

# Lovibond® Colour Measurement Tintometer® Group



## PFXi-195/2

Colour Measurement for Petroleum Oils & Fats



- Integrated RCMSi Technology for Remote Calibration
- Automatic and Non-subjective Colour Measurement
- Consistent Data Compliant with International Standards
- Very Rugged, Chemically Resistant, Steel Construction

Part Number: 1371952

### Integrated RCMSi Technology for Remote Calibration

The PFXi series of spectrophotometric colorimeters introduces a unique concept in liquid colour control: RCMSi technology (Remote Calibration & Maintenance Service via internet). You can now benefit from the capability for remote calibration and servicing via the internet - eliminating any costs and time delays associated with servicing and guaranteeing compliance with standards.

Watch the RCMSi video to see how easy the procedure is.

### Automatic and Non-subjective Colour Measurement

The PFXi range provides absolute results. Automatic instruments communicate in clear terms, accurately and reliably with no opportunity for human error or misjudgement.

### Consistent Data Compliant with International Standards

The PFXi range automatically measures colour and displays results directly, either according to the traditional grading scales that have been widely adopted as industry standards for colour assessment and control, or in terms of internationally recognised CIE values and spectral data.

### Very Rugged, Chemically Resistant, Steel Construction

The robust steel construction enables you to use the PFXi even in the harshest of environments.

### Easy Maintenance with Removable Sample Chamber

The instruments include a robust steel sample chamber which is easily removed so you can clean it or replace it should spillage occur.

### Extensive and Flexible Choice of Colour Scales

You can choose from a selection of over 20 different, internationally recognised scales in a variety of combinations.

### Remote Upgrade Facility

Uniquely, however, you do not need to make the choice of scales at point of purchase. The PFXi instruments are upgradeable in the field - so you can add a scale at a later date.

### Calculation and Description of "Off-Hue" Status

This is a useful facility that enables you to reveal whether the sample colour is characteristic of the selected scale. Where appropriate, it includes a description of hue difference (eg. redder, greener), relative saturation (stronger or weaker) and an off-hue factor (a relative measure of the distance away in colour space of the sample colour from the "true" colour scale).

### Supplied with Colour Control Software for Data Analysis

The software allows you to generate spectral and CIE diagrams as well as analyse spectral data. It also permits direct control of the instrument from the computer.

## Conformance Standard, Cells and Spare Bulb Included

For regular conformance checking, certified colour reference standards are also available for routine calibration and verification of test data. Conformance filters are supplied with a Certificate of Conformity - giving you the assurance of their colour values and confirmation that they were manufactured under the control of The Tintometer Ltd's ISO 9001 quality system.

## Output Conforming to GLP Including Date, Time, Sample & User ID

The adaptable software and design allow you to configure the PFXi-195 to your requirements. You can set the display language, program the instrument to only display the scales of interest and restrict access to the menu system.

## Accommodates a Wide Range of Sample Cells and Tubes

As well as standard colorimetry cells, the PFXi-195 can be used with a range of tubes and standards, flow-through and disposable spectrophotometer cells.

## Extensive range of accessories

A thermal printer, sample chamber, additional cells, replacement lamps and conformance filters represent some of the additional accessories you can obtain for the PFXi-195.

Note: When dealing with materials such as fats and waxes whose temperature needs to be maintained at a constant temperature +10°C above the "Cloud Point" of the material, the PFXi-880, -950 & -995 series should be considered. These are available with an additional critical feature, an optional integrated heater unit.

## Industry

Chemical Industry | Food and Beverage Industry | Industries Others | Oil and Gas | Pharmaceutical Industry

## Application

Petroleum Oils and Waxes

## PFXi-195/2

The PFXi series of spectrophotometric colorimeters introduces a unique concept in liquid colour control: RCMSi technology. You can benefit from the capability for remote calibration and servicing via the internet - saving the cost and time associated with servicing and guaranteeing compliance with standards.

The PFXi range is supplied with a full range of colour scales for specific markets including, but not limited to, Petroleum, Edible Oils, Pharmaceuticals, Brewing and Honey. Users can upgrade scales remotely at any time.

