

# Contents

## (English Version)

---

- |   |        |
|---|--------|
| I. Disclaimers, Exclusions and Limitations of Liability               | pg. 04 |
| II. About this book   | pg. 05 |
| III. About your Presidium Refractive Index Meter II                   | pg. 06 |
| IV. IMPORTANT NOTICE  | pg. 08 |
| 1. GETTING STARTED with your Presidium Refractive Index Meter II      | pg. 10 |
| 2. PERFORMING A TEST with your Presidium Refractive Index Meter II    | pg. 14 |
| 3. READING TEST RESULTS with your Presidium Refractive Index Meter II | pg. 16 |
| 4. TAKING CARE of your Presidium Refractive Index Meter II            | pg. 18 |

## **I. Disclaimers, Exclusions and Limitations of Liability**

---

PLEASE READ AND NOTE PRESIDIUM WARRANTY TERMS AND CONDITIONS as stated in the warranty card. Presidium warranty for its testers are subject to proper use by its users in accordance with all the terms and conditions as stated in the relevant user handbook and shall cover only manufacturing defects.

Due to continuous product improvement, Presidium reserves the right to revise all documents including the right to make changes to the handbook without notice and without obligation to notify any person of such revisions or changes. Users are advised to check Presidium's website at <http://www.presidium.com.sg/> from time to time.

Presidium shall not be responsible for any damage or loss resulting from the use of this tester or handbook, and under no circumstances shall Presidium, its manufacturer or any of its subsidiaries, licensors, distributors, resellers, servants and/or agents be liable for any direct or indirect damages, resulting from the use of this tester.

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, under no circumstances shall Presidium, its manufacturer or any of its subsidiaries, licensors, distributors, resellers, servants and/or agents be responsible for any special, incidental, consequential or indirect damages howsoever caused.

The tester or Presidium Refractive Index Meter II (PRIM II) referred to in this handbook is provided and/or sold on an "as is" basis. Except as required by applicable law, no warranties of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

## II. About this book

---

Thank you for purchasing the Presidium Refractive Index Meter II (“PRIM II” or “tester”).

This handbook is designed to help you set up your tester and describes all you need to know about how to use your tester accurately and take care of it in line with its requirements. Please read these instructions carefully and keep them handy for future reference.

This book also contains the terms and conditions in relation to the use of the tester including the **Disclaimer, Exclusion and Limitation of Liability clauses stated above in Section I**

### **III. About your Presidium Refractive Index Meter II**

---

The Presidium Refractive Index Meter II detects the quantity of light (intensity) reflected from the surface of cut and polished gemstone. This intensity reading is fed into a microcontroller in which a calculation is performed and converted to obtain the refractive index reading of the gemstone

**This tester was designed with the following objectives:**

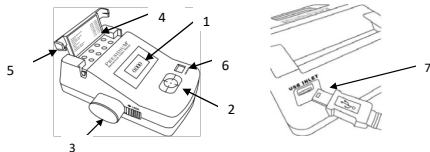
- Reconfirming the identity of colored gemstone using Refractive Index
- Universal SI units
- Provide fairly consistent and reliable test results under proper use;

**The Presidium Refractive Index (R.I.) Meter II features the following:**

- Separates diamond, moissanite and gemstones in seconds
- Refractive Index reading from 1.000 to ~ 3.000
- No waiting time between tests
- USB power inlet with International Voltage Compatibility
- Low battery Indicator
- Automatic power off
- Online software updates

## Included in your package:

- Presidium Refractive Index Meter II
- Protective Carrying Case
- Quick Guide
- Refractive Index Reference List
- USB Cable
- QR Code Card



