

PIOX[®] R721

Process Analytics by Inline Refractometry

Concentration / Density
Measurement

Unique Measuring Principle

Accurate / Drift-free

Performance Indication

Widely applicable



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Process Analytics by Inline Refractometry

Unique measuring principle

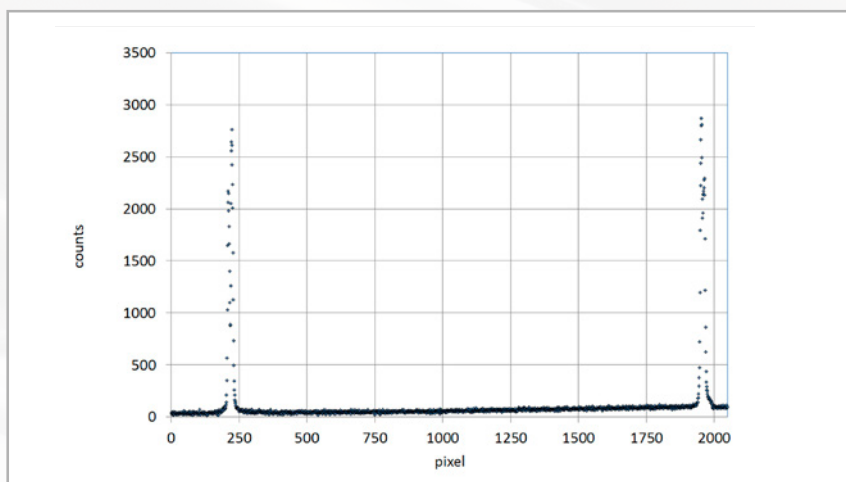
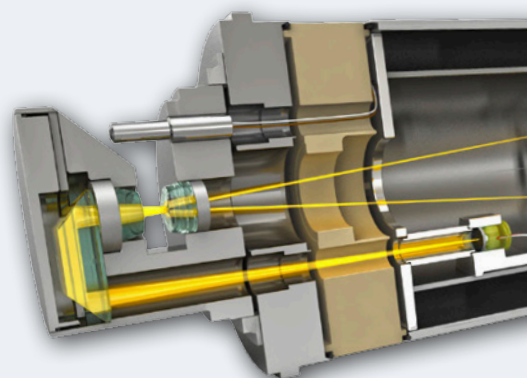
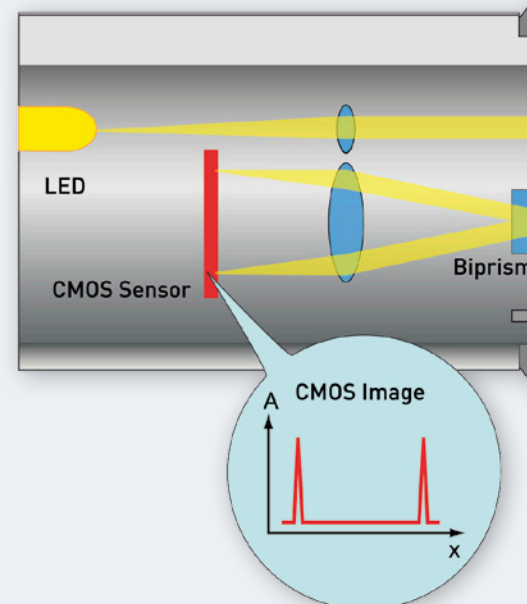
Employing FLEXIM's patented transmitted light principle, light is transmitted through the medium rather than surface reflected. As a result, the instrument measures the refractive index of the medium, unaffected by any fouling film on the prism.

