a module in your tailor-made space heating system

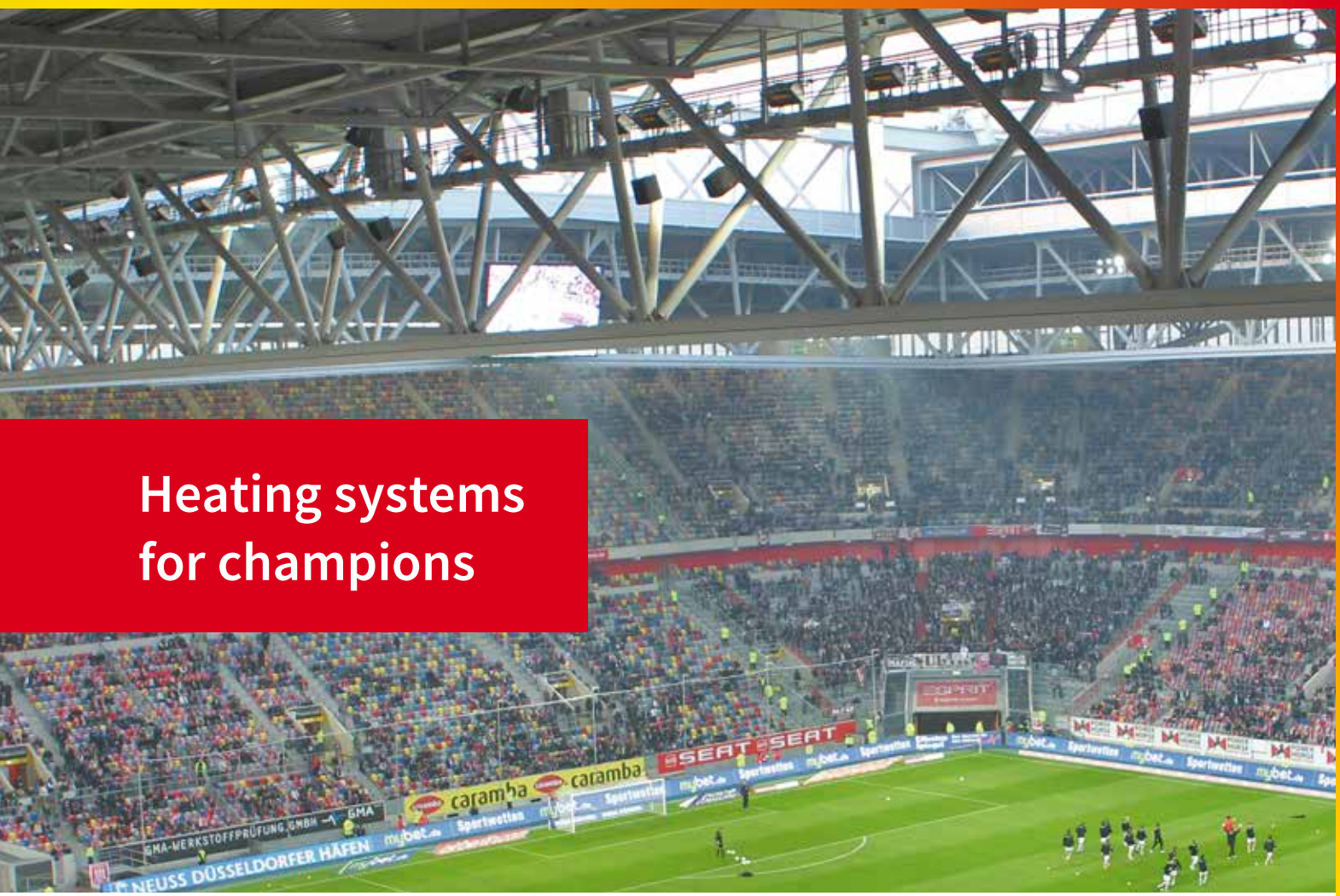
INDIVIDUAL, ENERGY EFFICIENT AND SUSTAINABLE SYSTEM CONFIGURATIONS

Our fine products, such as the TRIGOMAX condensing low intensity heater, the KMI high intensity heater, the LUBI Wall solar air collector, and the ECO-NOVUS control system, are outstanding achievements in their economy and savings potential. Both as soloists as well as team players, our products can offer you the highest efficiency and sustained performance available. They are the modules which make up the 2.0 space heating system, an in-novative, energy-saving, decentralised heating system:



INDIVIDUAL, FULL COVERAGE, AND SUSTAINED SERVICE OFFERS

Things start with expert advice and consultation. Based on the characte-ristics of your hall and its use, and the savings you want to achieve, our engineers prepare a heating concept. Next, we take care of the installation of the devices and take them into service. And for the entire service life of your system, we can provide regular maintenance to keep the system up to maximum efficiency, to make sure you keep saving energy on your heating in the future. And decades of production in Germany ensures you of an ab-solutely reliable spare parts supply.



Heating systems for champions

GERRY WEBER STADION
ESPRIT arena
EPS ELLIS PARK
HELMOND SPORT
VIKING F.K. STAVANGER
fc jazz FOOTBALL CLUB JAZZ · PORI

ENERGY EFFICIENCY AND SUSTAINABILITY FROM DORTMUND

A winter evening, Football Champions League. Thousands of spectators are shivering in the stadium with their team – but with excitement not with cold. And the reason? Hundreds of high intensity heaters from GoGaS providing heat under the roof of the stand. The finely designed heating system is not only energy efficient, but, above all, extremely cost efficient as well. It only costs about 0.02 € per seat to provide constant heating for a stand – and that's for a complete football match.

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GoGaS Goch GmbH & Co. KG
Zum Ihnedieck 18
44265 Dortmund
GERMANY
Telefon + 49 231 46505-0
Telefax + 49 231 46505-88
info@gogas.com
www.gogas.com

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