Note: When dealing with materials such as fats and waxes whose temperature needs to be maintained at a constant temperature +10°C above the "Cloud Point" of the material, the PFXi-880, -950 & -995 series should be considered. These are available with an additional critical feature, an optional integrated heater unit.

## Technical Data

|                          |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|
| Applicable Standard      | ASTM D156                                                                         |
|                          | ASTM D1209                                                                        |
|                          | ASTM D1500                                                                        |
|                          | ASTM D6045                                                                        |
|                          | ASTM E308                                                                         |
|                          | ISO 2049                                                                          |
|                          | ISO 6271                                                                          |
| Colour Type              | Transparent                                                                       |
| Display                  | 240 x 128, back-lit graphic display, (white on blue)                              |
| Path Length              | 0.1 - 50 mm                                                                       |
| Measuring Geometries     | 0° - 180° Transmission                                                            |
| Interfaces               | USB                                                                               |
|                          | RS 232                                                                            |
|                          | Ethernet                                                                          |
| Detector                 | blue enhanced photodiode                                                          |
| Internal Storage         | 100,000+ Messungen                                                                |
| Power Supply             | Universal (90 - 240 VAC), via external power supply                               |
| Measuring Principle      | 9 interference filters                                                            |
| Measurement Time         | less than 30 seconds                                                              |
| Sample Chamber           | max 50mm cells                                                                    |
| Keypad                   | 23 key tactile membrane keypad; washable polyester with audible feedback          |
| Instrument Housing       | Fabricated steel with tough, textured paint finish                                |
| Spectral Range           | 420 - 710 nm                                                                      |
| Bandwidth                | 10 nm                                                                             |
| Repeatability            | ±0.0004 (CIE xy Chromaticity) on measurements of de-ionised water                 |
| Baseline Calibration     | Single key press; fully automated                                                 |
| Illuminants              | CIE Illuminant A                                                                  |
|                          | CIE Illuminant B                                                                  |
|                          | CIE Illuminant C                                                                  |
|                          | CIE Illuminant D65                                                                |
| Portability              | Benchtop                                                                          |
| Observer                 | 2°, 10°                                                                           |
| Touchscreen              | false                                                                             |
| Compliance               | CE                                                                                |
|                          | RoHS                                                                              |
|                          | WEEE                                                                              |
| Languages User Interface | English, German, French, Italian, Portuguese, Spanish, Russian, Chinese, Japanese |
| Dimensions               | 435 x 170 x 195 mm                                                                |
| Weight                   | 6.8 kg                                                                            |

## Delivery Scope

- PFXi Series Instrument
- External Power Supply
- Set of 3 Power Leads (UK, European and United States)
- USB and LAN Cable
- Quick Start Guide
- CD ROM (Containing Windows® Control Software and Manuals)
- RCMSi Starter Pack
- Certificate of Conformity
- Accessory Box with 5 Volt Halogen Lamp, Conformance Filter, 1 x W600/OG/33 Cell, 1 x W600/OG/50 cell .

## Accessories

| Title                                                       | Part Number |
|-------------------------------------------------------------|-------------|
| Holder for standard spectrophotometer cells (12.5 mm width) | 131907      |
| Adapter for 10.65 mm tubes                                  | 132800      |
| Adapter for 33 mm tubes                                     | 132810      |
| Dark sample cell for CIE values, 1 mm path length           | 132820      |
| Replacement Sample Chamber                                  | 133830      |
| RCMSi Certified Calibration Pack - Full                     | 134410      |
| RCMSi Certified Calibration Pack - Conformance              | 134420      |
| RCMSi Certified Calibration Pack - Starter                  | 134430      |
| PFXi IQ/OQ Documentation                                    | 137680      |
| Flow through control software                               | 137690      |
| PFXi Thermal Printer                                        | 137891      |
| PFXi Lamp 5V                                                | 138180      |
| Tube, 10.65 mm diameter                                     | 352290      |
| Tube, 33 mm diameter for ASTM Color                         | 352300      |
| Flow through cell, 50 mm path length                        | 658010      |
| Flow through cell, 10 mm path length                        | 658020      |

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# Lovibond® Colour Measurement

