

Palintest

Water Analysis Technologies



MULTIPARAMETER PHOTOMETERS

POOL AND SPA WASTEWATER DRINKING WATER PROCESS WATER SOIL

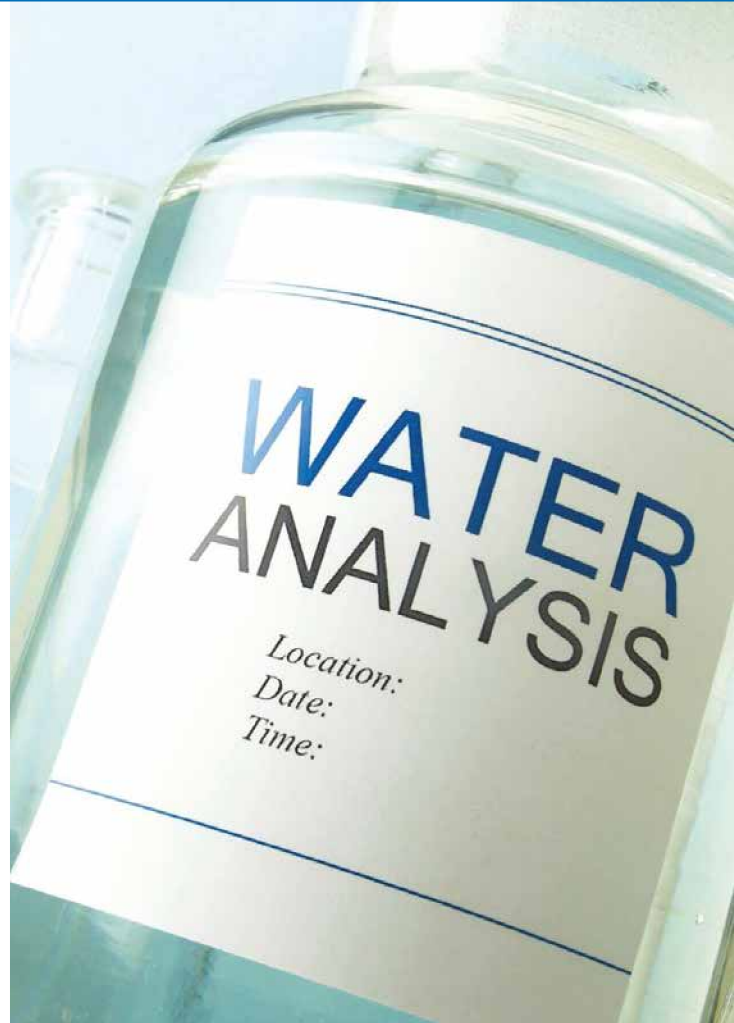
Who we are

Palintest aim to be the best global provider of water and environmental analysis equipment that enable critical water quality decisions to be made with confidence

Palintest develops, manufactures and supports a comprehensive range of advanced water and environmental testing equipment. From our United Kingdom headquarters we export to over 100 countries across the globe. Our products are used in a wide variety of applications to protect the environment and safeguard public health.

Part of the successful Halma plc. since 1983, our roots begin in the 1870s with the Wilkinson & Simpson Ltd. manufacturing facility and include Dr Thomas Palin's development of the DPD method, the standard approach for disinfection control worldwide.

Palintest today has a worldwide workforce with branch offices in China, Australia, USA and the Middle East. For your local Palintest contact see the back cover of this brochure or visit www.palintest.com.



A HALMA COMPANY

Photometry and Nephelometry

Photometric or colorimetric analysis is an incredibly powerful yet simple-to-use technique. Allowing a wide range of parameters to be accurately determined, it is ideal for providing critical information required for drinking water, wastewater, environmental and process applications.

