

GlossTector 20°60°85° *Plus*

OPERATION MANUAL



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1. General Information

Please read this manual carefully before using!

The gloss meter in this manual means specular gloss or coating film gloss.

To use this machine, it should avoid strong electromagnetic interference.

2. Product Descriptions

The GM series gloss meter are designed and manufactured according to following international and national standards:

ISO2813, ISO7668

ASTM D523, ASTM D2457,

GB/T 9754, GB/T13891, GB/T7706, GB/T8807

The technical parameters conform to JJG696-2002. The gloss values can be traced to those of the National Primary Standards in SIMT in the P.R. China.

3. Main Applications

Decorative materials, such as marble, granite, polishing brick, ceramic, mould and so on.

All kinds of coating and surfaces, such as paints, varnishes, printing ink, automaker, leather craft. The other kinds of materials and objects, such as, woodenware, plastic, paper, etc.

4. Specification

Measuring angle	20°, 60°, 85°	
Measuring Range (Gu)	(20°)0.0~120 (60°)0.0~120 (85°)0.0~120	(20°)120~2000 (60°)120~1000 (85°)120~160
Measuring Spot (mm)	(20°)10x10 (60°)9x15 (85°)5x38	
Resolution (Gu)	0.1	1
Repeatability (Gu)	0.2	0.2%
Reproducibility (Gu)	0.5	0.5%
Deviation (Gu)	±1.5	±1.5%
Zero-point Deviation (Gu)	0.2	
Operating Temperature (°C)	10~40	
Storage Temperature (°C)	-10~70	
Relative Humidity	Up to 85%, no moisture condensation for operation	
Power Supply	AA battery * 4, 5V rechargeable or alkaline	
Dimension (mm)	164 x 58 x 88	

5. Features

One key to get gloss values in a measurement. The incident angle of light conforms to ISO 2813 in order. The three incident angle of light is 20°, 60° and 85°

Optional angle groups. You may complete a measurement at ALL three angles, you can also choose to do a measurement at two or one angle.

Friendly display interface.

Large memory for measurement data. In 3-angle, more than 900 measurements or 30 groups can be allowed to store in memory.

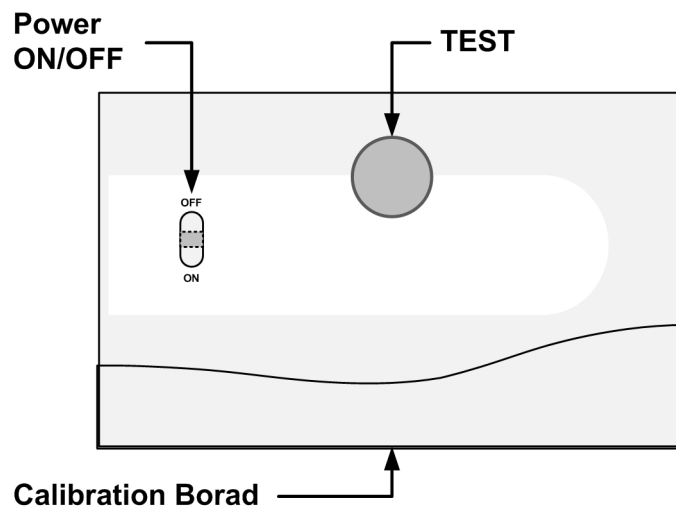
Inquiry for data in memory.

Indicator for low battery and full memory.

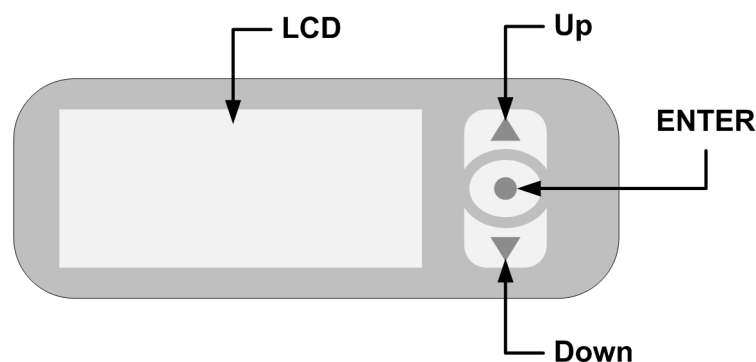
6. Operation instruction

6.1. Layout of instrument

Back View



Top View



6.2. Power ON/OFF

Lay the main unit into the holder, and then push **POWER** button to

position “ON” to turn on the meter. Push **POWER** button to position “OFF” to turn off the meter. After power on the meter, it performs self-calibrating.

