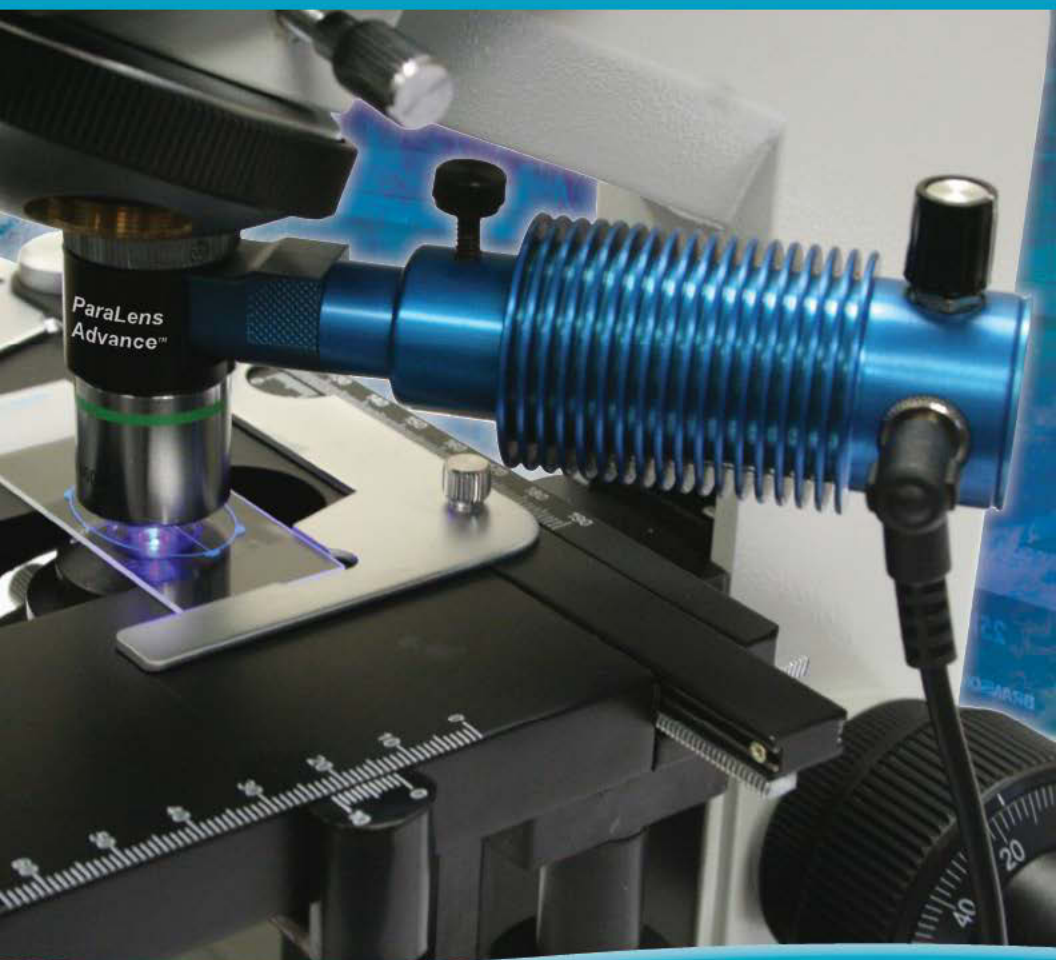


# **QBC® ParaLens Advance** *Operators Manual*





# QBC® ParaLens Advance

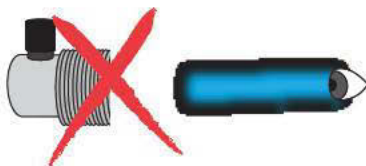
## Operators Manual



**NOTE:** Designed for use by trained operator  
For technical assistance in the United States, call: **1-866-265-1486**

### **Caution**

The LED bulb is a high powered light source. Therefore, **DO NOT** look directly into the light source, or permanent vision damage may occur.