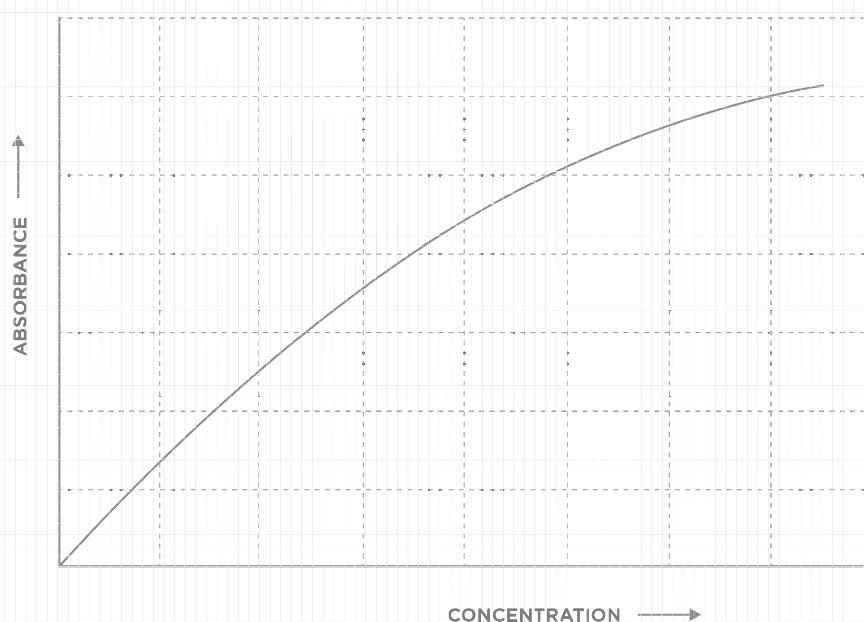
Key benefits of photometry:

Stable and repeatable calibration – no need for frequent re-calibration compared to electrochemical approaches

Low detection limits – measure even the slightest concentrations for key water quality parameters

Visible analysis – the colour may be visible to the naked eye but a photometer removes the subjectivity.

Palintest has been manufacturing electronic photometers for many years and has developed the technology to have low power consumption, self-diagnostic functionality and wireless connectivity.





Raw water abstraction

Drinking water originates from a variety of sources; fresh water extracted from rivers and lakes, seawater treated using desalination or a natural wells and springs used for local supply.

Surface waters are vibrant supporters of natural life, not all desirable in drinking water hence the need to treat.

2 Drinking Water Treatment

Drinking water treatment ensures the raw water abstracted is suitable for human consumption. This can involve flocculation and clarification, filtration and disinfection. Once the water adequately is disinfected, the water can be distributed and may be further tested at the point of use.

3 Domestic Wastewater Treatment

The treatment of domestic wastewater aims to reduce organic material so it is suitable for discharge back into the environment. Removing organics along with reducing nutrients are the primary goals of domestic wastewater treatment.

4 Industrial Wastewater Effluent

Industrial wastewater has the same aim as domestic wastewater treatment but can have unique additional contaminants. Water discharged into the environment must be monitored for impact on oxygen demand to protect aquatic life.

5 Managing Processes involving Water

Many processes such as food & beverage production and energy generation require water as an essential part of the process. Testing throughout the process ensures maximum efficiency and yield.

Choose your Multiparameter photometer

| Features | Photometer 7100 | Photometer 7500 Bluetooth® | Photometer 8000 |
|---------------------------------------|-----------------|----------------------------|-----------------|
| Battery Power | • | • | • |
| Number of Methods | > 100 | > 100 | > 100 |
| Sample ID | • | • | • |
| Frequently Used Test List/Hot Keys | • | • | • |
| Multiple Date Formats | • | • | • |
| Automatic Method Set-Up | • | • | • |
| Timer | • | • | • |
| Automatic Read on Time Elapse | • | • | • |
| Date/Time | • | • | • |
| Backlight with User Control | • | • | • |
| Accessible Optical Bench for Cleaning | • | • | • |
| Automatic Cuvette Centering | • | • | • |
| Numeric/Select Key Interface | • | • | |
| Connectivity | | Bluetooth SMART & USB | RS232/USB |
| Mains Power | | Via USB port | • |
| Bi-directional serial communication | | • | • |
| User Defined Tests | | 30 | 50 |
| CSV Format Data Download | | • | • |
| User Access Control Lock | • | • | • |
| Result Log | | • | • |
| Drag and Drop Method Update | | • | |
| RS232 Connectivity | | | • |
| Barcode reader for Tubetests® | | | • |
| Touchscreen interface | | | • |
| User Favourite Test List | | | • |
| Selectable Data Download | | • | • |
| Memory Capacity | 500 | 500 | 1000 |



Photometer 7500

The Photometer 7500 is our most popular photometer due its versatility and simplicity of use. Reliable and intuitive it has been designed to simplify the process of testing and managing water quality data



Manage your data via Palintest Aqua Pal App or Web Portal. The waterproof USB connection enables you to power the instrument from the mains.

