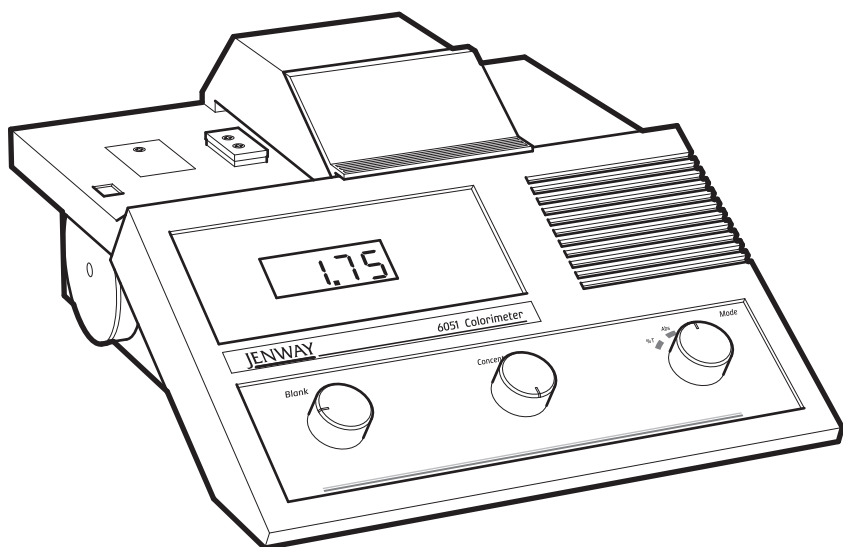




Instruction Manual

Version 605 023/Rev F/07-17

Safety

Please read this information carefully prior to installing or using this equipment.

1. The unit described in this manual is designed to be operated only by trained personnel. Any adjustments, maintenance and repair must be carried out as defined in this manual, by a person qualified to be aware of the hazards involved.
2. It is essential that both operating and service personnel employ a safe system of work, in addition to the detailed instructions specified in this manual.
3. Other than for those items defined in the maintenance procedures herein there are no user serviceable items in this instrument. Removal of covers and attempted adjustment or service by unqualified personnel will invalidate the warranty and may incur additional charges for repair.
4. References should always be made to the Health and Safety data supplied with any chemicals used. Generally accepted laboratory procedures for safe handling of chemicals should be employed. Do not use hazardous or flammable substances in the instrument.
5. If it is suspected that safety protection has been impaired in any way, the unit must be made inoperative and secured against any intended operation. The fault condition should immediately be reported to the appropriate servicing authority.
6.  The warning symbol alerts the user to important information about using the instrument. Read and follow the associated instructions carefully.
7. **WARNING:** If the equipment is not used in the manner specified, the protection provided by the equipment may be impaired.
8. Do not replace the detachable mains leads with inadequately rated leads.

Merci de lire attentivement ces informations avant d'installer ou d'utiliser cet appareil.

1. L'appareil décrit dans ce manuel est conçu pour être utilisé uniquement par des personnes formées. Tout réglage, maintenance ou réparation doit être effectué comme décrit dans ce manuel, par une personne qualifiée consciente des risques encourus.
2. Il est essentiel que les personnes utilisant et intervenant sur cet appareil respectent les règles de sécurité de travail, en plus des instructions détaillées précisées dans ce manuel.
3. En-dehors des éléments décrits dans les procédures de maintenance ci-incluses, cet appareil ne contient aucun élément réparable par l'utilisateur. L'enlèvement des capots et les tentatives de réglage ou de réparation par des personnes non qualifiées invalide toute garantie et entraîne un risque de frais de réparation supplémentaires.
4. Toujours se référer aux fiches techniques de santé et de sécurité accompagnant tout produit chimique utilisé. Respecter les procédures de laboratoire généralement acceptées

pour la manipulation en toute sécurité des produits chimiques. Ne pas utiliser de substances dangereuses ou inflammables sur l'appareil.

5. Si l'utilisateur suspecte qu'un problème quelconque puisse mettre en cause la sécurité, l'appareil doit être rendu inopérant en empêchant son utilisation. Communiquer la défaillance constatée au service de maintenance compétent.
6.  Le symbole d'alerte signale à l'utilisateur les informations importantes concernant l'utilisation de l'appareil. Lire et suivre les instructions fournies avec la plus grande attention.
7. **ATTENTION.** Si l'appareil n'est pas utilisé de manière adéquate, la protection de l'appareil pourrait être impactée.
8. Ne pas remplacer le cordon d'alimentation fourni par un cordon d'alimentation de dimension électrique non adapté.

