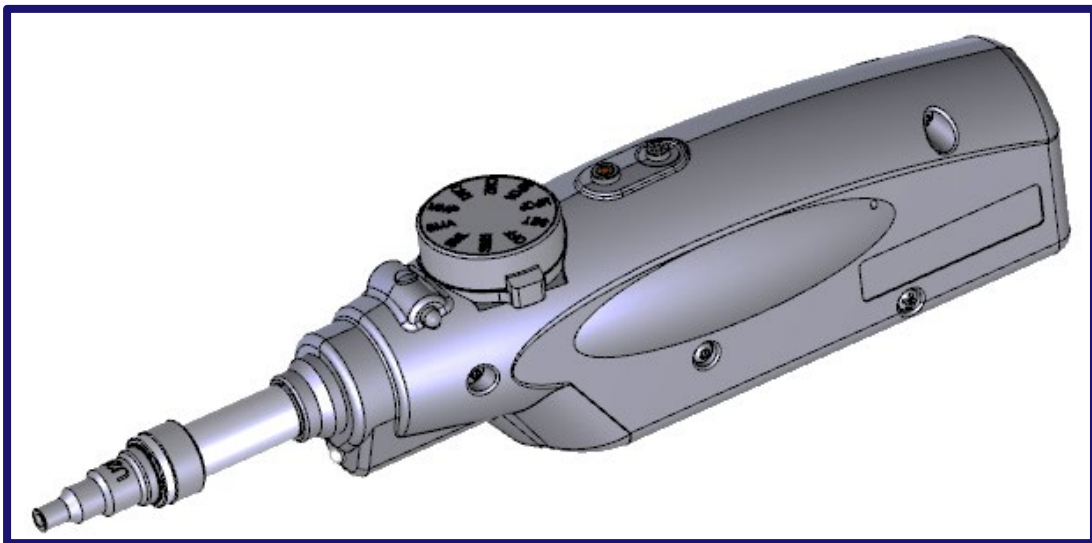


# DI-5000

## User's Guide



### Pass/Fail Autofocus Probe

All Lighttel video microscopes are designed for eye-safe inspection of fiber optic connector endfaces in order to determine if the endface is contaminated or damaged.

The DI-5000 video microscope provides one-touch focusing, a built in flashlight, and output of the camera image to various types of display devices via built-in WiFi or a removable USB connection. It is battery powered and rechargeable via that same USB connection. The CPU within the probe analyzes the condition of the inspected connector endface and the indicator lights will be green if the connector passes and red if it fails. A numbered dial on the probe enables changing the criteria used to analyze the connector condition.

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| PACKAGE CONTENTS      | PART NUMBER    | DESCRIPTION                                        |                                                                                       |
|-----------------------|----------------|----------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>DI-5000-B2</b>     | PT2-U2.5/PC/M  | Universal tip for male 2.5mm PC connectors         |    |
|                       | PT2-FS/PC/F    | Tip for female FC and SC PC connectors             |    |
|                       | PT2-U1.25/PC/M | Universal tip for male 1.25mm PC connectors        |    |
|                       | PT2-LC/PC/F-1  | Tip for female LC PC connectors                    |    |
|                       | DI1-CASE-S     | Soft carrying case                                 |    |
|                       | CV-USB         | Flash drive with ConnectorView (standard) software |    |
| <b>DI-5000-B2/APC</b> | PT2-U2.5/APC/M | Universal tip for male 2.5mm APC connectors        |    |
|                       | PT2-FS/APC/F   | Tip for female FC and SC APC connectors            |   |
|                       | DI1-CASE-S     | Soft carrying case                                 |  |
|                       | CV-USB         | Flash drive with ConnectorView (standard) software |  |

Lightel offers more than 120 inspection tips for our DI model probes. Visit our Series 2 Tips webpage for a current list. <http://lightel.com/product/82/series-2-tips>

### Battery Safety Notice

**This product contains a LI-ion battery. Please observe proper precautions when handling or disposing of the battery.**  
**CAUTION: Batteries may leak or explode if improperly handled.**

- Use only batteries approved for use with this product.
- Ensure product is turned off and unplugged before replacing battery.
- When replacing battery, ensure it is not installed backwards.
- Do not expose battery to excessive heat or flame.
- Do not immerse product in water.
- Transport the battery in the device.
- Do not dispose of battery in household waste. This product is designated for separate collection at an appropriate facility.
- Any replacement battery must be a lithium battery approved by IEC/EN 62133-2, and the approved use environment must meet 50°C (or above).