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# ParaLens Advance Parts Description



Main Body Assembly



LED Light Source



Power Pack



Filter Set Arm



Microscope Objective  
(20x,40x,60x,100x)



Plug Adapters



## Unrivaled Design

The ParaLens Advance delivers its benefits through its patent-pending design, illustrated to the left.

- 1. RMS Threading:** Standard RMS threading ensures that the ParaLens Advance can attach to any compound light microscope. (Note: Adapter rings are available for non-standard sizes.)
- 2. Detachable Filter Set Arm:** The ParaLens Advance filter set arm contains all filters necessary for fluorescence microscopy. The arm slides into the main body of the ParaLens Advance and is held into place through a pair of powerful magnets.
- 3. LED Light Source (not shown):** The ParaLens Advance's blue LED light source attaches to the filter set arm, emitting blue light with a 410-511 nm wavelength.
- 4. Focusing Lens:** This lens focuses the LED light and passes it through to the excitation filter.
- 5. Excitation Filter:** The excitation filter allows only light in the 385-480 nm range to pass.
- 6. Dichroic Beam Splitter:** The beam splitter reflects blue light through the objective to the sample. It then allows emitted light from the sample to pass through directly to the viewer.
- 7. Objective:** The ParaLens Advance is currently available with four high-quality objective strengths: 20x (Dry), 40x (Dry), 60x (Oil), and 100x (Oil).
- 8. Emission Filter:** This filter reduces background noise and optimizes the fluorescence signal.

# ParaLens Advance Installation

## 1. Remove Main Body Assembly

(Right) Remove ParaLens Advance main body assembly from protective casing, by first unscrewing top of casing in the direction shown.



(Left) Unscrew main body assembly from protective casing cap by holding assembly and turning the cap in the direction shown.



## 2. Remove Microscope Objective

Remove one objective from microscope nosepiece.



## 3. Attach Main Body Assembly

Screw main body assembly into open position on nosepiece in the direction shown by the arrow.

(Note: The ParaLens Advance uses standard RMS threading. If working with a non-standard microscope, see the ParaLens Advance product description list for adapter rings.)



## 4. Tighten Locking Ring

Using screwdriver provided, tighten locking ring to prevent ParaLens Advance from becoming loose.



## 5. Remove Filter Set Arm

Remove ParaLens Advance filter set arm from protective vial.



## 6. Insert Filter Set Arm

Insert filter set arm into opening on side of main body assembly, confirming that magnet is seated firmly.



## 7. Attach LED Light Source

If necessary, loosen thumb screw on ParaLens Advance LED light source.

Slide LED light source onto filter set arm. ▶



◀ Tighten thumb screw until light source is held securely.



## 8. Attach Plug Adapter

Attach appropriate plug adapter to power pack by placing adapter onto face of power pack.

Press down on the top of the adapter until the ▶ adapter firmly fits into place.



## 9. Power LED Light Source

Plug the cord of the power pack into the power input of the LED light source.

Plug power pack into an outlet (as shown) or other ▶ approved power source (see "Power Options" for more details).



## 10. Turn On LED Light Source

Turn on LED light source by turning the intensity control as shown by the arrow.

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# ParaLens Advance Maintenance

To properly maintain your ParaLens Advance, regular cleaning should be performed using the included ParaLens Advance Preventative Maintenance Kit (p/n 424341). This kit includes:



Lens Cleaner Bulb



Cleaning Swabs



Microfiber Cloth



Lens Paper

Begin the cleaning process by disassembling the ParaLens Advance in the reverse order of the steps noted in “Installation”.



## 1. Removing Objective

To remove objective from the main body from Main Body, gently unscrew in a clockwise direction until it comes free.



Be careful not to touch lens with hands



## 2. Internal Cleaning

Clean lenses of filter set arm with cotton swab and lens paper

Continued ►



When performing internal cleaning, be careful not to press too hard against lenses and filters.



The lens cleaner bulb can be used to brush and blow dust particles off of the outside of the ParaLens Advance.

### 3. External Cleaning

Use the microfiber cloth to clean fingerprints and smudges off of surface areas on ParaLens Advance.