Tintometer® Group



Colour Management for Industry

## Lovibond® PFXi-195 Series

Dark Oils & Fats • Liquid Chemicals & Industrial Oils  
Petroleum Oils & Fuels • Beers, Malts & Caramels • Pharmaceutical Solutions  
Industrial Oil & Surfactants • Sugar Solutions, Syrups & Honey  
Optically Clear Samples • Water & Waste Waters

Accurate, efficient spectrophotometric colorimeters

[www.lovibondcolour.com](http://www.lovibondcolour.com)

Get it from your authorized distributor: [www.labequip.com](http://www.labequip.com)



[ask@labequip.com](mailto:ask@labequip.com)

# Lovibond® PFXi-195 Series

- RCMSi Remote Calibration & Maintenance Service via internet
- USB & LAN Interface
- Large clear LCD screen for ease of use and ability to display graphs and data in a wide variety of languages
- Extensive yet flexible choice of standard colour scales
- Remote upgrade facility for adding scales once in service
- Allows calculation and description of off-hue status
- Gives closest match to stored references
- Generates a customised colour scale from reference samples
- Robust steel construction with excellent chemical resistance
- Easy maintenance with removable sample chamber
- Supplied with colour control software for data analysis
- Output conforming to GLP including date, time, sample & user ID
- Accommodates a range of sample cells and tubes

## Objective Colour Data for Process Control

The Lovibond® PFXi-195 Series is a highly efficient colorimeter for optically clear samples that meets the demand for consistent and reliable colour data. It removes all subjectivity involved in colour grading, supplying unbiased readings that are unaffected by operator or environment.

## Comprehensive Selection of Standard Colour Values

The PFXi-195 Series of colorimeters automatically measure colour and display the results directly, either according to the traditional grading scales that have been widely adopted as industry standards for colour assessment and control, or in terms of internationally recognised CIE values and spectral data.