Features include:

Effortlessly store your data and transfer them to a smart phone or tablet with Bluetooth® SMART connectivity

Downloadable data log with 500 results (including time and date of test)

Develop your own tests - load them via the USB port into your photometer with a simple software tool



Technical Specification

| | |
|------------------------------------|---|
| Instrument Type | Dual light source photometer offering direct-reading of pre-programmed test calibrations, Absorbance and Transmittance. |
| Peak Wavelengths | 450nm, 500nm, 550nm, 570nm, 600nm, 650nm |
| Accuracy | ± 1.0% T |
| Display | 320 x 240 pixel LCD with backlight and contrast adjustment |
| User Interface | On-screen prompts available in English, French, Spanish, German, Italian, Turkish and Mandarin (Chinese). |
| Size (W x L x H) and weight | 150 x 250 x 70mm, 975g |
| IP Rating | IP67 |
| Power Supply | 3 x 1.5v 'AA' batteries (typically 40 hours), mains power delivered by USB port |
| Connectivity | Palintest Bluetooth SMART (4.0) profile and USB for data download |
| User Defined Methods | Up to 30 additional methods |
| Memory Capacity | Up to 500 data sets. Each data set includes date, time, Sample ID, Operator ID, method number, method name, result, units |
| Test Cuvettes | Automatic centering for cylindrical cuvettes from 13 – 20mm OD |

Kit contents

| |  |  |  |
|---|---|--|---|
| | PTBH 7500 Photometer 7500 Bluetooth Standard Kit | PTBR 7500 Photometer 7500 Bluetooth Benchtop Kit | PTBW 7500 Photometer 7500 Bluetooth Engineers Kit |
| Photometer 7500 Bluetooth | • | • | • |
| Cuvettes | 8 | 10 | 8 |
| Cuvette rack | | • | • |
| Lint free cloth | • | • | • |
| 20ml syringe | | | • |
| 10ml syringe | • | • | • |
| Dilution Tube | • | • | 2 |
| Cuvette Brush | • | • | • |
| Crush/stir rod | • | • | • |
| USB Lead | • | • | |
| Waterproof USB Lead | | | • |
| USB Power Adaptor | | • | • |
| De-ion pack | | | • |
| Multiparameter (pH, EC, TDS, Salinity) Pocket Sensor | | | • |
| pH and Conductivity Calibration Solutions | | | • |
| Check Standard Set | | | • |
| Hard Carry Case | • | | |
| Transport Carton | | • | |
| IP67 Carry Case | | | • |

Ordering Information

| | |
|-----------|---|
| PTBW 7500 | Photometer 7500 Bluetooth Engineers Kit |
| PTBH 7500 | Photometer 7500 Bluetooth Standard Kit |
| PTBR 7500 | Photometer 7500 Bluetooth Benchtop Kit |



Photometer Reagents

Photometer tablet reagents are available in two general pack sizes, the Starter Pack (PM code) and the Replacement Pack (AP code).

| Name | Range | Starter Pack (50 tests) | Replacement Pack (250 tests) |
|---|--------------------------------|----------------------------|---------------------------------|
| M – Alkalinity (Alkaphot M™) | 0 – 500 mg/l CaCO ₃ | PM 250 | AP 250 |
| P – Alkalinity (Alkaphot P™) | 0 – 500 mg/l CaCO ₃ | PM 251 | AP 251 |
| Total Alkalinity (Alkaphot®) | 0 – 500 mg/l CaCO ₃ | PM 188 | AP 188 |
| Aluminium | 0 – 0.5 mg/l Al | PM 166 | AP 166 |
| Ammonia | 0 – 1.0 mg/l N | PM 152 | AP 152 |
| Bromine | 0 – 10 mg/l Br ₂ | PM 060 | AP 060 |
| Boron | 0 – 2.5 mg/l B | PM 190 | AP 190 (160 tests) |
| Calcium Hardness (CalcicoI™) | 0 – 500 mg/l CaCO ₃ | PM 252 | AP 252 |
| Chloride (ChloridoI™) | 0 – 50,000 mg/l NaCl | PM 268 | AP 268 |
| Chlorine - Free (DPD 1) | 0 – 5 mg/l Cl ₂ | PM 011 | AP 011 |
| Chlorine – Free, extended range (DPD XF) | 0 – 10 mg/l Cl ₂ | PM 013 | AP 013 |
| Chlorine – Free, Combined and Total (DPD 1 and DPD 3) | 0 – 5 mg/l Cl ₂ | PM 031 | AP 031 |
| Chlorine – Free, Combined and Total, extended range (DPD XF and DPD XT) | 0 – 10 mg/l Cl ₂ | PM 033 | AP 033 |
| Chlorine – Total (DPD 4) | 0 – 5 mg/l Cl ₂ | PM 041 | AP 041 |
| Chlorine – Total (DPD 3 only) | 0 – 5 mg/l Cl ₂ | - | AP 031/1 |
| Chlorine – Total, extended range (DPD XT only) | 0 – 10 mg/l Cl ₂ | - | AP 033/1 |
| Chlorine HR | 0 – 250 mg/l Cl ₂ | PM 162 | AP 162 |
| Chlorine Dioxide and Chlorite (DPD method) | 0 – 10 mg/l ClO ₂ | PM 052 | AP 052 |
| Chlorine Dioxide LR (Lissamine Green B method) | 0 - 2.5 mg/l ClO ₂ | PM 064 | AP 064 |
| Chlorine Dioxide HR (Lissamine Green B method) | 2.5 - 20 mg/l ClO ₂ | PM 065 | AP 065 |