Bitte lesen Sie diese Hinweise vor Installation oder Gebrauch dieser Ausrüstung sorgfältig durch.

1. Das in diesem Handbuch beschriebene Gerät darf nur von geschultem Personal bedient werden. Alle Anpassungen, Wartungsarbeiten und Reparaturen müssen entsprechend der Vorgaben in diesem Handbuch und von einer kompetenten Person, die mit den damit verbundenen Gefahren vertraut ist, durchgeführt werden.
2. Es ist wichtig, dass sowohl das Bedienungs- als auch das Service-Personal zusätzlich zu den detaillierten Anweisungen in diesem Handbuch ein sicheres Arbeitssystem einsetzen.
3. Mit Ausnahme der Teile, deren Wartungsverfahren in diesem Handbuch beschrieben sind, enthält dieses Gerät keine weiteren Teile, die vom Benutzer gewartet werden können. Das Entfernen von Abdeckungen und Versuche von hierfür unqualifiziertem Personal, Anpassungen oder Wartungsarbeiten durchzuführen, haben zur Folge, dass die Garantie verfällt und können zusätzliche Reparaturkosten auslösen.
4. Es ist jederzeit auf die sicherheitsrelevanten Daten sämtlicher verwendeter Chemikalien Bezug zu nehmen. Allgemein anerkannte Labormethoden zum sicheren Umgang mit Chemikalien sollten eingesetzt werden. Verwenden Sie keine gefährlichen oder entzündlichen Stoffe in Verbindung mit dem Gerät.
5. Besteht der Verdacht, dass die Sicherheitsvorrichtungen in irgendeiner Weise beschädigt wurden, muss das Gerät außer Betrieb genommen und gegen weiteren Gebrauch gesichert werden. Die Störung sollte der zuständigen Serviceeinrichtung unverzüglich gemeldet werden.
6.  Das Warnsymbol weist auf wichtige Informationen zur Verwendung des Geräts hin. Lesen und befolgen Sie die dazugehörigen Anweisungen sorgfältig.

7. **ACHTUNG:** Wenn das Gerät nicht in der vorgegebenen Weise eingesetzt wird, können die Schutzfunktionen des Gerätes beeinträchtigt werden.
8. Abnehmbares Anschlusskabel nicht durch unangemessen bewertete Kabel austauschen.

Leggere attentamente queste istruzioni prima di installare o utilizzare il dispositivo.

1. L'unità descritta nel presente manuale è stata realizzata per essere utilizzata solo da personale che ha ricevuto l'apposita formazione. Qualsiasi operazione di regolazione, manutenzione e riparazione deve essere effettuata sulla base di quanto indicato nel presente manuale da personale qualificato consapevole dei rischi connessi.
2. È fondamentale che il personale operativo e il personale addetto alla manutenzione utilizzino un sistema di lavoro sicuro, oltre a seguire le istruzioni specificate nel presente manuale.
3. Oltre a quelli indicati nelle procedure di manutenzione, all'interno di questo dispositivo non sono presenti altri elementi sui quali è possibile effettuare interventi. La rimozione delle protezioni e qualsiasi tentativo di regolazione o di manutenzione posto in essere da personale non qualificato invaliderà la garanzia. In questi casi, sarà necessario pagare un importo per le riparazioni effettuate.
4. È sempre necessario fare riferimento ai dati sulla salute e sulla sicurezza forniti con le sostanze chimiche utilizzate. Adottare le procedure di laboratorio generalmente accettate per la gestione delle sostanze chimiche. Non utilizzare sostanze pericolose o infiammabili sullo strumento.
5. Nel caso in cui si sospetti che la salute possa essere pregiudicata in qualsiasi modo, disattivare l'unità per renderla inutilizzabile. Qualsiasi condizione di errore deve essere immediatamente segnalata al responsabile per la manutenzione.
6.  Il simbolo di avvertenza informa l'utente sulle informazioni importanti in merito all'uso dello strumento. Leggere e seguire le istruzioni corrispondenti con cura.
7. **AVVERTENZA:** qualora il dispositivo non venga utilizzato nel modo descritto, la protezione fornita dal dispositivo stesso potrebbe risultare compromessa.
8. Non sostituire i cavi di alimentazione di rete scollegabili con cavi inadeguati.