1	Display Window
2	Test pad
3	Cylinder
4	Refractive Index chart
5	Flap
6	On/Off button
7	USB Inlet & USB cable

## IV. IMPORTANT NOTICE

---

- Keep the tester dry. Precipitation and all types of liquids or moisture can contain minerals that will corrode electronic circuits. If your tester gets wet, remove the battery, and allow the tester to dry completely before replacing it.
- Do not use, store or expose the tester in dusty and dirty areas. Its moving parts and electronic components can be damaged.
- Do not use, store or expose the tester in hot areas. High temperatures can damage or shorten the life of the tester, damage batteries, and warp or melt certain plastics.
- Do not use, store or expose the tester in cold areas. When the tester returns to its normal temperature, moisture can form inside the tester and damage electronic circuit boards.
- Do not attempt to open the tester other than as instructed in this handbook.
- Do not drop, knock, or shake the tester. Rough handling may break internal circuit boards and fine mechanics.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the tester.
- Do not paint the tester. Paint can clog the moving parts and prevent proper operation.

If the tester is not working properly, kindly contact our Customer Service at [service@presidium.com.sg](mailto:service@presidium.com.sg) or

Presidium Instruments Pte Ltd  
Unit 7, 207 Henderson Road  
Singapore 159550  
Attn: Customer Service Executive

## 1. GETTING STARTED with your Presidium Refractive Index Meter II

### Powering up your Presidium Refractive Index Meter II

This tester can be powered either by the use of an AC power via USB connection (optional item sold separately) or through the use of batteries. If AC power is used, connect one end of the USB cable to the tester (**Fig. 1.1**), and the other end of adaptor into a suitable electrical outlet. Please ensure that only the adaptor supplied by Presidium is used.

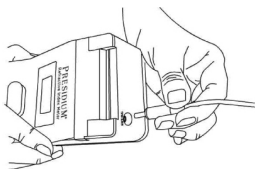


Fig. 1.1

If battery is used (1 x 9V battery), take note of the positive (+) and negative (-) directions of battery when inserting the battery into the tester (**Fig. 1.2**). The use of alkaline batteries is preferred, as it should generally give approximately two and a half hours of continuous operation, while the use of ordinary batteries will give a shorter working life.



Fig. 1.2



## Turning on your Presidium Refractive Index Meter II

Remove Recessed Cylinder from the left hand side of the housing by unlocking the latch (**Fig. 1.3**). Pull open the Flap with your thumb and index finger, the Refractive Index Chart will be visible. Remove the Protective Cover from the Test Pad.

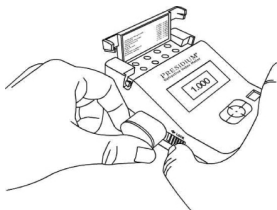


Fig. 1.3

Press the ON/OFF button to turn on the unit (**Fig. 1.4**). To ensure that the unit is functioning properly, cover the test pad with Recessed Cylinder. The display should show 1.000.



Fig. 1.4

## **Calibration**

All testers have been calibrated during the manufacturing process and no further adjustment or user intervention to the unit is required.

Self-calibration should not be attempted. To minimize any risks associated, users should contact Presidium at [service@presidium.com.sg](mailto:service@presidium.com.sg) or its service center for assistance. In the event that users require the manufacturer to re-calibrate the unit, the users will bear the associated to/fro freight cost for the shipping of unit to the service center.

## **Recommended testing conditions**

The gemstone should be clean and dry before testing. However, elaborate cleaning procedures are not normally necessary.

The recommended testing temperature is 18°C – 27°C or 65°F- 80°F. Please allow the gemstone to adjust to room temperature prior to testing. Exposure and/or operation of the tester outside the room temperature would affect the results and performance of the tester.

## **Battery information**

Batteries generally can still be used, provided that the “Low Batt” indicator does not light up.

Stop using the unit when the low battery indicator is displayed to prevent inaccurate measurements.

Do not leave worn out batteries in the battery compartment as the batteries may corrode, leak, and damage the tester. Batteries should be removed when the tester is expected to be stored for any extended period of time.

To prevent inaccurate readings, replace with new battery if the “Low Batt” indicator lights up. A test should not be performed when the battery power is low or weak.

Batteries do not have to be removed when the AC adaptor is in use.

### **Cleaning your gemstone prior to testing**

Prepare a clean tissue. Carefully retrieve the gemstone with tweezers and place the gemstone face down on the table (**Fig. 1.5**).