Use a sheet of lens paper to wipe oil residue off of the objective after every use.  
(This will reduce the risk of cross contamination)

- Use only the power pack or solar pack supplied by QBC Diagnostics with the ParaLens Advance system.
- Never open the ParaLens Advance system. There are NO serviceable parts contained within the ParaLens Advance filter set arm or light source.
- Allow system to cool before cleaning/storage.
- For prolonged storage protect all parts from dust. Return filter set arm to protective vial.
- Due to intense light, NEVER look into the aperture of objective while light source is on.
- Optimal operation and storage conditions - Ambient temperature and humidity, and dust free environment.
- Handle the ParaLens Advance as a laboratory instrument.
- Always turn off ParaLens Advance when not in use.
- If unable to view sample, confirm that intensity dial is turned to full brightness.
- For other problems or concerns, contact:

**QBC Diagnostics**

**200 Shadylane Drive**

**Philipsburg, PA 16866 U.S.A.**

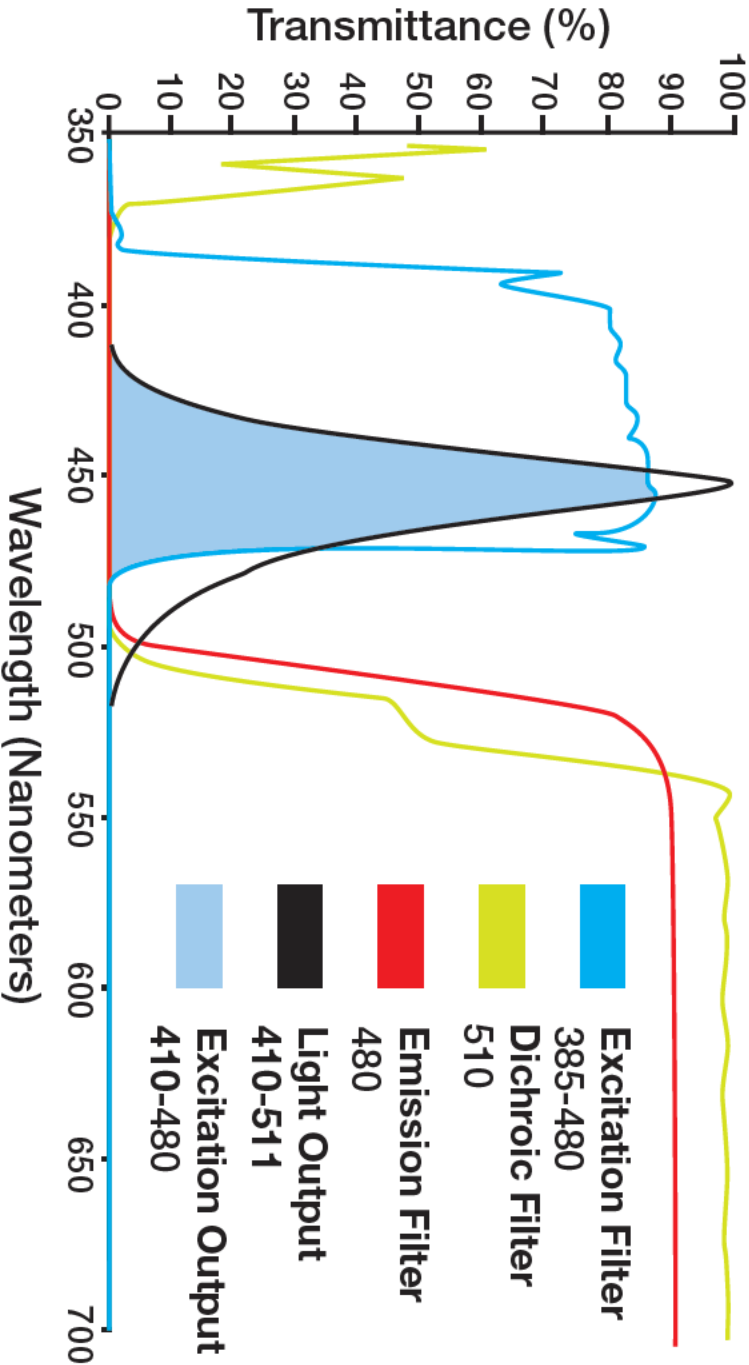
**[www.qbcdiagnostics.com](http://www.qbcdiagnostics.com)**