| Colour Scale                                      | References                        | Scope                                                                                                                                                                                               | Range                                                                  |
|---------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| ADMI (full spectrum and tristimulus filter)       | American Standard Methods 2120 E  | Coloured waters and tinted liquids                                                                                                                                                                  | 1 – 500                                                                |
| Acid Wash Color                                   | ASTM D848                         | Quality testing of industrial aromatic hydrocarbons                                                                                                                                                 | 1 – 14                                                                 |
| ASBC                                              |                                   | American standard for colour grading of beers; derived from EBC Colour                                                                                                                              | 1.2 – 10.6 (extended range by dilution and reduction in path length)   |
| ASTM Color                                        | ASTM D1500, D6045, ISO 2049       | A wide range of petroleum products including lubricating oils, heating oils and diesel fuel oils                                                                                                    | 0.5 – 8 units                                                          |
| Chinese Pharmacopoeia Colour Series <sup>1)</sup> | CP Appendix IX A                  | Pharmaceutical solutions                                                                                                                                                                            | YG1 – 10; Y1 – 10; OY – 10; OR1 – 10; BR1 – 10                         |
| EBC Colour                                        | Analytica                         | Beers, malts and caramels and similarly coloured liquids. Based either on absorption at 430 nm or CIE x y chromaticity co-ordinates                                                                 | 2 – 27 units (extended range by dilution and reduction in path length) |
| European Pharmacopoeia Colour Series              | Ph. Eur. Method 2.2.2             | Pharmaceutical solutions                                                                                                                                                                            | R1 – 7; Y1 – 7; B1 – 9; BY1 – 7; GY1 – 7                               |
| FAC Color                                         | AOCS Cc 13a-43                    | Approved by the Fats Analysis Committee of the American Oil Chemists Society for grading dark coloured oils, fats and tallowes.                                                                     | 1 – 45 (odd numbers)                                                   |
| Gardner Color                                     | ASTM D1544, D6166, AOCS Td 1a,    | Chemicals and oils ranging from pale yellow to red, such as resins, varnishes, drying oils, lecithins and fatty acids                                                                               | 1 – 18 units                                                           |
| Hess-Ives Color Units                             | DGK F050.2                        | Chemicals and surfactant liquids                                                                                                                                                                    |                                                                        |
| Honey Colour (Pfund Equivalents)                  |                                   | Commercial honeys, ranging from pale yellow through amber to deep red                                                                                                                               | 0 – 115 mm Pfund                                                       |
| ICUMSA Colour                                     | ICUMSA GS1-7, ICUMSA GS2/3-9      | Sugar solutions & syrups                                                                                                                                                                            |                                                                        |
| Iodine Colour                                     | DIN 6162                          | Solvents, plasticisers, resins, oils and fatty acids ranging from yellow to brown                                                                                                                   | 1 – 500 units                                                          |
| Klett Color (blue filter KS-42)                   | AOCS Dd 5-92                      | Detergents and surfactants                                                                                                                                                                          | 0 – 1000 units                                                         |
| Pt-Co/Hazen/APHA Scale                            | ASTM D1209, D5386                 | Water and other clear liquids such as plasticisers, solvents and petroleum spirits                                                                                                                  | 0 – 500 mg Pt/l                                                        |
| Rosin, US Naval Stores <sup>1)</sup>              | ASTM D509                         | Rosins varying in colour from yellow to reddish orange                                                                                                                                              | XC – D + FF                                                            |
| Saybolt Color                                     | ASTM D156, D6045, JIS K 2580      | Light coloured petroleum products including aviation fuels, kerosine, white mineral oils, hydrocarbon solvents and petroleum waxes                                                                  | –16 (darkest) to +30 (lightest)                                        |
| Series 52 (Brown)                                 |                                   | Beers, whiskies and sugar solutions                                                                                                                                                                 | 1– 38 units                                                            |
| Yellowness Index <sup>1)</sup>                    | ASTM D1925, E 313                 | Determination of the degree of yellowness under daylight illumination. Calculated from X Y Z tristimulus values                                                                                     |                                                                        |
| US Pharmacopoeia Color                            | USP (631) Color and Achromaticity | Pharmaceutical solutions                                                                                                                                                                            | A – T                                                                  |
| CIE Values                                        | ASTM E308                         | X Y Z tristimulus values; x y Y chromaticity co-ordinates; CIE L*a*b* colour space <sup>2)</sup> ; ΔE colour difference; L*C*h colour space <sup>2)</sup> ; Hunter L a b colour space <sup>2)</sup> | Defined by spectrum locus                                              |
| Spectral data (420 – 710 nm)                      |                                   | Transmittance (full spectrum and at specified wavelengths)<br>Optical density (full spectrum and at specified wavelengths)                                                                          | 0 – 100%<br>0 – 2.5                                                    |

<sup>1)</sup> These scales are not included on standard instrument versions but are available as a colour scale upgrade  
<sup>2)</sup> included as standard on PFXi-195/9 only

| Version    | Application                        | Standard Colour Scales                                                                                                                |
|------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| PFXi-195/1 | Liquid chemicals & industrial oils | Pt-Co/Hazen/APHA, Gardner, Iodine, CIE values, spectral data                                                                          |
| PFXi-195/2 | Petroleum oils & fuels             | Saybolt, ASTM Color, Pt-Co/Hazen/APHA, CIE values, spectral data                                                                      |
| PFXi-195/3 | Dark oils & fats                   | FAC, Gardner, CIE values, spectral data                                                                                               |
| PFXi-195/4 | Beers, malts & caramels            | EBC (CIE & 430 nm), ASBC (CIE & 430 nm), Series 52 (Brown), CIE values, spectral data                                                 |
| PFXi-195/5 | Pharmaceutical solutions           | European Pharmacopoeia (includes automatic selection of colour series), US Pharmacopoeia, Pt-Co/Hazen/APHA, CIE values, spectral data |
| PFXi-195/6 | Industrial oils & surfactants      | Klett Color (blue filter KS-42), Pt-Co/Hazen/APHA, Hess-Ives Color Units, CIE values, spectral data                                   |
| PFXi-195/7 | Sugar solutions, syrups & honey    | ICUMSA Colour (420, 560, 710 nm), Honey Colour (Pfund Equivalents), Series 52 (Brown), CIE values, spectral data                      |
| PFXi-195/8 | Waters & waste waters              | ADMI (spectral & tristimulus filter methods), Pt-Co/Hazen/APHA, CIE values, spectral data                                             |
| PFXi-195/9 | Transparent samples                | CIE values (standard selection), L*C*h colour space, Hunter L a b colour space, spectral data                                         |

Colour scale upgrades give the flexibility to meet individual requirements, enabling additional colour scales to be added to standard instrument versions either at the time of order or remotely once the instrument is in service. For product types that are incompatible with standard colour scales, the PFXi-195 allows users to build up a customised scale from a series of reference samples and then to obtain a closest match to the stored references.