| Name | Range | Starter Pack (50 tests) | Replacement Pack (250 tests) |
|--|---|-------------------------|------------------------------|
| Chromium VI (Chromicol™) | 0 - 1.0 mg/ICr | PM 281 | AP 281 |
| Colour | 10 - 500 Hazen Units/ 10 - 500 mg/IPtCo | PM 269 | - |
| Copper – Free, Combined and Total (Coppercol®) | 0 - 5 mg/ICu | PM 186 | AP 186 |
| Copper - Free | 0 - 5 mg/ICu | - | AP 187 |
| Cyanuric Acid | 0 - 200 mg/ICNA | PM 087 | AP 087 |
| DEHA | 0 - 500 ppb DEHA | PM 275 | AP 275 |
| Fluoride | 0 - 1.5 mg/IF | PM 179 | AP 179 (200 tests) |
| Hardness – Total (Hardicol®) | 0 - 500 mg/ICaCO ₃ | PM 254 | AP 254 |
| Hydrazine | 0 - 0.5 mg/IN ₂ H ₂ | PM 103 (30 tests) | AP 103 (150 tests) |
| Hydrogen Peroxide LR | 0 - 2 mg/IH ₂ O ₂ | PM 104 | AP 104 |
| Hydrogen Peroxide HR | 0 - 100 mg/IH ₂ O ₂ | PM 105 | AP 105 |
| Iron LR | 0 - 1 mg/IFe | - | AP 155 |
| Iron MR | 0 - 5 mg/IFe | PM 292 | AP 292 |
| Iron HR | 0 - 10 mg/IFe | PM 156 | AP 156 |
| Magnesium Hardness (Magnecol®) | 0 - 500 mg/ICaCO ₃ | PM 193 | AP 193 |
| Manganese | 0 - 0.03 mg/IMn | PM 173 | AP 173 |
| Manganese HR | 0 - 5 mg/IMn | PM 174 | AP 174 |
| Molybdate LR | 0 - 20 mg/IMoO ₄ | PM 258 | AP 258 (200 tests) |
| Molybdate HR | 0 - 100 mg/IMoO ₄ | PM 175 | AP 175 |
| Nickel (Nickeltest™) | 0 - 10 mg/INi | PM 284 | AP 284 |
| Nitrate (Nitratest™) | 0 - 20 mg/IN | PM 163 | AP 163 |
| Nitrite (Nitricol®) | 0 - 0.5 mg/IN | PM 109 | AP 109 |
| Nitrite (Nitriphot) | 0 - 1500 mg/INaNO ₂ | PM 260 | AP 260 |
| Organophosphonate (OP) | 0 - 20 mg/IPO ₄ | PM 262 | AP 262 |
| Ozone (DPD method) | 0 - 2 mg/IO ₃ | PM 056 | AP 056 |
| pH Phenol Red | pH 6.5 - 8.5 | PM 130 | AP 130 |
| Phenol (Phenoltest™) | 0 - 5 mg/IC ₆ H ₅ OH | PM 287 | AP 287 (200 tests) |
| PHMB (PHMB-PHOT) | 0 - 100 mg/Iactive biocide | PM 272 | AP 272 |
| Phosphate LR | 0 - 4 mg/IPO ₄ | PM 177 | AP 177 (200 tests) |
| Phosphate HR | 0 - 100 mg/IPO ₄ | PM 114 | AP 114 |
| Potassium | 0 - 12 mg/IK | PM 189 | AP 189 |
| Silica | 0 - 4 mg/ISiO ₂ | PM 181 | AP 181 (200 tests) |
| Silica HR | 0 - 150 mg/ISiO ₂ | PM 290 | AP 290 (200 tests) |
| Sulphate | 0 - 200 mg/ISO ₄ | PM 154 | AP 154 |
| Sulphide | 0 - 0.5 mg/IS | PM 168 | AP 168 (200 tests) |
| Sulphite (Sulphitest™) | 0 - 500 mg/INa ₂ SO ₃ | PM 266 | AP 266 |
| Zinc | 0 - 4 mg/IZn | PM 148 | AP 148 |