Lea esta información atentamente antes de instalar o utilizar este equipo.

1. La unidad descrita en este manual está diseñada para que solamente la utilice personal con formación. Cualquier operación de ajuste, mantenimiento y reparación debe llevarse a cabo del modo indicado en este manual y debe realizarla una persona cualificada que sea consciente de los peligros que implica.
2. Es fundamental que tanto los operarios como el personal de servicio utilicen un sistema de trabajo seguro, así como las instrucciones detalladas que se especifican en este manual.

3. Cualquier elemento que no se encuentre entre los definidos en los procedimientos de mantenimiento aquí descritos no podrá utilizarse en este instrumento. La extracción de las tapas y los intentos de ajuste o reparación por parte de personal no cualificado invalidarán la garantía y pueden incurrir en cargos adicionales por reparación.
4. Siempre deberían consultarse los datos sobre Salud y Seguridad que se suministran con cualquier producto químico que se utilice. Es necesario llevar a cabo los procedimientos de laboratorio de aceptación generalizada para la manipulación segura de productos químicos. No utilice sustancias peligrosas o inflamables en el instrumento.
5. Si existe la sospecha de que las medidas protectoras de seguridad han quedado dañadas en cualquier modo, la unidad debe inutilizarse y protegerse contra toda operación que se intente llevar a cabo. El estado de fallo debe comunicarse inmediatamente a la autoridad de servicio de mantenimiento y reparación pertinente.
6.  El símbolo de advertencia avisa al usuario de información importante relacionada con el uso del instrumento. Lea atentamente y siga las instrucciones correspondientes.
7. **ADVERTENCIA:** Si el equipo no se utiliza de la manera especificada, la protección que ofrece el aparato puede verse afectada.
8. No sustituya el cable de alimentación eléctrica con cables de voltaje inadecuado.

CONTENTS

SECTION 1 - INTRODUCTION	7
1.1 Instrument Description	7
1.2 Instrument Specification	7
SECTION 2 - INSTALLATION	8
2.1 Unpacking	8
2.2 Installation	8
2.3 Displays/Controls	9
2.4 Inputs/Outputs	10
SECTION 3 - OPERATION	11
3.1 Initial Set-Up	11
3.2 Sample Measurement	11
3.3 Good Practice Guidelines	12
SECTION 4 - MAINTENANCE, SERVICING AND REPAIR	13
4.1 Maintenance	13
4.2 Light Source Replacement	13
4.3 Servicing and Repair	14
SECTION 5 - WARRANTY	14
SECTION 6 - OPTIONAL ACCESSORIES	14
6.1 Optional Accessories	14
6.2 Spares	14

SECTION 1 - INTRODUCTION

1.1 Instrument Description

The Model 6051 is a general purpose laboratory colorimeter housed in a custom designed case. The visible spectrum is covered by eight gelatin filters incorporated within the unit. Optional interference filters are available to enable other visible wavelengths to be obtained, results are displayed in either %Transmittance, Absorbance or Concentration units via a 17mm L.C.D. readout.

Samples may be presented to the 6051 in 10mm square cuvettes of standard or semi-micro volumes, test-tubes or Pour-in/Suck-out cells.

An analogue output of 1mV per digit is available on the rear panel.

User maintenance is minimal.

The 6050 has been designed to operate on 230/115V a.c. or from an external 12V d.c. source.

1.2 Instrument Specifications

Wavelength Range:	400 - 710nm
Wavelength Selection:	8 gelatin filters on a switched wheel. Peak wavelengths of 430, 470, 490, 520, 540, 580, 600 and 710nm
Bandpass:	Typically, 40nm gelatin (10nm for interference filters)
Display:	2½ digit, 17mm LCD display
Measurement Ranges:	Transmittance 0 to 100% Absorbance 0 to 1.50A Concentration 0.1 to 1000
Resolution:	1%T 0.01Abs 0.1 to 1 Conc
Warm-up Time:	2% per hour after 15 minutes warm-up
Zero Drift (Abs Mode):	Less than 0.02 Abs/hour after warm-up
Photometric Linearity:	1 %T or ± 0.01 Abs whichever is greater
Sample System:	10mm square plastic cuvettes (standard or semi-micro volume) or test-tubes 20mm and 40mm cells
Light Source:	Tungsten filament
Detector:	Silicon photocell
Recorder Output:	Analogue 10mV per digit
Power:	230 or 115V a.c. $\pm 15\%$ 50/60Hz 12V d.c. external
Size:	300 x 355 X 120mm
Weight:	3kg