### RCMSi Technology (Remote Calibration & Maintenance Service via internet)

The PFXi range includes new RCMSi technology (Remote Calibration & Maintenance Service via internet). This unique feature allows a calibrated measurement to be taken using an ISO 17025 certified liquid standard. The spectral response is transmitted to the Lovibond® secure calibration server. On completion of this procedure, a traceable calibration certificate is made electronically available to the user. The RCMSi system not only gives the user added confidence that the instrument is working within tight ISO standards but also reduces the need for expensive on-site servicing and preventative maintenance of the unit.

### Colour Testing Made Simple

The PFXi-195 Series provides easy to use, automatic instruments that require no special skills to operate. The built-in menu guides users through the selection of operating parameters such as colour scale. Thereafter, readings are made with a single key press, taking less than 20 seconds to complete. Built-in help files are available.

### Easily Customised to User Specifications

Adaptable software and design allow users to configure the PFXi-195 Series to their requirements. Operators can set the language for display, program the PFXi-195 to show only those scales of interest or restrict access to the menu system. As well as standard colorimetry cells, the PFXi-195 can be used with a range of tubes and standard, flow-through and disposable spectrophotometer cells.



Lovibond® PFXi-195 Series

### Calculation and Description of Off-Hue Status

The PFXi-195 off-hue status is a useful facility that reveals whether the sample colour is characteristic of the selected scale. Where appropriate, it includes a description of hue difference (eg. redder, greener), relative saturation (stronger or weaker) and an off-hue factor (a relative measure of the distance away in colour space of the sample colour from the ‘true’ colour scale).

### Suited to Laboratory or Production Environments

Comprehensive facilities for colour management make the PFXi-195 Series an ideal choice for the laboratory. However, with excellent calibration stability, password protection for tamper proof control and simple operation, the PFXi-195 also supports the migration of quality control to the manufacturing area, making it a cost effective option for dedicated production testing. For easy maintenance, the Lovibond® PFXi-195 Series includes a robust steel sample chamber, which is simply removed and cleaned if a spillage occurs, and the precision filament lamp is easily accessed and changed from outside the instrument.

### Optimised Use of Colour Data

Data sets can be saved in the instrument, printed out or automatically downloaded to a PC where they can be processed and stored for future analysis, traceability and trend monitoring. The colour control software supplied with the PFXi-195 enables the generation of spectral and CIE diagrams as well as analysis of spectral data. It also permits direct control of the instrument from the computer.

### Confidence in Colour Measurement

For regular conformance checking, certified colour reference standards are also available for routine calibration and verification of test data. Conformance filters are supplied with a Certificate of Conformity stating their colour values and confirming that they have been manufactured and inspected under the control of The Tintometer Ltd’s ISO 9001 quality system. Certified colour reference standards are supplied with full traceability to internationally recognised standards, either ISO/IEC 17025 (ASTM Color, Saybolt and Gardner Color) or the ISO 9001 quality system (Pt-Co Units).