Liquid Reagents

| Description | Range | Part Code (30 tests) |
|---|----------------------------|----------------------|
| Dissolved Oxygen 0.8 | 0 - 0.8 mg/IO ₂ | PL 553 |
| Dissolved Oxygen 0.8 | 0 - 2.0 mg/IO ₂ | PL 503 |
| Dissolved Oxygen 2.0 | 0 - 20 mg/IO ₂ | PL 513 |
| Chlorine - Free (equivalent to DPD 1) | 0 - 5 mg/ICl ₂ | AT 015* |
| Chlorine - Total (equivalent to DPD 3) Must be used in conjunction with AT 015 | 0 - 5 mg/ICl ₂ | AT 035* |
| Chlorine – Free and Total (equivalent to DPD 1 & DPD 3) | 0 - 5 mg/ICl ₂ | AT 016* |

* = 1200 tests + = 100 tests

Tubetests®

For ultimate convenience the Palintest range of Tubetests® reagents offer pre-dispensed reagents for minimal handling with barcoded reagent labelling for ease of use in wastewater applications.



For wastewater parameters such as Chemical Oxygen Demand (COD), nutrients and Heavy Metals the Tubetests® range provides the solution – literally.

Features include:

16mm OD tubes for improved resolution – larger diameter tubes are more sensitive in the lower part of the measuring range

Full range of accessory heater blocks, tube racks, workplace mats and pipettes to provide the complete solution for Tubetests® analysis

Barcoded reagent labels for automatic test selection on the Photometer 8000 – including automatic blanking for COD testing

Available in packs of 25 tests, the Tubetests® range of reagents supports the activities of any effluent monitoring laboratory. Add any multiparameter photometer to your heater block and reagents for a complete wastewater analysis system.

Tubetests® Reagents

| Mercury Free for Low Chloride Samples | Range | Part Code |
|--|-------------------------------|-----------|
| COD/150 | 0 – 150 mg/I O ₂ | PL 450 |
| COD/400 | 0 – 400 mg/I O ₂ | PL 452 |
| COD/1000 | 0 – 1000 mg/I O ₂ | PL 453 |
| COD/2000 | 0 – 2000 mg/I O ₂ | PL 454 |
| COD/20000 | 0 – 20000 mg/I O ₂ | PL 456 |
| Containing Mercury for Moderate Chloride Samples | Range | Part Code |
| COD/150/M | 0 – 150 mg/I O ₂ | PL 460 |
| COD/400/M | 0 – 400 mg/I O ₂ | PL 462 |
| COD/1000/M | 0 – 1000 mg/I O ₂ | PL 463 |
| COD/2000/M | 0 – 2000 mg/I O ₂ | PL 464 |
| COD/20000/M | 0 – 20000 mg/I O ₂ | PL 466 |

