New: Turb 430 IR

Turb 430 IR is the new turbidimeter for the measuring range from 0 – 1100 NTU/FNU. Turb 430 IR excels by a new optical design with InfraRed – LED and complies with DIN EN 27027/ISO 7027. The instrument is optimized for applications with high mobility demands, e.g.:

- Environmental monitoring
- Process control
- Water Analysis (Waste Water, Drinking Water, Water bodies in general)
- Beverage Industry

1. Portable Turbidity Measurement in Lab Quality

Due to the development together with the multiparameter photometers of the pHotoFex Series, Turb 430 IR is offering a huge number of innovations in comparison to conventional instruments:

- Handy and robust with an innovativ optical design to minimize straylight influences
- Precise measurement also in the critical ranges < 1NTU
- Calibration interval
- Calibration protocol
- Backlite graphics display
- Data storage of 1000 values
- GLP compliant data export with date, time, ident number
- RS 232 Interface
- LabStation (optional) for best ease of use in lab enviroment

2. New Optical Design

Turb 430 IR excels by a new optical design with IR LED and „light trap“. Thus, straylight influences are minimized and very precise results can be obtained in the range below 1 NTU/FNU. This precision can be improved by a specific handling of calibration (see below, application information). A respective instruction for measurements below 1 NTU is given also in the manual. Thus, Turb 430 IR is particularly suitable for turbidity measurements in the drinking water range.

3. Calibration

The calibration will be performed automatically by a user guidance on the display. A calibration interval can be set and a calibration protocol can be exported subsequently via RS 232.

For the automatic 3-point calibration AMCO-Clear® Standards (0.02-10-1000 NTU) are included in the delivery package. They are retracable to formazine and are accepted as primary standards acc. US EPA respectively secondary standards acc. DIN ISO. They offer many benefits in comparison to formazine:

- Less tolerances and therefor higher accuracy: thinking in preparation and dilution of formazine standards, a divergence up to ±5-7% can occur
- Longer expiry
- Non-hazardous in terms of sanitary.

Following the supplied application notes for calibration and measurements below 1 NTU, the accuracy of values in the low measurement range can be even enhanced.

4. Application Notes for Drinking Water and Measurements < 1NTU

Additionally to the high precision of the instrument, the accuracy can be enhanced by excluding influences of cuvettes!

Measuring in the low range < 1 NTU, tolerances within the cuvette influence the reproducability and accuracy of the measurement. Therefore, a specific procedure is recommended:

The calibration with standards 1000 NTU and 10 NTU can be done in unscratched and clean cuvettes by simply following instructions. Here, the influence of cuvettes are marginal. While calibrating with the 0.02 NTU standard the orientation of the cuvette during calibration measurement should be marked. For low value measurements of samples, the cuvette should be aligned according to this marking. In this way, glass tolerances are practically excluded, measurement values more precise!

5. General Technical Data

Measuring principle	Nephelometric (90° Straylight)
Light source	IR LED
Measuring Range	0-1100 FNU/NTU
Resolution	0,01 for range 0,00 -9,99 0,1 for range 10 – 99,90 1 for range 100 - 1100
Accuracy	0.01 NTU
Reproducability	< 0.5%
Calibration	Automatic 3-Point Calibration
Response Time	Ca. 3 s
Cuvette	28 x 60 mm, 20 ml Sample Volume
Display	Backlite graphics display
Data Storage	1000 values
Interface	RS 232, USB via adapter (optional)
Operating Temp.	0... +50°C
Power Supply	4 Mignon (AA) für ca. 3000 Messungen
Protection against Water	IP67
Approval	cETLus, CE, FCC;
Warranty	2 Years

6. Delivery Package

Turb 430 IR
Single instrument, battery model with 4 x 1,5 V, Type AA, manual and waterproof quick guide, CD with enhanced manual, 5 empty cuvettes 28 mm, cleaning tissue, sticker for marking of cuvette.

Optional Accessories

Rechargeable Battery photoFlex RB:
Battery Set **(**NiMH), incl. universal power plug with with Euro, US, UK and Australien plugs

LabStation photoFlex LS:
incl. rechargeable battery set pHotoFlex RB; plus software for easier use in the lab, loading function.

7. Order Information

Model	Description	Order #
Turb 430 IR	Portable Turbidimeter 0-1100 NTU/FNU including AMCO-Clear® calibration kit	600 320
KalKit Turb 430 IR	Calibration Standard Kit AMCO-Clear (0.02-10-1000 NTU)	600 560
pHotoFlex RB	Rech.batt.+ universal power plug for Turb 430 IR/ pHotoFlex	251300
pHotoFlex LS	LabStation for Turb 430 IR / pHotoFlex incl. rech.battery set	251301
LK 28 Set *	3 emtpy cuvettes for Turb 430 IR / pHotoFlex	251302

*larger bundles on request

8. Turbidity Measurement Combined with Photometry

For those, who need more than just turbidity measurement – e.g. in environmental monitoring – the „all in one instrument“ **pHotoFlex Turb** is suitable. It is another member of this new generation of field instruments for the measurement of turbidity, photometric parameters and pH.

More informations about the pHotoFlex and pHotoFlex Turb can be obtained in the Newsletter pHotoFlex and the Laboratory catalogue 2005.