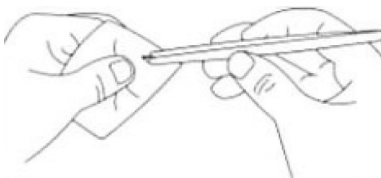


Fig. 1.5

Gently rub the table of gemstone against the tissue/jewellery cloth and place the gemstone on the centre of the Test Pad. Do not use fingers to place the gemstone on test pad as fingerprint will affect the test results. (**Fig. 1.6**).

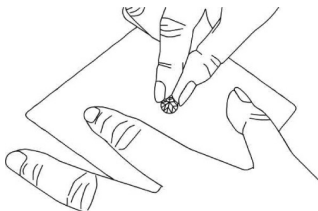


Fig. 1.6

## 2. PERFORMING A TEST with your Presidium Refractive Index Meter II

Remove the cylinder and place a well-cleaned, polished gemstone at the centre of the pad. Make sure that the gemstone is well centered to prevent reading error (**Fig. 2.1**).

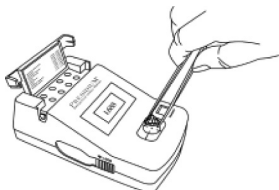


Fig. 2.1

Cover the gemstone with the recessed cylinder (**Fig. 2.2**).



Fig. 2.2

The display window (**Fig. 2.3**) will show the Refractive Index of the gemstone.

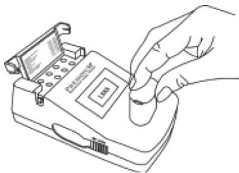


Fig. 2.3

Due to infra-red light source, it is essential that the facet placed over the test pad hole is at least 3mm in diameter.

### **PC Connectivity**

Presidium Refractive Index Meter II comes with a downloadable software providing access to more gemstones selection. Go to [www.presidium.com.sg](http://www.presidium.com.sg). This software is not yet compatible with Mac OS platform.

### 3. READING TEST RESULTS with your Presidium Refractive Index Meter II

---

The test results are indicated as follows:

- A Refractive Index Reference List is provided for easy reference to end-user. This list comprises common gemstones available in the market. The gemstones are arranged according to descending Refractive Index. Please refer to attached table.
- The list includes the range of refractive index of gemstones with respective tolerance provided in brackets.
- The tolerance in refractive index is due to the tolerance from the photo-sensor used.
- Example: The refractive index for sapphire is 1.757 (-0.016) – 1.790. The reading in bracket refers to the tolerance. In other words, the R.I. reading of sapphire from the unit ranges from 1.741 – 1.790.
- In case of a borderline reading, clean the stone and pad again before the next test and/or move stone slightly off center. By repositioning the stone, a distorted reflection from a scratched area of the surface may be avoided. Repeat the test.

Synthetic Spinel/Synthetic Sapphire and High Zircon/GGG have overlapping Reflectivity Index. If performing a second test using the Presidium Gem Tester for further separation, the results indicated will be as follows:

- Synthetic Sapphire: needle goes to a high position in the red zone.
- Synthetic Spinel: Needle goes about halfway into the red zone.
- High Zircon: Needle goes 2/3 into the red zone.
- GGG: Needle goes 1/3 into the red zone

#### **4. TAKING CARE of your Presidium Refractive Index Meter II**

---

- Always keep the Test Pad free from dust and replace the Protective Cover immediately after use.
- Do not use the tester when “Low Batt” indicator appears. Change to new batteries before performing any test.
- Do not leave worn out or dead batteries in the battery compartment as they may corrode, leak or damage the tester. Batteries should be removed when the tester is to be stored for an extended period of time.

Your tester is a product of extensive design and craftsmanship and should be treated with care.

Thank you for taking time to go through the user handbook which will enable you to understand your recent purchase better.

Presidium also recommends that you register your warranty by sending the warranty registration card to us or registering online at <http://www.presidium.com.sg/>