| Containing Mercury for High Chloride Samples | Range | Part Code |
|--|---|-----------|
| COD/150/2M | 0 – 150 mg/I O ₂ | PL 461 |
| COD/1000/2M | 0 – 1000 mg/I O ₂ | PL 468 |
| COD/2000/2M | 0 – 2000 mg/I O ₂ | PL 465 |
| COD/20000/2M | 0 – 20000 mg/I O ₂ | PL 467 |
| COD Standard Solutions (COD Concentration) | Nominal COD Concentration | Part Code |
| COD Standard Solution, 125ml | 80 mg/l | PL 470 |
| COD Standard Solution, 125ml | 250 mg/l | PL 472 |
| COD Standard Solution, 125ml | 800 mg/l | PL 474 |
| COD Standard Solution, 125ml | 10000 mg/l | PL 476 |
| Nutrients | Range | Part Code |
| Ammonia 15N, Nessler Method | 0 – 15 mg/I N | PL 420 |
| Ammonia 50N, Nessler Method | 0 – 50 mg/I N | PL 424 |
| Ammonia 100N, Nessler Method | 0 – 100 mg/I N | PL 425 |
| Ammonia 12N/50N, Indophenol Method | 0 – 12 mg/I N 0 – 50 mg/I N | PL 400 |
| Nitrate 30N | 0 – 30 mg/I N 0 – 150 mg/I NO ₃ | PL 404 |
| Total Nitrogen 30N (use with PL 404) | 0 – 30 mg/I N | PL 408 |
| Phosphate 12P | 0 – 12 mg/I P | PL 412 |
| Total Phosphorus 12P | 0 – 12 mg/I P | PL 416 |
| Heavy Metals | Range | Part Code |
| Chromium VI (Cr ⁶⁺) | 0 – 10 mg/I Cr | PL 440 |
| Total Chromium | 0 – 10 mg/I Cr | PL 436 |
| Copper | 0 – 20 mg/I Cu | PL 427 |
| Iron | 0 – 25 mg/I Fe | PL 434 |
| Nickel | 0 – 20 mg/I Ni | PL 430 |
| Zinc | 0 – 7 mg/I Zn 0 – 35 mg/I Zn | PL 442 |

Accessories



Many of the Tubetests® methods require digestion, Palintest offer a range of accessories to support the digestion process.

The Tubetests® Premium Heater Block (PT 592 pictured) with a Photometer 8000 and Tubetests® Rack. See palintest.com for more information on the accessories options.

Photometer Accessories

Enhance your photometer with a range of accessories and additional items to integrate data exchange, manage results and ensure your photometer is delivering the best results



Aqua Pal App

Available for iOS and Android, the Aqua Pal app provides seamless data management for the Photometer 7500 Bluetooth® SMART instrument and manual data upload from any other testing device

Track data by sample ID, operator ID and create site specific reporting and control profiles for individual customers

Text alerts and notifications when results are outside of defined limits

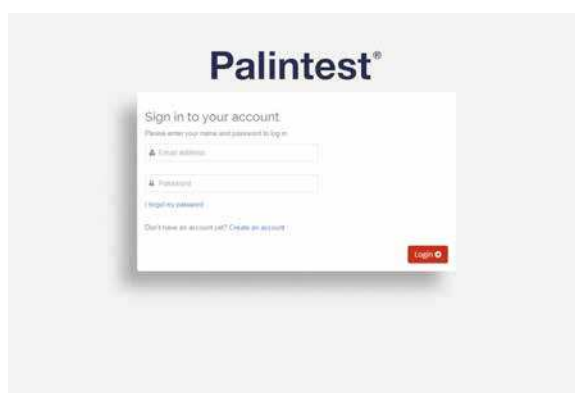
The Aqua Pal app integrates with the secure Palintest Portal for enhanced data reporting and control.

Palintest Portal

Secure data storage and reporting via any browser interface

Team collaboration control to share data with customers and other authorised members of the management team

Integrated Palintest Know link to access support information, testing hints and tips plus application guides



Calibration and Servicing

Photometer Calibration Check Standards

Validate your photometer’s performance and guarantee the quality of your results

Traceable to National Physical Laboratory (NPL) standards for a full audit trail

Specific sets and tolerances for individual photometer models

| | |
|--|--|
| PT 802 Photometer 8000 Check Standards | Certified Check Standard Set, supplied in protective case in sealed vials. Includes three standards and blank. |
| PT 804 Photometer 7500/Photometer 7100 Check Standards | Certified Check Standard Set, supplied in protective case in sealed vials. Includes three standards and blank. |



Servicing

All Palintest photometers are provided with a 2 year, no quibble warranty. Annual calibration and service will keep your instrument operating at the peak of performance.

| | |
|---|--|
| 06234 Photometer 8000 Instrument Service and Calibration | For Photometer 8000. Includes multipoint recalibration using traceable standards, inspection and test with issue of new calibration certificate. |
| 06232 Photometer 7500 Bluetooth/ Photometer 7100 Instrument Service and Calibration | For Photometer 7500 Bluetooth and Photometer 7100. Includes multipoint recalibration using traceable standards, inspection and test with issue of new calibration certificate. |