SECTION 2 - INSTALLATION

2.1 Unpacking

Remove the Model 6051 from the packaging and ensure the following items are present:

1. 6051 Colorimeter
2. Mains Cable
3. Pack 100 Disposable Plastic Cuvettes
4. Test Cuvette

2.2 Installation

Mains Supply

The 6051 is designed to operate on 230 or 115V a.c. supplies ($\pm 15\%$) 50/60Hz. The power consumption is 20W. The standard 2 metre mains lead supplied with the unit is fitted with an IEC type connector which can be plugged directly into the Power In socket on the rear panel.

Fuse ratings: 230V = 250mA (Anti-surge)
 115V = 500mA (Anti-surge)

NOTE: The unit should be positioned within 1.5 metres of an earthed mains supply.

Voltage Select

Before connecting the unit to the mains supply ensure the **Voltage Select** switch on the rear panel is set to the correct position for the mains supply to be used (230 or 115).

Mains Connections

A suitable plug should be connected to the 3 wires on the mains lead. These are colour coded to conform to the internationally recognised standard such that:

BROWN	- LIVE
BLUE	- NEUTRAL
GREEN/YELLOW	- EARTH



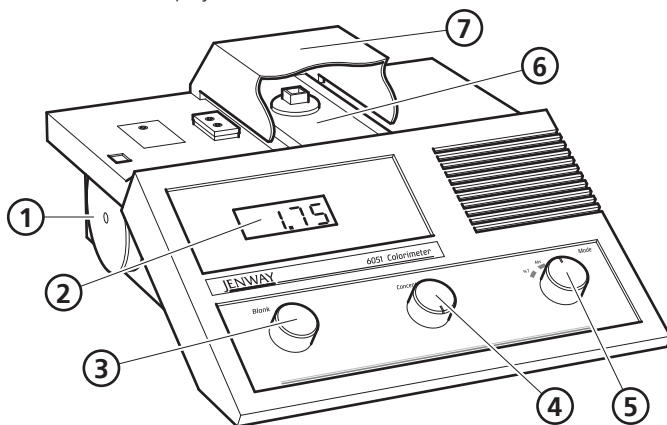
IMPORTANT -THE UNIT MUST BE EARTHED

The Green/Yellow wire in the a.c. supply must be connected to a properly grounded terminal.

IF IN DOUBT CONSULT A QUALIFIED ELECTRICIAN

2.3 Displays/Controls

Fig. 2.3.1 Front Panel Displays and Controls



1. **Wavelength Select** - Thumbwheel used to select the correct wavelength for the specific tests being performed.
2. **Main display** - 2½ Digit LCD.
3. **Blank Control** - This control is used when standardising the unit. Normal practice is to set the Abs or %T value with a cuvette of deionised water. The **Blank** control is then set to give the correct reading.
4. **Concentration** - This control is used when the mode switch is in the **Conc 1** and **2** positions. These ranges are extensions of the Absorbance mode, allowing the reading obtained to be set to a value convenient to the standard concentration.
5. **Function Switch** - This control determines the operating mode of the unit.

%T (%Transmission) - This is the ratio of light passing through the sample (I_t) to the light falling on to the sample (I_o)

$$\% \text{Transmission} = \frac{I_t}{I_o} \times 100\%$$

Transmission expressed as a percentage is non-specific about the concentration of the sample being illuminated. A more useful unit of measurement is Absorbance.

