



# 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

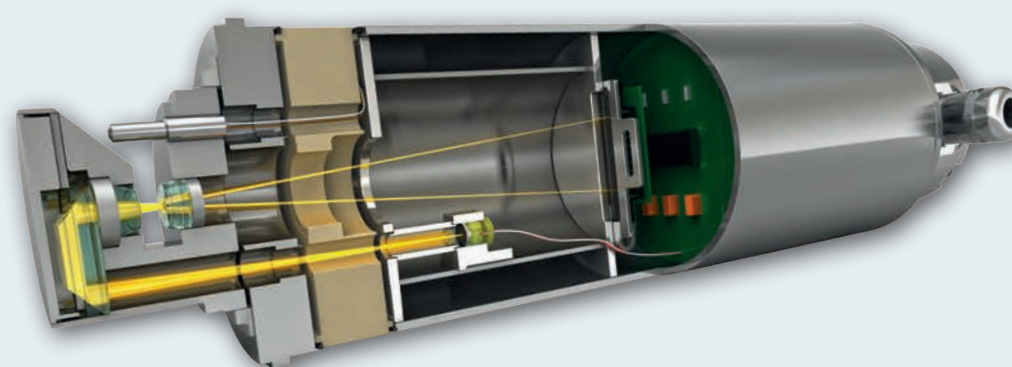
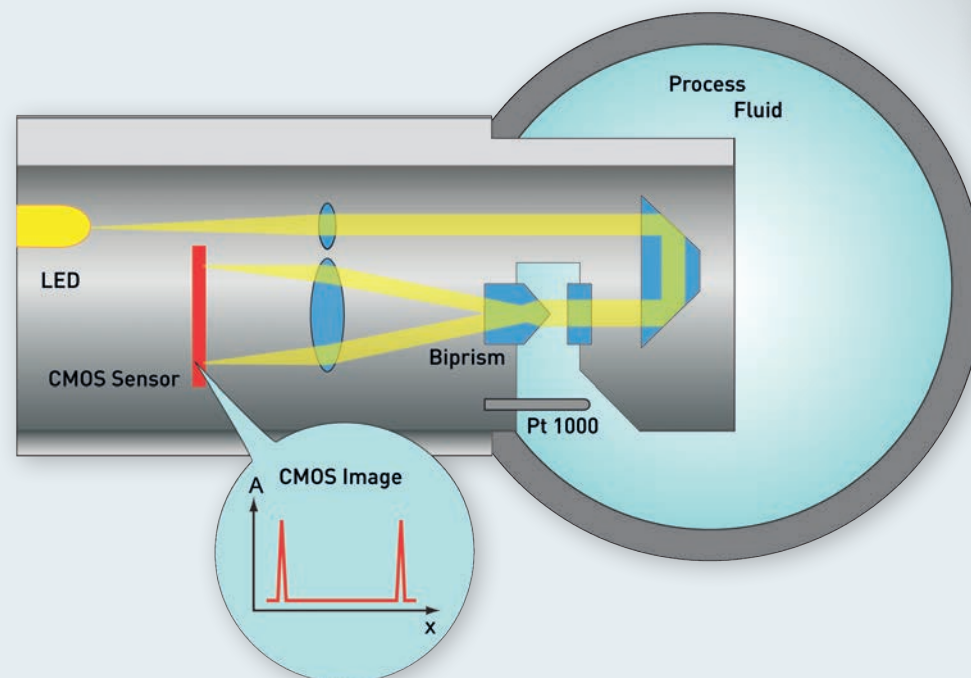
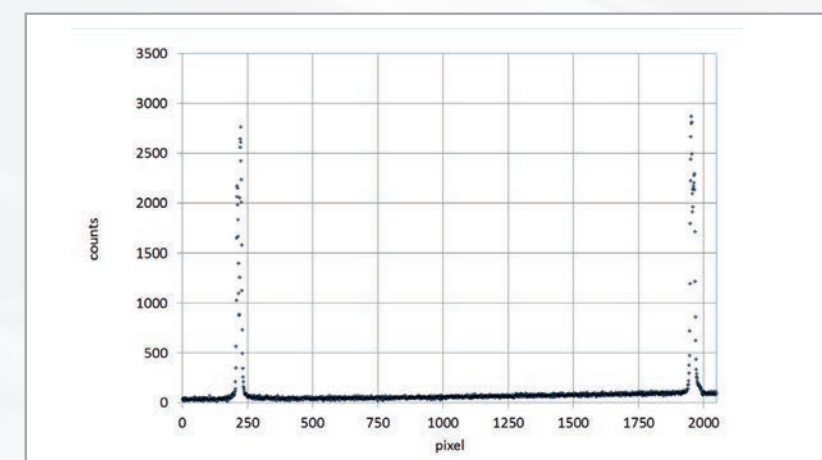
Employing FLEXIM's patented transmitted light principle, light is transmitted through the medium rather than surface reflected. As a result, the instrument measures the refractive index of the medium, unaffected by any fouling film on the prism.

### 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 Piox® 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



## P10X® 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)

- 5 °F ... (+ 270°F) + 300 °F

### Fluid pressure

150 psi; on request 300 psi  
(depending on process connections)

### Degree of protection / Explosion protection optional

Sensor: IP67, FM Class I Div. 2  
Transmitter R721(stainless steel housing):  
IP65, FM Class I Div. 2  
Transmitter R721(aluminium housing):  
IP 65

### 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

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**1-888-852-PIPE**