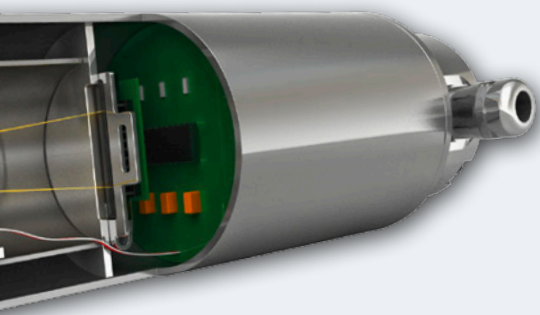
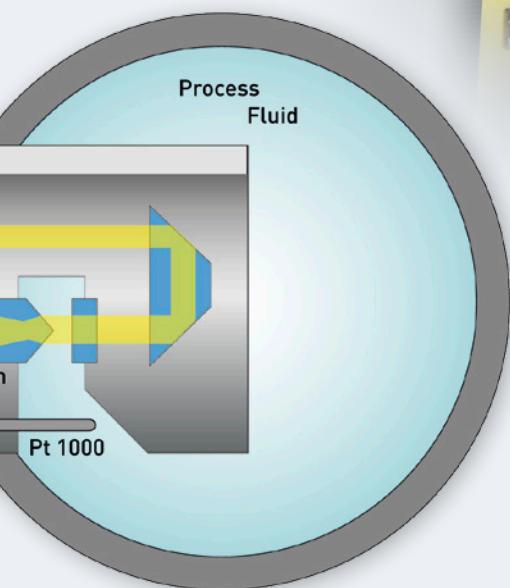
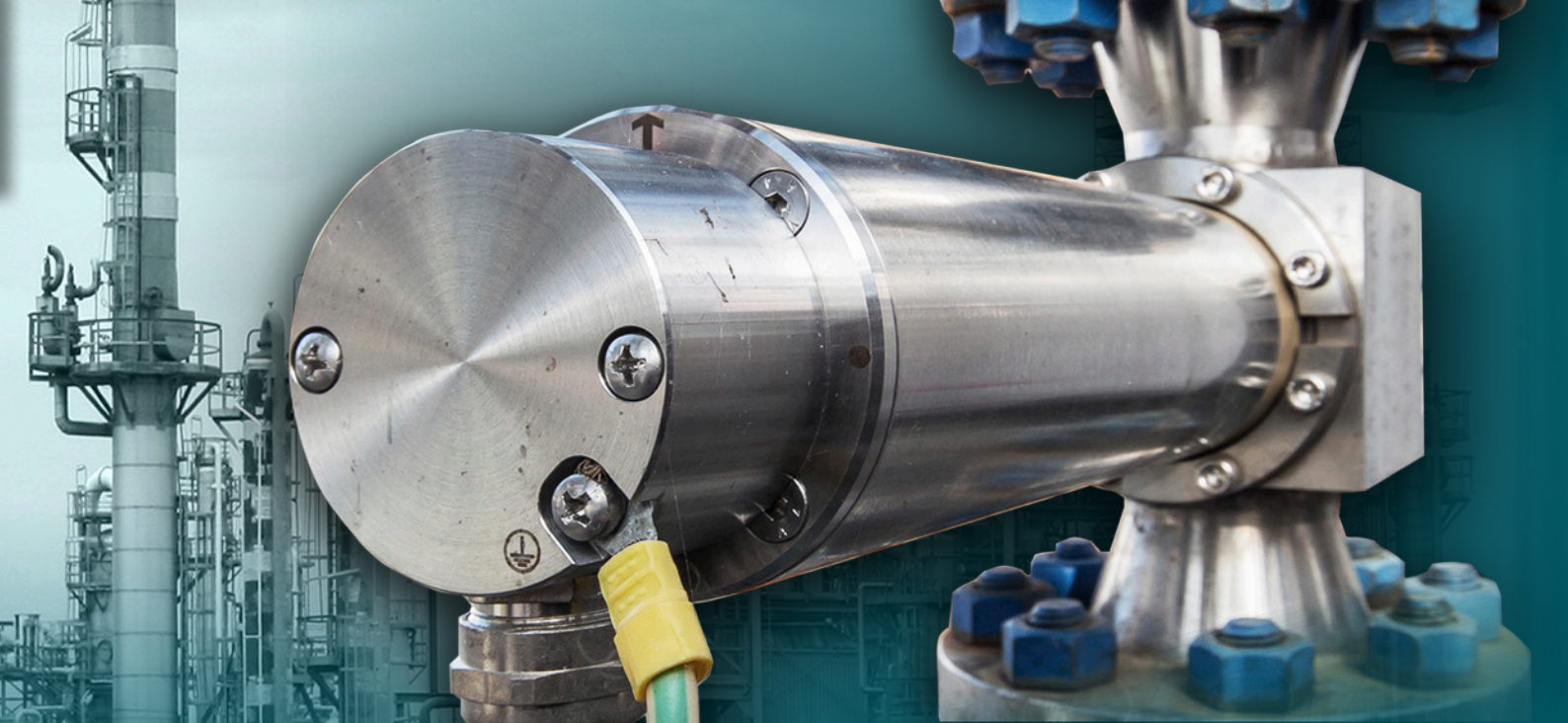
Drift-free measurement

The double prism employed negates the effect of fouling film or other contamination, producing virtually drift-free measurement.