ABS (Absorbance or Optical Density) - Absorbance has a direct relationship to the concentration of the coloured solution being analysed. The relationship is known as Beer's Law. This can be defined as being equal to:

$$\frac{\log \frac{100}{\%T}}{10} = \frac{\log \frac{I_o}{I_t}}{10}$$

In practice the intensity of the light is not directly measured and the relationship is better stated as:

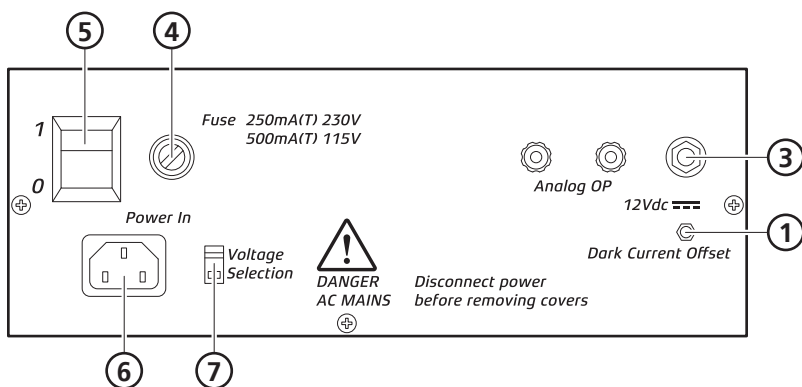
$$\text{Absorbance} = \frac{\log \text{Intensity of light transmitted by referenced}}{10 \text{ Intensity of light transmitted by sample}}$$

Conc - (Concentration Ranges) - These ranges are extensions of the absorbance mode, allowing the reading to be set to a value convenient to the reference solution concentration. The reading may be increased or decreased by up to a factor of ten.

6. **Sample Area** - Samples may be presented in 10 x 10mm cuvettes of standard or semi-micro volumes or test tubes.
7. **Sample Area Lid** - The lid should be kept closed, when necessary to eliminate the possibility of erroneous results caused by the ingress of stray light. For many determinations, the lid may be left open.

2.4 Inputs/Outputs

Fig. 2.4.1 Rear Panel Layout



1. **Zero** - A preset control which should rarely require adjustment and is provided to offset photocell dark current.
2. **Jack Socket** - Connection socket for the external 12V d.c. supply.
3. **4mm Pin Sockets** - An analogue voltage of 10mV per digit is available on these sockets.
4. **Fuse Holder** - Screw in holder for the mains fuse. Fuse ratings 230V = 250mA (T)
115V = 500mA (T)
5. **Rocker Switch** - On/Off switch for the unit.
6. **Power In Socket** - IEC type connection socket for mains cable.
7. **Voltage Select** - 2 position slide switch for selection of line voltage (230 or 115V a.c.).

SECTION 3 - OPERATION

3.1 Initial Set-Up

1. Connect the unit to the mains supply and switch on. Select **%T** by use of the **Function Switch**. Allow 15 minutes warm-up period at this point to ensure the optical and electronic systems have sufficient time to stabilise.
2. Insert the test cuvette (black cuvette supplied with the unit) into the sample chamber. The wavelength reading is not critical at this point. The display should read zero. Adjustment to this reading can be made by use of the Dark Current Offset control located on the rear panel. If adjustment is required the blank and zero settings should be re-checked until they are both correct.
3. Remove the test cuvette from the sample chamber.
4. Fill a cuvette to within 1cm of the top with distilled or deionised water and place in the sample chamber. Close the sample chamber lid. Select the required wavelength or interference filter. Set the display to read 100 using the **Blank Control**. The reading should be stable.
5. Remove the cuvette from the unit. The 6051 is now ready for use.
NOTE: During sample measurement the sample area lid should ideally be kept in the closed position to eliminate the possibility of erroneous results caused by the ingress of stray light. For many determinations, however, the lid may be left open without causing significant errors.

3.2 Sample Measurement

1. Allow 15-minute Warm-Up prior to use refer to 3.1 Initial Set-Up.
2. Select the required filter position for maximum absorbance. If this is not known, the colour complimentary to that of the standard solution can be selected from the list given below. The chart may be read from left to right or right to left, i.e. a blue sample requires a yellow filter / a yellow sample requires a blue filter.

Blue	- Yellow	Bluish/Green	- Red
Greenish/Blue	- Orange	Green	- Red or Blue

Standard filter wavelengths and colours are as follows:

430nm	- Violet	540nm	- Yellow/Green
470nm	- Blue	580nm	- Yellow
490nm	- Blue/Green	600nm	- Orange
520nm	- Green	710nm	- red
3. Place a blank solution into the sample compartment.
4. Select **Abs** by use of the **Function Switch**. Set the display to read zero by use of the **Blank Control**.
5. Place a cuvette containing a standard of known concentration into sample compartment.
NOTE: For routine use operating with absorbances between the range of 0 and 0.6 is recommended. In some applications, higher absorbances may produce non-linear results. If the standard solution is outside this range then either sample dilution or concentration should be considered.