## RF Safety Notices

### Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

### FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This equipment complies with the FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC exposure compliance requirement, please follow operation instruction as documented in this manual.

### Canada, Industry Canada (IC) Notices

This device complies with Industry Canada license exempt RSS standard(s). This Class B digital apparatus complies with Canadian ICES-003 and CAN ICES-3(B)/NMB-3(B).

Operation is subject to the following two conditions:

(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. The IC for this device is **25924-DI30005000**.

### Canada, avis d'Industrie Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-247.

Son fonctionnement est soumis aux deux conditions suivantes :

(1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement. L'identifiant IC de cet appareil est **25924-DI30005000**.

Cet équipement est conforme aux limites d'exposition aux radiations FCC établies pour un environnement non contrôlé. Les utilisateurs finaux doivent suivre les instructions d'utilisation spécifiques pour satisfaire la conformité à l'exposition FCC, veuillez suivre les instructions de fonctionnement décrites dans ce manuel.

### NCC Administrative Regulations on Low Power Radio Waves Radiated Devices:

Without permission granted by the NCC, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to a approved low power radio-frequency devices. The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved. The said legal communications means radio communications is operated in compliance with the Telecommunications Management Act. The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.

### 依據低功率電波輻射性電機管理辦法：

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。



# Product Layout

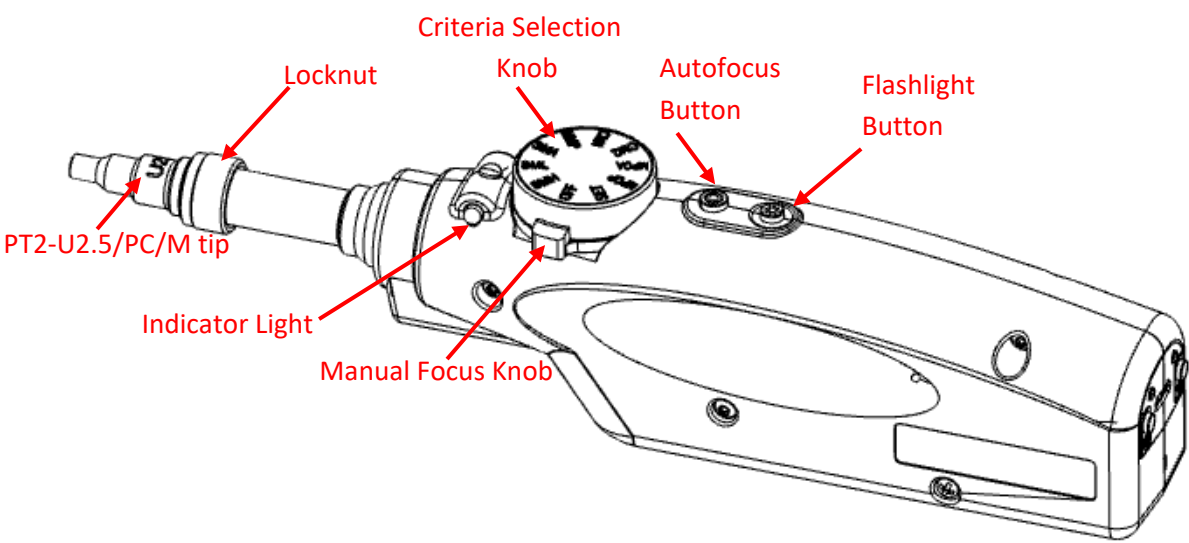


Figure 1 – Top View

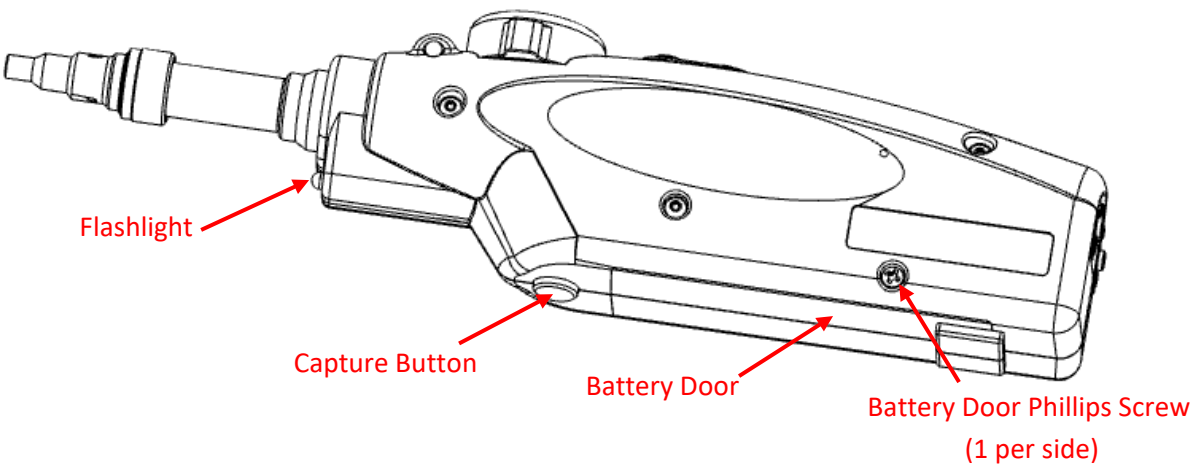
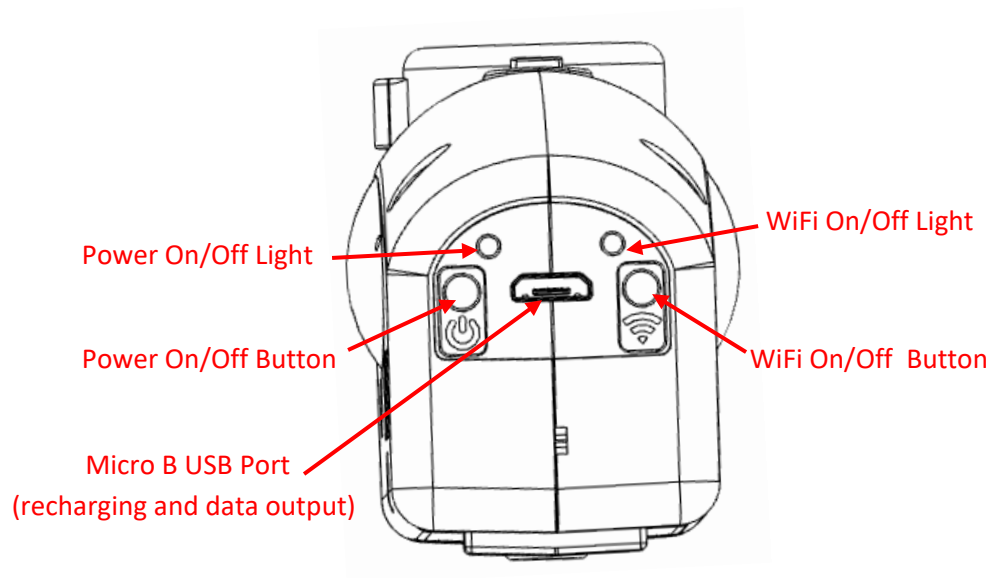


Figure 2 – Bottom View





**Figure 3 – Rear View**

## Product Setup

(Suggested software is for testing purposes only. Final Lightel software will be able to view both the WiFi signal and the USB signal.)



# Product Use

## **WiFi:**

Once setup is complete, press the Power Button (Figure 3) on the rear of the DI-5000 until the Power Light turns on (green color). Then turn on the WiFi by pressing the WiFi button. The WiFi light will blink white. Once WiFi on the DI-5000 has been turned on, check the WiFi connections on your PC or other device for the WiFi signal “LT-DI-5000...” When you select the correct signal the blinking white light will light continuously and once your device has completed the connection the DI-5000 will be ready to use.

## **USB:**

Once setup is complete, insert the mini B cable into the port at the rear of the DI-5000. Attach the other end of the cable to a full USB port on a PC or other approved device. The Power Light will blink if the battery whenever the battery is charging. To use the USB for data output, please make sure the WiFi is turned off.

## **Both:**

The battery can be recharged while using WiFi by inserting a mini B cable into the port at the rear of the DI-5000 and attaching the cable to a USB charging port. The Power Light will begin to blink when the battery charge falls below 25% and will continue to blink while the battery is charging. When fully charged, blinking will stop.