**phone: +1-814-692-7661**

**fax: +1-814-692-7662**



## Blue FITC



# ParaLens Advance Additional Power Options

The ParaLens Advance has been designed for portability, with accessories available to provide power in virtually any setting:

## ParaLens Advance Portability Pack (p/n 424340)

The ParaLens Advance Portability pack is a collection of power accessories (available together or separately) that can be used to power the ParaLens Advance anywhere, including:

1



2



3



4



5



6



1. 12-volt Battery Clamps; 2. Cigarette Lighter adapter; 3. Male-to-Male cable; 4. USB adapter; 5. Solar battery pack charger; 6. Solar Battery Pack (Note: All components are available individually, as well.)

## Mobile Power Station (p/n 427426)

The QBC Mobile Power station is a durable, rechargeable battery station that can be used to remotely power the ParaLens Advance along with other QBC Diagnostics products. It uses a sealed, 22 Amp Hour rechargeable battery to provide steady AC or DC power, along with a host of other convenient features.



## Solar Battery Pack Charging



**NOTE:** Prior to use, the Solar Battery Pack must first be charged using an approved wall outlet.

**1.** Turn power switch to "OFF" position.



**2.** Plug DC wall charger into wall socket.



**3.** Plug DC wall adapter into solar pack "DC-IN" port and fully charge Li-ion battery. Red light indicates <50%, orange light indicates >50% and green indicates 100% charge.

## Solar Battery Pack Operation



### 1. Solar Battery Pack Operation

If necessary, turn variable output switch to 9 V.

Continued ►

## Solar Battery Pack Operation Continued



2. Plug USB power cord into “USB-OUT” port.



3. Plug small end of double male adapter into USB power cord.



4. Plug large end of double male adapter into ParaLens Advance LED light source



5. Open solar power pack and orient toward sunlight.



6. Turn power switch to “ON” position. If there is insufficient sunlight, indicator light will blink red.

**NOTE:** The solar energy can be used to power the device directly, or to charge the built-in Li-ion battery for later use.

## Portable Power Station



### 1. Portable Power Station Charging

Press the DISPLAY switch to check charge levels. Charge if less than 100%. (Note: Power Station should be charged immediately after purchase.)



2. Insert Adapter plug into power input on back of Power Station.



3. Plug external wall charger into an AC source, i.e. wall outlet. (When battery charge reaches 100% battery will not overcharge. Complete charge may take up to 48 hours.)

## Portable Power Station



### 1. Portable Power Station Operation

Open the protective cover of the AC power outlet.

Continued ▶

## Portable Power Station Continued



2. Using U.S.-style power adapter and power pack, plug ParaLens light source into portable power AC outlet.



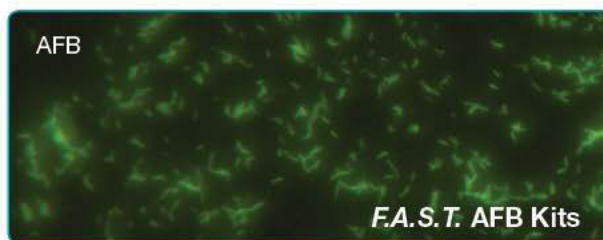
3. Toggle the inverter/compressor switch to the "INVERTER" position. You are now ready to power your ParaLens Advance LED light source.