CALIBRATION	H
20	PASS
60	PASS
85	PASS
CALIBRATION PASS	

Press **TEST** button, the tester will enter measuring mode.

BASIC MODE	GU
ANG	GLOSS
20	
60	
85	

Under measuring mode, take off the holder, put the tester on the surface of sample and press **TEST** button to get gloss value.

BASIC MODE	GU
ANG	GLOSS
20	93.8
60	95.1
85	99.7

6.3. Menu

Press **ENTER** button to enter menu. Press **UP** or **Down** to select different items from the menu.

MENU>
MEA RECORD
SAMPLE/DIF
CONFIG
CHOOSE MODE
USB
BLUETOOTH
SD CARD
VERSION

*You can switch to measuring mode by pressing **ENTER** on MENU item.*

6.4. Measuring Angle Selection

Before measuring, please go to MENU→CONFIG→ANGLE CHOOSE menu to setup ANGLE. The default angle is 20, 60 and 85. In this manual, we use 60 degree as sample. For detailed instruction, please refer to 6.8.2 Angle

Choose

6.5. Measuring Mode Selection

There are four options under “CHOOSE MODE ”: “BASIC MODE ”, “SAMPLE MODE”, “STATISTICS” and “CONTINUOUS”.

```
CHOOSE MODE>
| BASIC      #
| SAMPLE
| STATISTICS
| CONTINUOUS
```

After pressing **ENTER** button to select one mode, “#” is displayed to indicate current measuring mode.

BASIC MODE is default measurement mode; it doesn't support the function of saving and statistic.

SAMPLE MODE is only for collecting standard sample data.

STATISTICS MODE has statistic and saving measuring data functions.

Before measuring, standard sample value and tolerance should be setup first. When measuring, it displays gloss value and statistic info such as difference, average, min., max., range and so on.

CONTINUOUS MODE is the expansion of “statistic mode”, it used to automatically repeated measure products; the times of measurement and measuring interval are adjustable. Before measurement, standard sample value and tolerance should be setup first.

6.6. Measuring

6.6.1. Measuring in BASIC MODE

Select MENU→CHOOSE MODE → BASIC MODE and then press **ENTER** button, BASIC MODE will be marked as current measuring mode.

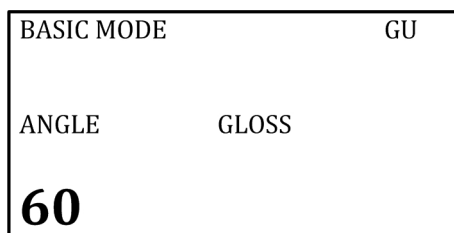
```
CHOOSE MODE>
| BASIC      #
| SAMPLE
| STATISTICS
| CONTINUOUS
```

Press **TEST** button to save or cancel.

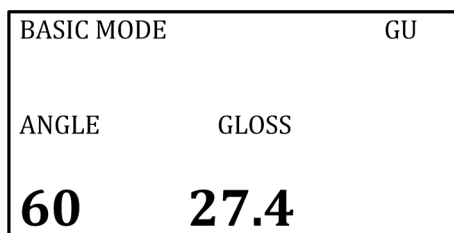
```
SAVE?
<YES> <NO>
```

Press **ENTER** to save and then return to the root menu. Select “MENU>”

and press **ENTER**, the meter will enter basic measuring mode.



In the basic measuring mode, press the **TEST** Button, a measurement will be completed. Meanwhile the result will be displayed in the LCD as below.

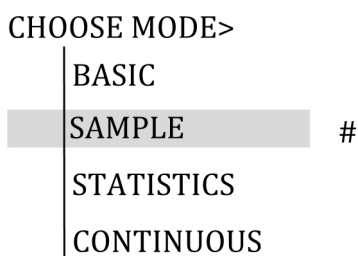


You can go back to root MENU by pressing **ENTER** button.

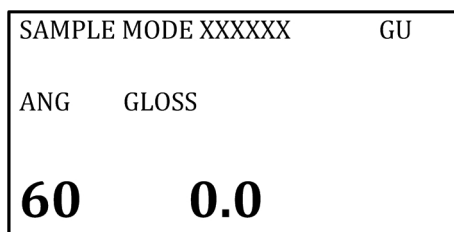
6.6.2. Sample Mode

Before enter "STATISTIC" and "CONTINUOUS" modes, it should enter "SAMPLE MODE" first to collect standard sample data. After collecting standard sample value and setting up tolerance, enter "STATISTIC" and "CONTINUOUS" modes.