Accurate

With a reproducibility of the refractive index $\pm nD 0.00002$, very accurate concentration measurements can be derived. FLEXIM provides a huge media database and, in the case of unique customer media, FLEXIM's laboratory will create the liquid file that can be added to the transmitter.





Fouling / turbidity measurement / diagnostic values

The newest generation of CMOS image converters is applied to convert the raw measurement data to practical values; which results in useful diagnostic values as well. The height, the shape and difference of the 2 peaks provides information about noise, fouling and turbidity and gives you useful information about the health of the measurement.

Versatile transmitter

The transmitter is able to handle complex measurement tasks and provides analog or digital (serial bus-systems) data outputs for process control and monitoring. By adding input(s), other process variables can be accommodated, by which the device can handle 3 component media; as an example a P10X® S (velocity of sound) can be combined.

Widely applicable

The sensor head is usually ordered in SS316L stainless steel with Kalrez sealing. However, a PTFE version is available in combination with different hazardous area ratings, attending to nearly all chemical resistance requirements. The transmitter is double-sealed for highest security. A sanitary design sensor is available. To complete the application, a variety of process connections and flow chambers are available.

FLEXIM

More than 25 years of experience
in Process Analytical Technology



PIOX® R	Process Refractometer Measurement according to FLEXIM's patented Transmitted Light Principle
Measuring quantities	Refractive index and refractive index at standard temperature, fluid temperature, concentration g/l, mass and vol %, density and density at standard temperature, scale values for example °Brix and °API, additional quantities programmable
Measurement range	nD: 1.3 ... 1.7, °Brix: 0 ...100
Measurement uncertainty Repeatability	nD: 0.0002 (corresponds to: 0.1 °Brix, 0.1 w%) nD: 0.00002 (corresponds to: 0.01 °Brix, 0.01 w%)
Operating temp. (fluid)	- 20 °C ... (+130 °C) +150 °C
Fluid pressure	PN 10, PN 16, on request PN 40 (depending on process connection)
Degree of protection / Explosion protection optional	Sensor R500: IP67, ATEX (IECEX) zone 0, 1, 2 Transmitter R721: aluminium or stainless steel enclosure, IP66, ATEX (IECEX) zone 2
Chemical Design variant Wetted parts, materials Housing material	Stainless steel 316Ti (1.4571) Stainless steel 304 (1.4301)
PTFE Chemical Design variant Wetted parts, materials Housing material	PTFE carbon-fiber reinforced bulk material powder coated stainless steel 304 (1.4301)
Process connection	DIN/ANSI flange, proprietary FLEXIM flow cell
Hygienic Design variant Wetted parts, materials Housing material	Stainless steel 316L (1.4404) Stainless steel 304 (1.4301)
Process connection	Compatible to Varivent or Tri-clamp connection

FLEXIM GmbH, Germany
Phone: +49 30 93 66 76 60
info@flexim.de

FLEXIM Austria GmbH
Phone: +43 33 26 529 81
office@flexim.at

FLEXIM Instruments Benelux B.V.
Phone: +31 10 24 92 333
benelux@flexim.com

FLEXIM France SAS
Phone: +33 4 27 46 52 10
info@flexim.fr

FLEXIM Instruments UK Ltd.
Phone: +44 1606 781 420
sales@flexim.co.uk

FLEXIM Middle East
Phone: +971 4430 5114
salesme@flexim.com

FLEXIM India
Phone: +91 98114 49285
salesindia@flexim.com

FLEXIM Instruments Asia Pte Ltd.
Phone: +65 67 94 53 25
salessg@flexim.com

FLEXIM Instruments China
Phone: +86 21 64 95 75 20
shanghai@flexim.com

FLEXIM S.A, Chile
Phone: +56 22 32 03 62 80
info@flexim.cl

**FLEXIM Service and Support Center
South America, Argentina**
Phone: +54 11 49 20 71 00
flexim@escoarg.com.ar
www.escoarg.com.ar

FLEXIM AMERICAS Corporation, USA
Phone: +1 63 14 92 23 00
salesus@flexim.com



www.flexim.com