# Lovibond® PFXi-195

## PFXi-195 Technical Specification

|                      |                                                                                         |
|----------------------|-----------------------------------------------------------------------------------------|
| Measuring principle  | 9 interference filters                                                                  |
| Spectral response    | 420 – 710 nm                                                                            |
| Bandwidth            | 10 nm                                                                                   |
| Repeatability        | on measurements of de-ionised water                                                     |
| Chromaticity (x y)   | +/- 0.0004                                                                              |
| ΔE                   | 0.4                                                                                     |
| Measurement time     | Less than 30 seconds                                                                    |
| Baseline calibration | Single key press; fully automated                                                       |
| Light source         | 5 Volt, 10 Watt Tungsten Halogen                                                        |
| Illuminants          | CIE Illuminant A, B, C, D65                                                             |
| Observer             | 2°, 10°                                                                                 |
| Path length          | 0.1 – 50 mm                                                                             |
| Interfaces           | USB, LAN, RS232                                                                         |
| Data storage         | 100,000+ Measurements                                                                   |
| Input voltage        | Universal (90 – 240 Vac), via external power supply                                     |
| Compliance           | CE, RoHS, WEEE                                                                          |
| Display              | 240 x 128, back-lit graphic display, (white on blue)                                    |
| Keypad               | 23 key tactile membrane keypad;<br>washable polyester with audible feedback             |
| Languages            | English, French, German, Italian, Portuguese,<br>Russian, Spanish, Chinese and Japanese |
| Instrument housing   | Fabricated steel with tough, textured paint finish                                      |
| Dimensions           | Width 435, depth 195, height 170 (mm)                                                   |
| Weight               | 6.8 kg                                                                                  |

## Accessories

| Version    | Optical Glass Cells             |
|------------|---------------------------------|
| PFXi-195/1 | 1 x 10 mm, 1 x 50 mm            |
| PFXi-195/2 | 1 x 33 mm, 1 x 50 mm            |
| PFXi-195/3 | 1 x 10 mm                       |
| PFXi-195/4 | 1 x 10 mm, 1 x 25 mm            |
| PFXi-195/5 | 1 x 40 mm, 1 x 50 mm            |
| PFXi-195/6 | 1 x 10 mm, 1 x 40 mm, 1 x 50 mm |
| PFXi-195/7 | 1 x 10 mm, 1 x 50 mm            |
| PFXi-195/8 | 1 x 10 mm, 1 x 50 mm            |
| PFXi-195/9 | 1 x 10 mm                       |

\* Whenever cells are subjected to thermal shock, only borosilicate glass cells should be used.

## Ordering Information

| PFXi-195 Instruments                                             | Order Code |
|------------------------------------------------------------------|------------|
| PFXi-195/1 (Pt-Co, Gardner, Iodine)                              | 1371951    |
| PFXi-195/2 (Saybolt, ASTM Color, Pt-Co)                          | 1371952    |
| PFXi-195/3 (FAC, Gardner)                                        | 1371953    |
| PFXi-195/4 (EBC (CIE & 430 nm), ASBC (CIE & 430 nm), Series 52)  | 1371954    |
| PFXi-195/5 (EP Colour (includes auto selection), USP, Pt-Co)     | 1371955    |
| PFXi-195/6 (Klett Color (blue filter KS-42), Pt-Co, Hess-Ives)   | 1371956    |
| PFXi-195/7 (ICUMSA (420, 560, 710 nm), Honey Colour, Series 52)  | 1371957    |
| PFXi-195/8 (ADMI (spectral & tristimulus filter methods), Pt-Co) | 1371958    |
| PFXi-195/9 (full range of CIE values)                            | 1371959    |

## Colour Scale Upgrades (include required cell)

|                                                             |        |
|-------------------------------------------------------------|--------|
| Acid Wash Color (ASTM D848)                                 | 132950 |
| ASTM Color                                                  | 132840 |
| Chinese Pharmacopoeia                                       | 132850 |
| Gardner Color                                               | 132860 |
| Klett Color (blue filter KS-42); order with instrument only | 132930 |
| Pt-Co/Hazen/APHA scale                                      | 132880 |
| Rosin, US Naval Stores                                      | 132890 |
| Saybolt Colour                                              | 132900 |
| Yellowness Index                                            | 132910 |
| CIE L*C*h                                                   | 132920 |

Many other Scale Upgrades are available.  
Please contact sales@tintometer.com for details.

