

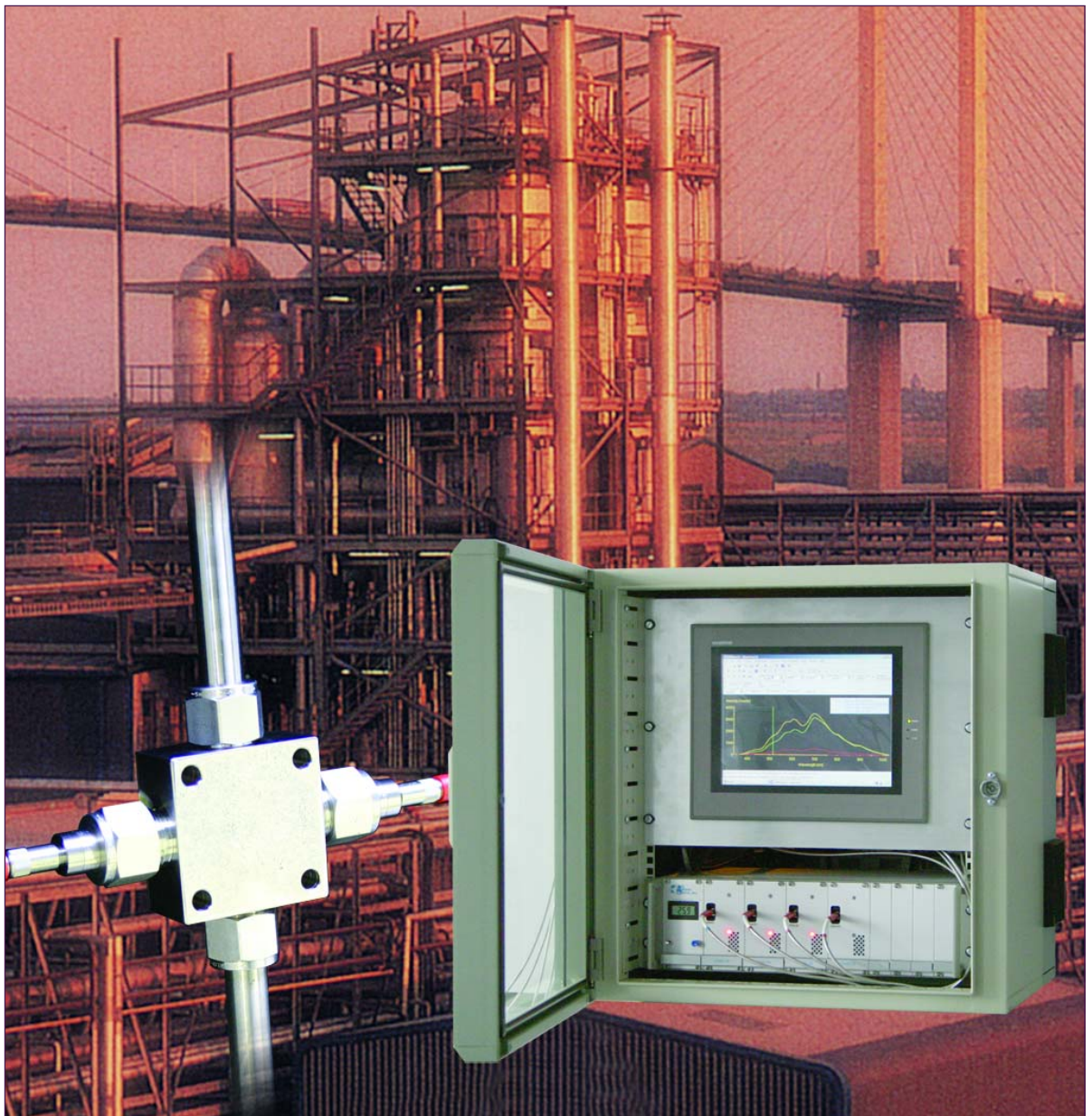
Lovibond® Colour Instruments



# On-line real time analysis of colour

*A new generation  
of on-line colorimeters*

## Lovibond® TA4-line Analyser



# Lovibond® TA4 On-line Analyser

## ON-LINE REAL TIME ANALYSIS OF COLOUR



For over 120 years The Tintometer Group has been associated with the design and production of innovative colour measurement systems for industries where colour is a factor in the quality of the product. Tintometer's latest development, the Lovibond® TA4 On-line Colour Analyser, is a system designed for the 'real time' continuous analysis of colour within a production process environment such as the edible oil or petroleum refinery. For example, in edible oils refining, process colour measurements are important both before and after the bleaching and filtration processes and as a final quality check after deodorisation just prior to tank storage.

### Control of Chlorophyll Concentration

The concentration of chlorophyll varies widely in oilseeds. The more chlorophyll present the shorter the shelf life of edible oils. Those with higher chlorophyll concentrations often require more heating to break down the chlorophyll. Monitoring oil in the pipeline before it is sent to the bleaching process allows the user to divert oils with a high chlorophyll content while oil within an acceptable range may proceed to the bleaching process.

### Disadvantages of colorimeters

Typically, on-line colorimeters are photometric instruments that function by measuring absorption at a few discrete wavelengths, chosen to characterise a process stream. These systems are limited to monitoring trends in spectral characteristics as opposed to absolute colour values. Also, when used with variable process streams there is no guarantee that the chosen wavelengths are the most appropriate for the current product.

### Technical Specification

Light source	Tungsten Halogen
Spectrometers	2048 element photodiode array with a wavelength range of 350 to 780 nm
Output Ports	4 - 20 mA (4 per channel) Network 10/100 USB Serial
Input Voltage	90 - 250 VAC auto sensing
Fibre optic cable length	Up to 75 metres

### Advantages of the TA4 On-line System

Tintometer has focussed a new generation of on-line analysers that use diode array spectrometers, which measures a near real time response across the entire visible spectrum, between 380 nm and 780 nm down to wavelength intervals as small as 1 nm.

The result is, the TA4 on-line is a highly accurate spectrophotometric system that can be used for the measurement of constituent concentrations, early detection of trace contaminants and quality assurance analysis. In addition, analytical results can be fed back for automatic process control and optimisation. Real-time analysis eliminates the delay in obtaining results, often avoiding costly rework of product processed out of specification.

The TA4 On-line can control up to four measurement points outputting, for each measurement point, up to 4 internationally recognised colour coordinate systems such as CIELab and industry specific colour scales as referenced by standardising bodies such as AOCS, DGF, ISO and ASTM. These include true Lovibond® RYBN, AOCS-Tintometer, Gardner, FAC, and Pt-Co (APHA) units. Related parameters such as beta carotene and chlorophyll concentrations/greenness can also be derived simultaneously for output. The TA4 On-line system employs fibre optics to keep the location of the key components and instrument away from the process environment.

### Benefits of the TA4 On-line

- Improved product quality
- Continuous process control
- Intervention at process changes
- Optimised chemical usage
- Elimination of human error
- Reduced product costs
- Higher product yields
- Near real-time information at low analytical cost



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