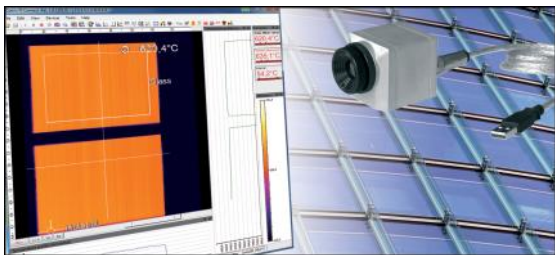


As you know, the measurement of temperature in the Glass Industry is fundamental to the quality of the finished product and is equally important whether the end product is sheet glass or moulded container products. Process Parameters is in the ideal position to be able to assist when monitoring process temperatures in your glass manufacturing application regardless of your end product.

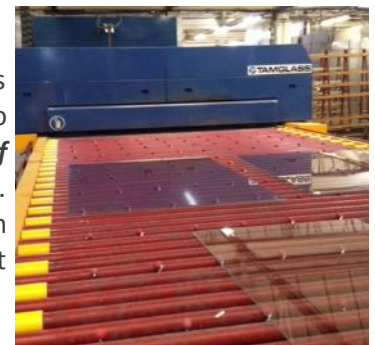
Flat Glass Manufacturing and Secondary Processing

It is true that Infrared Line Scanners have been used in the industry for a number of years, but not all line scanners are equal. Process Parameters is the sole UK distributor for the proven range of German made Optris PI Infrared Thermal Imaging Cameras which offer many benefits to the user over traditional line scanners.

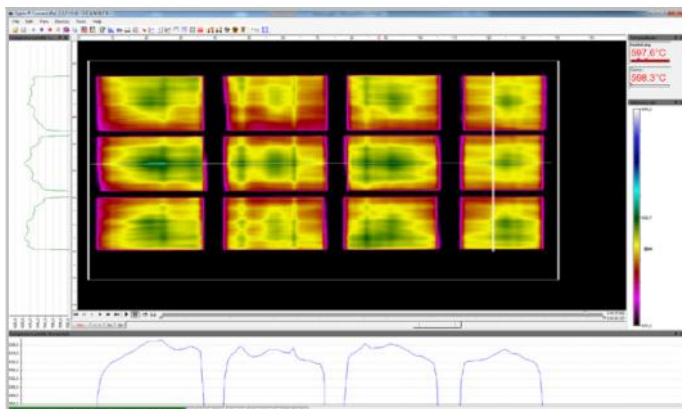


Each PI series Thermal Imaging Camera is supplied with the industry leading PI Connect software at no extra charge. This is not a cut down, entry level package but a fully featured suite of software that can operate at the heart of your process. Included within the software is **Line Scanning functionality**, making the camera ideal for use in your manufacturing or secondary processing applications. We have seen **particular success in toughening lines** where the homogeneity of the glass temperature is critical to ensuring a high quality finished product.

Alongside the Line Scanner function, the camera and its software have many features to make life easier such as built in **high and low alarms** to alert the operator to conditions outside of allowable tolerances. We can also **specify measuring areas of interest** which allow you to record actual temperature measurements over time. Finally, each batch of glass can **automatically trigger a still image recording** which can be used as part of a quality document to your customer proving that the correct temperatures have been achieved as appropriate.



In addition there are plenty of other benefits. The main one to consider is the way Optris cameras have been **designed from the outset to be suitable for use in industrial applications**. From the **IP67** environmental protection rating, to the **optional cooling jacket** that allows operation at ambient temperatures of up to 240°C ensuring your hardware is protected at all times.



Finally we must say something about price. You may be thinking that all of this technology will be expensive but you would be wrong. The Optris product is renowned for being **extremely price competitive** whilst offering products that are at the **forefront of technological development**. Compare us to the competition and we believe you will be pleasantly surprised.

Process Parameters Ltd

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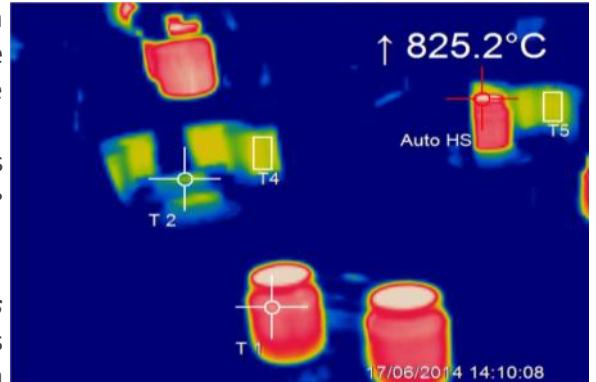
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Moulded Container Products

In the high speed world of glass container manufacturing, it is a challenge to be able to measure anything at all not least the temperature within your process. Well Process Parameters have products that can solve this problem for you. Our range of Optris PI Thermal Imaging Cameras and fixed Infrared Temperature Sensors give **extremely fast non-contact methods of temperature measurement ideal for applications where time is of the essence.**

Optris Infrared Cameras allow the user to **see and record what is happening within their process** either for continuous process monitoring or to review afterwards, perhaps as a quality record for a customer. We can supply cameras suitable for various aspects of the moulding process and with all of the benefits of our PI Connect software we can **easily integrate into your existing process control system.**



In some cases however, a Thermal Camera is not appropriate and we can also **offer single spot Infrared Pyrometers** for these occasions. Optris sensors are robust, ideal for industrial applications but also have plenty of well thought out features. For example we have **specific wavelength versions for glass** which avoid the issue of changing or variable emissivity. They have **extremely fast response times**, some as quick as 1msec, enabling measurements to be taken in the shortest possible time, perhaps whilst a mould is split open during unloading. We also supply Infrared Thermometers suitable for **measuring the surface temperature of moulds** which can present their own problems.

Other Glass Manufacturing Processes

Beyond the higher volume applications, there are plenty of others within the glass industry where temperature measurement is critical. So whether you are making light bulbs for the automotive industry, or a manufacturer of glass fibres or perhaps even a glass recycler, Process Parameters have temperature measurement products to meet your needs.

We can also provide products that are able to measure the **temperature through glass**, such as on a filling plant. So if in your application the glass is not the most important element of the process we can probably still deal with it.

Object size is not generally an issue with high resolution optics fitted to both our range of cameras as well as our single spot infrared pyrometers. With measuring spots as narrow as 1mm diameter, it is possible to **measure the smallest of objects**, e.g. in the manufacture of glass tubing or optical fibres.

About Process Parameters

Process Parameters was formed in 2004 as a UK based manufacturer and distributor of temperature measurement and control equipment. We have developed an enviable reputation for supplying excellent quality and value for money products to the Glass Industry and beyond.

We would welcome the opportunity to discuss your application and how our products may help you.



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