LED fluorescence microscopy, as provided by the ParaLens Advance, provides increased speed and sensitivity in a number of clinical and research applications:

## Tuberculosis

Under the ParaLens Advance, AFB in sputum samples treated with auramine O stain appear a vibrant green or yellow against a dark background. The World Health Organization has recognized this improved visibility, calling for the adoption of LED fluorescence microscopy in TB screening.<sup>1</sup>

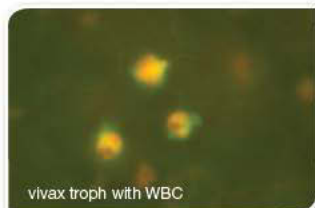
In addition to the ParaLens Advance, QBC Diagnostics' *F.A.S.T.* (Fluorescence and Staining Technologies) AFB Kits are designed to improve detection for users. *F.A.S.T.* kits include a revolutionary 3-minute auramine stain and the patent pending SureFocus™ microscope slide, which keeps samples in focus and provides a streamlined review path.



1. World Health Organization Website, 2010. Web. 1 Dec. 2010. ([http://www.who.int/tb/laboratory/who\\_policy\\_led\\_microscopy\\_july10.pdf](http://www.who.int/tb/laboratory/who_policy_led_microscopy_july10.pdf))

## Malaria

The ParaLens Advance can be used to view the QBC Malaria Test, which provides faster and more accurate results than Giemsa thick films.<sup>2,3</sup> The QBC Test uses fluorescent acridine orange stain, as well as principles of centrifugation, to provide unmatched ease in preparation and review.



### QBC Malaria Test



2. Bentlo, A.; Roche, J.; Molina, R.; Amela, C.; Navar, J. (1994): Application and Evaluation of QBC Malaria Diagnostics in a Holoendemic Area. *Applied Parasitology*, Vol. 35: 266-272.

3. Cioo, A.; Ondjio, S.; Genga, I.; Borjiga, D.; Owaga, M.; Ngare, D.; Gathecha, E. (1994): Evaluation of the QBC Method to Detect Malaria Infections in Reto Surveys. *East African Medical Journal*, Vol. 71, No. 5.

# Preventative Maintenance Microscope

- Always cover microscope with dust cover when not in use.
- Always use lint-free lens paper when cleaning lenses.
- Clean immersion oil off of stage and 100x objective immediately after use. Use an alcohol pad for cleaning the stage but only use lens paper on the objective.
- Do not use immersion oil on 20x or 40x objectives. They are not sealed for oil.
- Use a lens cleaner bulb for cleaning dust from the nosepiece or ocular tubes.
- Whenever removing an objective, return to protective casing. Screw objective back into cap for storage. do not drop objective!

**QBC Diag**  
**200 Shady**  
**Philipsbur**  
**online: ww**  
**phone: +1-**  
**fax: +1-814**



## **Limited Warranty** *QBC ParaLens Advance*

QBC Diagnostics Inc., (herein after referred to as QBC Diagnostics Inc.) warrants the QBC™ ParaLens Advance to be free from defects in workmanship and materials for a period of one (1) year from date of shipment from QBC Diagnostics Inc., provided that the ParaLens Advance is operated in accordance with this Operator's Manual. During such period, QBC Diagnostics Inc. agrees to replace or repair any parts which, in its judgment, are found to be defective, provided the ParaLens Advance has not been subjected to misuse. The warranty stated herein is extended to the original consumer and not to any subsequent consumer of the ParaLens Advance.

QBC Diagnostics Inc. shall not be liable for any incidental or consequential damages. QBC makes no other warranties, expressed or implies, except as stated herein.



Caution, consult accompanying documents



Consult instructions for use



**Manufacturer:**

**QBC Diagnostics, Inc.**

200 Shadylane Drive, Philipsburg, PA 16866 U.S.A.

+1-814-692-7661 [www.qbcdiagnostics.com](http://www.qbcdiagnostics.com)



**ISO:** In Vitro diagnostics device



Authorised representative in the European Community.

**Emergo Europe**

Molenstraat 15, 2513 BH, The Hague, The Netherlands





## QBC® ParaLens Advance

QBC Diagnostics  
200 Shadylane Drive  
Philipsburg, PA 16866 U.S.A.  
+1-814-692-7661  
[www.qbcdiagnostics.com](http://www.qbcdiagnostics.com)



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**Made in the U.S.A.**

4277-251-401 Rev. C