

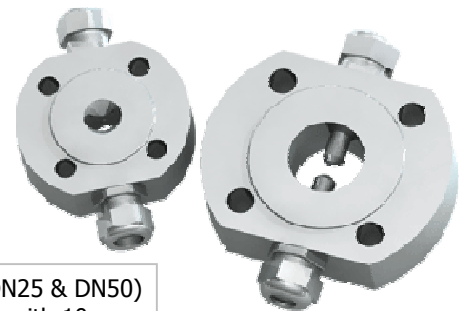
## Industrial Photometer

The Kemtrak DCP007NIR is an advanced dual wavelength photometer designed to accurately measure the concentration of liquids and gasses with near-infrared (NIR) absorbance from 1000 to 2000 nm.

Examples of NIR measurements include water, ethanol, sodium hydroxide, ethylene glycol, acetic acid and continuous fuel identification.

Optic fibers are utilized to pipe the light from within the DCP007NIR enclosure to the sampling point and back. This is a major benefit as all the electricity is kept within the analyzer enclosure permitting safe operation in even the most hazardous of environments. An additional benefit is that the light source is "cold" and does not affect the sample.

Optic fibres can be ordered in lengths up to 50m and are well suited for harsh industrial environments. Our standard fibers have a silicone-coated steel jacketing and can withstand temperatures up to 200 °C. A range of flow-cell manifolds are also available dependent upon the process and application.



DIN Flange (DN25 & DN50) sensor flanges with 10mm optical path length

### Features

<ul style="list-style-type: none"> <li>• 1000 - 2000 nm dual-wavelength detection*</li> <li>• IP65</li> <li>• Two alarms (high/low) and system fault monitoring</li> <li>• Analogue output (0-20/4-20 mA)</li> <li>• Easy to operate - four push buttons, user-friendly menu and alphanumeric display</li> <li>• Simple &amp; robust flowcell design using fibre optics - no electricity or heat near the sample</li> </ul>	<ul style="list-style-type: none"> <li>• Long life semiconductor light source</li> <li>• Overall dimensions: 220 x 120 x 100 mm (L x W x D)</li> <li>• Cleaning sequence control (relay output)</li> <li>• Supply voltage 110/240 VAC</li> <li>• PID Controller (pulse width modulated relay or 4-20 mA analogue output)</li> <li>• Relays are protected with PTC resistor fuses (reset by disconnection of power supply)</li> </ul>
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(\* wavelengths must be factory installed)

The Kemtrak DCP007NIR color & concentration analyzer consists of three components:

1. **Control Unit** - The control unit contain all electronics including light source and detectors.

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3. **Fibre Optics** - Industrial grade fibre optic assembly connects the control unit to the flow-cell.

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2. **Flow cell** - In-line (flow through) measurement cell.

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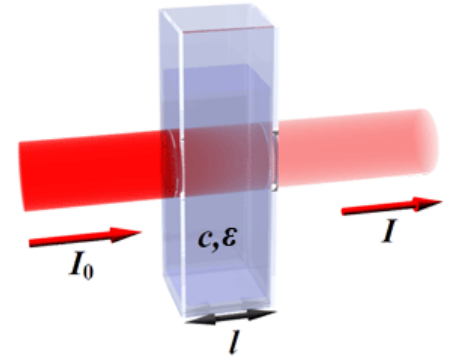


## Measuring Principle

The Kemtrak DCP007NIR uses fiber optics to shine a precisely focused monochromatic (single wavelength) light beam through the process medium and back to a silicon photo-detector.

The attenuation of the transmitted light beam caused by light absorbing substances in the process medium is mathematically described by the Beer-Lambert law.

Applying the Beer-Lambert law (below), the concentration of the sample can be calculated.



$$A = \epsilon l c$$

Where:

A = absorbance (= - log transmittance)

$\epsilon$  = molar absorptivity coefficient

l = optical path length

c = concentration of absorbing species