Select MENU→CHOOSE MODE → SAMPLE MODE and then press ENTER button, SAMPLE MODE will be marked as current measuring mode. Then press **TEST** and **ENTER** to save it.



Select "MENU>" and press **ENTER** button, the meter will enter sample measuring mode.



6.6.3. Collecting Sample

Put the meter on the surface of sample material and press **TEST** button to collect the standard sample, then the SAMPLE NAME interface displayed

on the LCD. The sample name can be setup in this interface.

SAMPLE NAME
SMP001
CONFIRM--<TEST>

The name includes two parts, one is 3 alphabets and the other is 3 numbers. The default name is SMP001. You can change it by yourself. Firstly, use **UP** and **DOWN** button to move the cursor “|” to the position need to be modified; secondly, press **ENTER** button to confirm; thirdly, press **UP** and **DOWN** to modify the alphabet or number, at last press **TEST** button to save the sample name. Collecting sample is finished.

SAMPLE MODE ABC123	GU
ANG	GLOSS
60	49.5

6.6.4. Setting Tolerance

MENU>
MEA RECORD
SAMPLE/DIF
CONFIG
CHOOSE MODE
USB
BLUETOOTH

After collecting sample, choose MENU> → SAMPLE/DIF and then press **ENTER** to set up tolerance for the selected sample.

CHOOSE SAMPLE	
CUR DIF	ABC123
	0.0
ENTER CONFIG PAGE--<TEST>	
CHOOSE CUR SAMPLE---<ENTER>	
1/2	

Press **UP** or **DOWN** to switch among difference samples. Press **ENTER** to select current sample. Press **TEST** button to setup tolerance for current sample.

SET DIFFERENCE	
SAMPLE NAME	ABC123
SET DIF	2.5
CONFIRM--<TEST>	

Firstly, use **UP** and **DOWN** button to move the cursor “|” to the position need to be modified; secondly, press **ENTER** button to confirm; thirdly, press **UP** and **DOWN** to modify the number, at last press **TEST** button to save the sample tolerance and press **TEST** again to return to the root menu.

6.6.5. Statistic Mode

Select CHOOSE MODE → STATISTIC and then press **ENTER** button, STATISTIC will be marked as current measuring mode. Press **TEST** and **ENTER** to save it.

CHOOSE MODE>	
BASIC	
SAMPLE	
STATISTICS	#
CONTINUOUS	

Select “MENU> → CONFIG → MODE CONFIG → STATISTICS → DISPLAY ITEM and press **ENTER** button, the meter will enter DISPLAY ITEM interface.

MENU>		CONFIG>		MODE CONFIG>	
MEA RECORD		DATE/TIME		BASIC	
SAMPLE/DIF		CALIBRATION		SAMPLE	
CONFIG		FORMAT		STATISTICS	
CHOOSE MODE		MODE CONFIG		CONTINUOUS	
USB		SD CARD			
BLUETOOTH	→		→		→
		DISPLAY ITEM>			
		GLOSS	#		
		AVE	#		
		MAX			
		MIN			
		RANGE			
		DEV			
		DIF			
STATISTICS MODE		PASS/FAIL	#		
DISPLAY ITEM	→				

There are 8 parameters in display items group, these items can be displayed on the measuring interface. Use **UP** or **DOWN** button to select the item needed and press **ENTER** to confirm. The mark “#” means this item is selected. You can mark 3 items at most, then press **TEST** and **ENTER** button to save the configuration.

Press **ENTER** continuously until the meter enters measuring interface, press **TEST** button to measure.

ABC123	TIMES: 4	UNIT: GU
ANGLE	GLOSS	AVE PASS
60		

6.6.6. CONTINUOUS Mode

Select MENU→CHOOSE MODE → CONTINUOUS and then press **ENTER** button, CONTINUOUS will be marked as current measuring mode. Press **TEST** and **ENTER** to save it.

```

CHOOSE MODE>
|
| BASIC
| SAMPLE
| STATISTICS
| CONTINUOUS #

```

Select “MENU> → CONFIG → MODE CONFIG → CONTINUOUS and press **ENTER** button, the meter will enter the interface as below.

```

CONTINUOUS>
|
| NUMBER
| DISPLAY ITEM
| INTERVAL

```

Select “NUMBER” and press **ENTER** to setup times of continuous measuring. Press **UP** or **DOWN** to change number from 10 to 99 and press **TEST** to save.