6. The unit is now ready for operation in the Absorbance mode.
7. Operation in the %Transmittance mode can be performed by selecting **%T** using the **Function switch**. The unit will now read directly in %T and the blank sample should read 100 %T.
8. Operation in the Concentration mode can be performed by selecting either **Conc 1** or **2** using the **Function Switch**. The standard value should be set to a convenient reading using the **Concentration Control**. The unit will now read directly in sample concentration.
NOTE: To ensure optimum performance refer to Section 3.3 Good Practice Guidelines.
9. When using separate interference filters set the filter wheel to one of the "F" positions. Remove the blanking filter from the filter compartment and insert the interference filter to be used. The "F" positions have varying degrees of light attenuation to cater for the wide spread of transmission characteristics encountered with interference filters.

The degree of attenuation varies from zero on position F1 through to a maximum on F4. In most normal circumstances position F1 will be most appropriate. If, however, lower than expected absorbance values are obtained, it is probable that the detector circuit is saturating and a range with more attenuation should be selected. The unit is now ready for use.

3.3 Good Practice Guidelines

1. For optimum performance blank and sample calibration should be carried out at the beginning and end of every sample batch.
2. To ensure accurate results are obtained the sample area lid should be kept in the closed position when necessary.
3. The styrene cuvettes supplied with the unit are disposable (i.e. ideally they should be used once and then thrown away). Some repeat use is possible providing extreme care is taken during cleaning to ensure no damage occurs to the polished surfaces.
4. Plastic cuvettes are not suitable for use with organic solvents.
5. Glassware used in the preparation of standards should be made of a high-grade borosilicate glass. The use of soda glass should be avoided wherever possible as leaching can occur during prolonged contact giving erroneous results.
6. Chemical reagents should, wherever possible, be of analytical grade. Contamination can cause problems, even if at very low levels.
7. There are some substances which do not follow Beer's Law. When attempting a new method, it is advised that linearity checks should be performed over the range of concentrations being used. This can be carried out by preparing a quantity of known strength solutions and checking the results.
 - a) Deviations from Beer's Law may occur at high concentrations by association of molecular ionic species.
 - b) Deviations from Beer's Law may occur at low concentrations by variation in hydration introducing changes in the nature of complex ions.
 - c) Absorption which does not obey Beer's Law will require a graph of known standards to be plotted. This should indicate Reading vs Concentration. The reading obtained from the unknowns can then be related to concentration from the graph.

SECTION 4 - MAINTENANCE, SERVICING AND REPAIR



WARNING: Ensure the unit is disconnected from the mains electricity supply before attempting maintenance or servicing.

4.1 Maintenance

The 6051 has been designed to give optimum performance with minimum maintenance. The only maintenance required is to clean the external surfaces with a damp cloth and mild detergent and keep free from dust. To give added protection when not in use the unit should be disconnected from the mains supply and covered with the optional dust cover. For longer term storage or re-shipment, it is recommended that the unit be returned to the original packing case.

4.2 Light Source Replacement

The only routine maintenance which may be required is the replacement of the light source due to failure. Failure should be suspected if the reading remains at zero in **%T** mode or reads overrange in **Abs** or **Conc** modes. This can be confirmed by considering the cuvette chamber. The tungsten filament lamp is a focused lens-end lamp 5.0V, 775mA Base type I/2-20UNF-2A, available from the Manufacturer or your local Distributor.

1. Check that the sample chamber is empty. Remove any separate interference filters or filter holder from the compartment on top of the unit.
2. Place the unit face down onto a clean, flat surface (protection by use of a soft cloth is advised). Unscrew the 7 retaining screws from the base and the 3 retaining screws located on the rear panel. Remove the base cover, taking care not to strain the earth bonding connection.
3. Carefully return the unit to the correct way up. Remove the small lamp fixing panel, (located to the left of the top of the unit), to expose the two lamp mount fixings. Remove the two lamp mount retaining screws and place carefully to one side.
4. Place the unit face down and remove the lamp, together with its mount and PTFE insulator. Disconnect the lamp cable from the PCB by gently easing off the connector. Unscrew the lamp from its mounting.