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## Spares & Optional Accessories

|                                                                                              |        |
|----------------------------------------------------------------------------------------------|--------|
| PFXi-195 Lamp 5V                                                                             | 138180 |
| Replacement sample chamber                                                                   | 133830 |
| Holder for standard spectrophotometer cells (12.5 mm width)                                  | 131907 |
| Adapter for 10.65 mm tubes                                                                   | 132800 |
| Adapter for 33 mm tubes                                                                      | 132810 |
| Tube, 10.65 mm diameter                                                                      | 352290 |
| Tube, 33 mm diameter for ASTM Color                                                          | 352300 |
| Acid Wash Tube                                                                               | 352220 |
| Dark sample cell for CIE Values, 1 mm path length<br>(W600/OG/10 mm cell with a 9 mm spacer) | 132820 |
| Plastic, disposable cells, 10 mm path length, pack of 100 *                                  | 132770 |
| Plastic, disposable cells, 33 mm path length, pack of 50 *                                   | 352091 |
| Plastic, disposable cells, 50 mm path length, pack of 50 *                                   | 352101 |
| Flow through control software (for use with PC)                                              | 137690 |
| Flow through cell, 50 mm path length *                                                       | 658010 |
| Flow through cell, 10 mm path length *                                                       | 658020 |
| PFXi-195 IQ/OQ Documentation                                                                 | 137680 |

\* For use with holder for standard spectrophotometer cells

## Conformance Filters (nominal values quoted)

|                                                                          |        |
|--------------------------------------------------------------------------|--------|
| EBC Colour, set of 5 filters (4, 9.5, 15, 18, 25)                        | 139400 |
| FAC Color, set of 5 filters (7, 13, 15, 29, 39)                          | 139700 |
| EP Red, set of 2 filters (R2, R6)                                        | 139410 |
| EP Yellow, set of 2 filters (Y2, Y4)                                     | 139420 |
| EP Brown, set of 2 filters (B2, B5)                                      | 139430 |
| EP Brown/Yellow, set of 2 filters (BY3, BY5)                             | 139440 |
| EP Green/Yellow, set of 2 filters (GY2, GY5)                             | 139450 |
| Honey Colour (Pfund Equivalents), set of 5 filters (15, 30, 60, 85, 100) | 139370 |
| Klett (blue filter KS-42), set of 5 filters (21, 66, 162, 318, 616)      | 139710 |
| US Pharmacopoeia, set of 3 filters (G, H, P)                             | 139460 |
| Single filter, certificated (select scale & nominal value from above)    | 109970 |
| User specified filter (specify scale and value)                          | 109980 |

## Certified Reference Materials, 500 ml (nominal values quoted)

|                                                            |        |
|------------------------------------------------------------|--------|
| ASTM Color <0.5, (certified to ISO/IEC 17025)              | 134290 |
| ASTM Color 1, (certified to ISO/IEC 17025)                 | 134000 |
| ASTM Color 3, (certified to ISO/IEC 17025)                 | 134010 |
| ASTM Color 5, (certified to ISO/IEC 17025)                 | 134020 |
| ASTM Color 7, (certified to ISO/IEC 17025)                 | 134030 |
| Gardner Color 2, (certified to ISO/IEC 17025)              | 134200 |
| Gardner Color 5, (certified to ISO/IEC 17025)              | 134210 |
| Gardner Color 8, (certified to ISO/IEC 17025)              | 134220 |
| Pt-Co 5 mg Pt/l, certified under ISO 9001 quality system   | 134140 |
| Pt-Co 10 mg Pt/l, certified under ISO 9001 quality system  | 134150 |
| Pt-Co 15 mg Pt/l, certified under ISO 9001 quality system  | 134160 |
| Pt-Co 30 mg Pt/l, certified under ISO 9001 quality system  | 134170 |
| Pt-Co 50 mg Pt/l, certified under ISO 9001 quality system  | 134180 |
| Pt-Co 100 mg Pt/l, certified under ISO 9001 quality system | 134190 |
| Pt-Co 500 mg Pt/l (certified to ISO/IEC 17025)             | 462803 |
| Saybolt Color -10, (certified to ISO/IEC 17025)            | 134040 |
| Saybolt Color 0, (certified to ISO/IEC 17025)              | 134050 |
| Saybolt Color +12, (certified to ISO/IEC 17025)            | 134060 |
| Saybolt Color +25, (certified to ISO/IEC 17025)            | 134070 |
| Service pack for RCMSi                                     | 137380 |



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