If you have not already done so, attach the appropriate tip for the connector you will be inspecting (see the next page for information on attaching and using Series 2 inspection tips).

For male connectors, you will insert the ferrule into the tip. For female connectors, the tip is inserted into the adapter. When properly inserted, a stop position in the tip ensures that the connector is within the focal range.

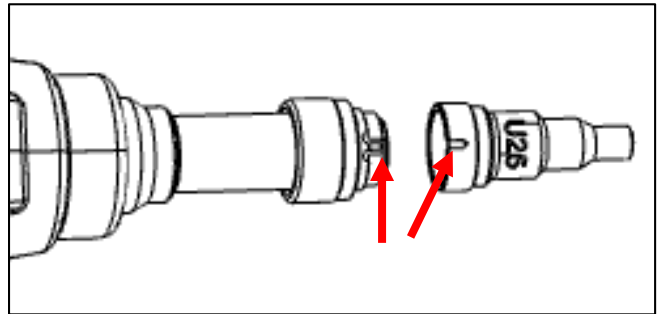
When ready, press and release the Autofocus Button. The lens will move to determine the focal point. When it is properly focused the Focus Status Light will again turn green. (If it remains red, you can try the Autofocus Button again, or use the Manual Focus Knob to refocus.) The Capture Button will send an electronic signal to your attached viewing device. Depending on the attached hardware and your settings, the Capture Button will freeze the image, capture the image, or analyze the image.

The Flashlight Button turns the Flashlight on or off when additional external illumination is needed. The light has no effect on the illumination provided when viewing the connector ferrule.

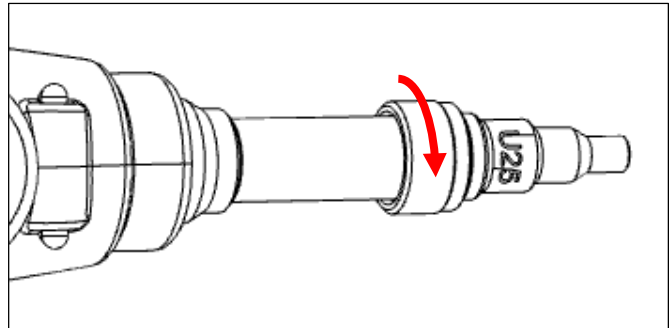


# Attaching and Removing Inspection Tips

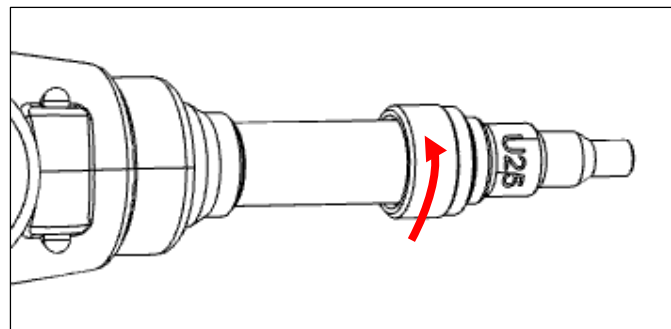
All DI-5000 tips are held in place with a locknut. All tips have a slot (some specialty tips have more than one slot) which will match up with the key at the top of the DI-5000 to ensure that the tip is properly aligned.



To **attach** a tip, hold the probe with the tip facing away from you and turn the locknut **clockwise**.



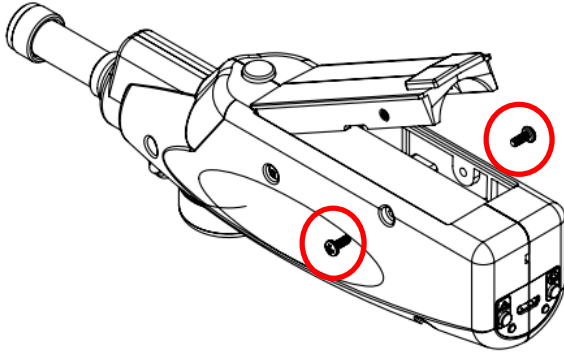
To **remove** a tip, hold the probe with the tip facing away from you and turn the locknut **counterclockwise**.