NOTE: When fitting the new lamp ensure any fingerprints are removed from the glass envelope. Removal should be carried out by using a soft cloth.

5. Insert the new lamp into the mount, ensuring that it is screwed fully home, but do not overtighten. Re-connect the lamp cable to the PCB connector. Turn the unit onto its side and place the lamp holder into position, ensuring the PTFE insulator is re-fitted between the lamp holder and chassis. Replace the securing screws while holding the lamp holder assembly in position. Replace the base cover, taking care to re-fit all the fixings. Care should be taken to ensure the earth wire is not trapped between the chassis when re-assembling the unit. Return the unit to the correct way up and re-fit the lamp access panel.
6. Connect the unit to the correct mains supply and switch on. Ensure the lamp is illuminated by looking into the sample chamber. The unit is now ready for use.

4.3 Servicing and Repair

Any repairs or replacement of parts MUST be undertaken by suitably qualified personnel. Only spare parts supplied or specified by Cole-Parmer or its agents should be used. Fitting of non-approved parts may affect the performance and safety features designed into the instrument. For a comprehensive list of parts required by service engineers conducting internal repairs please contact the service department quoting the model and serial number:

Email: cpservice@coleparmer.com Tel: +44 (0)1785 810475

For any other technical enquiries please contact the Technical Support Department at;

Email: cptechsupport@coleparmer.com Tel: +44 (0)1785 810433

SECTION 5 - WARRANTY

Cole-Parmer Ltd. warrants this instrument to be free from defects in material and workmanship, when used under normal laboratory conditions, for a period of 3 years. In the event of a justified claim Cole-Parmer will replace any defective component or replace the unit free of charge. This warranty does NOT apply if damage is caused by fire, accident, misuse, neglect, incorrect adjustment or repair, damage caused by incorrect installation, adaptation, modification, fitting of non-approved parts or repair by unauthorised personnel.

Cole-Parmer Ltd, Beacon Road, Stone, Staffordshire, ST15 0SA, United Kingdom

Email: cpservice@coleparmer.com Tel: +44 (0)1785 810475

Web: www.jenway.com

SECTION 6 - OPTIONAL ACCESSORIES

5.1 Optional Extras

The following list of items are available as optional accessories for use with the Model 6051:

- 060 084 Pack of 100 (10mm) Plastic Cuvettes (3ml)
- 060 087 Pack of 100 (1ml) Plastic Semi-micro Cuvettes (1ml)
- 035 027 10 x 10mm Glass Cell
- 035 056 10 x 20mm Glass Cell
- 035 029 10 x 40mm Glass Cell

Interference Filters

- 606 018 Wavelength 540nm
- 606 017 Wavelength 405nm

5.1 Spares

The following list of items are available as spares for the Model 6051:

- 605 064 Tungsten filament lamp assembly
- 605 003 10 x 10mm Cell Holder
- 016 005 250mA Anti-surge Fuse



This product meets the applicable EC harmonized standards for radio frequency interference and may be expected not to interfere with, or be affected by, other equipment with similar qualifications. We cannot be sure that other equipment used in its vicinity will meet these standards

and so we cannot guarantee that interference will not occur in practice. Where there is a possibility that injury, damage or loss might occur if equipment malfunctions due to radio frequency interference, or for general advice before use, contact the manufacturer.



EU Declaration of Conformity

Product	Laboratory Equipment	File Number	P225
Manufacturer	Cole-Parmer Ltd Beacon Road Stone, Staffordshire ST15 0SA United Kingdom		

This declaration of conformity is issued under the sole responsibility of the manufacturer

Object of Declaration Benchtop Colorimeter
(reference the attached list of catalogue numbers)

The object of the declaration described above is in conformity with the relevant Union Harmonisation Legislation:

Low Voltage Directive	2006/95/EC	(until 19 April 2016)
	2014/35/EU	(from 20 April 2016)
EMC Directive	2004/108/EC	
RoHS Directive	2011/65/EC	

References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:

IEC/EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements.
IEC/EN 61010-2-010:2014	Particular requirements for laboratory equipment for the heating of materials.

Signed for and on behalf of the above manufacturer

Additional Information Year of CE Marking: 1996

Place of Issue Stone, Staffordshire, UK

Date of Issue October 2009. Revised 14 July 2017

Authorised Representative Carl Warren

Title Technical Manager

Signature



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.