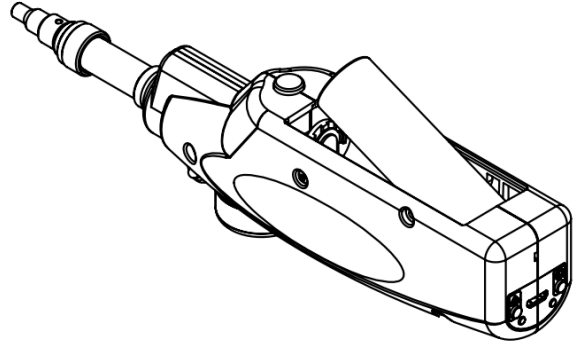
# Battery Replacement

## Remove Battery Door

Use a Phillips screwdriver to remove the two black Phillips screws, then open the battery door.

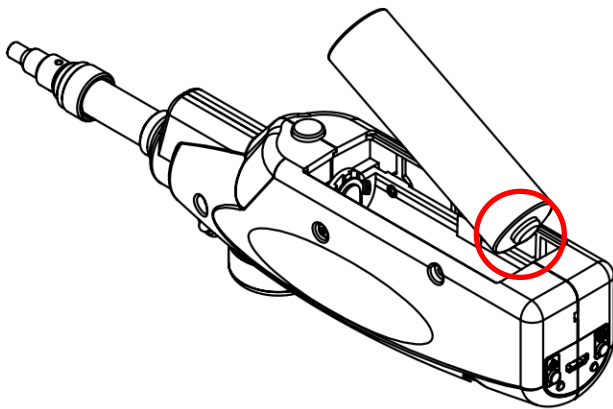


## Remove Battery



## Replace Battery

Replace battery with the positive end facing the rear of the probe.



## Replace Cover and Screws

Close the battery door and reattach the two black Phillips screws to complete the process.



## Specifications

|                                                         |                                                                     |
|---------------------------------------------------------|---------------------------------------------------------------------|
| Field of view                                           | ~ 640µm x 480µm                                                     |
| Detectable resolution                                   | 0.5µm                                                               |
| Focus                                                   | Autofocus or manual adjustment, 2mm max travel                      |
| Autofocus time                                          | ~2 seconds                                                          |
| Camera                                                  | 1/4" CMOS                                                           |
| Light source                                            | Blue LED                                                            |
| Power supply                                            | Rechargeable Li-ion battery or USB2.0 (or higher) port              |
| Battery                                                 | Single-cell, Li-ion, Panasonic NCR 18650                            |
| Power rating                                            | 5V — 2A                                                             |
| Battery life                                            | >7 hours, continuous use                                            |
| Dimensions                                              | 205mm x 37mm x 49mm (Probe with cap)                                |
| Weight                                                  | 191g (including battery)                                            |
| Operating temperature                                   | 0°C to 50°C (0°C to 45°C when charging) <sup>1</sup>                |
| Storage temperature                                     | -20°C to 50°C                                                       |
| Frequency                                               | 2412-2462 MHz                                                       |
| Supported operating systems<br>(ConnectorView Software) | Windows 7®, Windows 8®, Windows 10®<br>32-bit and 64-bit processors |

### Warranty

Lightel Technologies Inc. products are shipped after passing a final inspection by Lightel's Quality Assurance program. In the event of a product failure please contact the Lightel Sales Department at (425)277-8000 or email [sales@lightel.com](mailto:sales@lightel.com)

The warranty period is for **one year** after the date of delivery. Should failure occur within that period, repair or replacement will be made, as necessary, free of charge. The Warranty will not be honored if:

1. Failure is caused by usage non-conforming to the instruction manual or negligent operation.
2. Failure is caused by an unauthorized electric or mechanical modification by the customer.

*The extent of the warranty shall be limited to repair or replacement of the defective unit.*

## About Lightel

LIGHTTEL designs, develops, and manufactures a broad range of fiber optics products and services for telecommunications, CATV, and datacom industries. Our product line includes fused, micro-optic and planar lightwave circuit-based passive optical components (such as splitters, couplers, isolators, circulators, CWDMs, CCWDMs, DWDMs). In addition, we offer our technology leading connector end face video microscope products including the Connector Inspector, Digital Inspector and ViewConn. We also manufacture fiber optic component workstations for those customers who wish to fabricate their own devices for vertical integration, product development or R&D purposes.

<sup>1</sup> Caution: if operating the device at a high temperature close to 50°C, wear protective gloves