MEA NUMBER OF CONTINUE
N = 10

Select “DISPLAY ITEM” and press **ENTER** to setup items to display. There are 8 parameters in display items group, these items can be displayed on

the measuring interface. Use **UP** or **DOWN** button to select the item needed and press **ENTER** to confirm. The mark “#” means this item is selected. You can mark 3 items at most, then press **TEST** and **ENTER** button to save the configuration.

```

DISPLAY ITEM>
GLOSS          #
AVE            #
MAX
MIN
RANGE
DEV
DIF
PASS/FAIL      #
  
```

Select “INTERVAL” and press **ENTER** to setup time interval of continuous measuring. Press **UP** or **DOWN** to change number from 3 to 9 (second) and press **TEST** to save.

After configuration, press **ENTER** continuously until the meter enters measuring interface, the meter will measure automatically according to the predefined times and interval.

6.7. Measuring Data

```

MENU>
| MEA RECORD
| SAMPLE/DIF
| CONFIG
| CHOOSE MODE
| USB
| BLUETOOTH
  
```

The saved sample data can be chosen from the MENU> → MEA RECORD. Press **UP** or **DOWN** button to find the sample needed and then the corresponding information will be displayed in the screen.

CHOOSE THE SAMPLE	
NAME	VALUE
ABC123	60=49.5
TIME	2011/1/15/13/21/29
1/1	

After sample is selected, press **ENTER**, the below menu will display.

```

>VIEW RECORD
CLEAR ALL RECORDS
DELETE SAMPLE

```

Press **UP** or **DOWN** to select different items and press **ENTER** to confirm.
 Select "VIEW RECORD" to read the corresponding measurement records.
 Press **UP** or **DOWN** to read, there are 30 groups' data in each sample.

```

BROWSE RECORDS          GU
                           RECORD
                           60      59.8
TIME 2011/1/15/13/21/29
1/4

```

Select "CLEAR ALL RECORDS" to clear the records under this sample.
 Select "DELETE SAMPLE" to delete this sample with related measuring data.

Press **TEST** to go back the root menu.

6.8. Configuration

Select MENU→CONFIG and press **ENTER** to enter CONFIG menu.

```

CONFIG>
DATE/TIME
ANGLE CHOOSE
CALIBRATION
FORMAT
RESET CONFIG
MODE CONFIG
UNIT
BACK LIGHT
ATUO OFF

```

Press **UP** or **DOWN** to select different items to setup.

6.8.1. Setup Date and Time

Select DATE/TIME and press **ENTER**, the below interface will display.

```

DATE/TIME CONFIG
2011/01/06/17/20/54
|
<TEST> RETURN

```

Current date and time will be displayed on the LCD by the order:
 year/month/day/hour/minute/second. Press **UP** or **DOWN** to move the
 cursor and press **ENTER** to select the number needed, and then press **UP**

or **DOWN** to change its value. After change, press **TEST** to save or cancel.

6.8.2. Angle Choose

Select ANGLE CHOOSE and press **ENTER**, the below interface will display.

```
CHOOSE ANG>
|
| 20
| 60
| 85
| 20 60
| 60 85
| 20 60 85  #
```

Press **UP** or **DOWN** to select different items and press **ENTER** to confirm. The default setting is 20, 60 and 85.

6.8.3. Calibration

Select CALIBRATION and press **ENTER** to enter calibration menu.

```
CALIBRATION PAGE>
|
| CALIBRATION
| CALI_MODIFY
```

Select CALIBRATION and press **ENTER** to perform a calibration automatically. And the result will be shown in the LCD.

Select CALI_MODIFY and press **ENTER** to modify the calibration value.

Press **UP** or **DOWN** to move cursor. Press **ENTER** to select the number and then press **UP** or **DOWN** to modify the number. Press **TEST** for saving.

6.8.4. FORMAT

Select FORMAT and press **ENTER** to enter the format page. Press **UP** or **DOWN** to move between OK and CANCEL. Select OK to clear all data in memory. Or select CANCEL to exit.

6.8.5. RESET

Select RESET CONFIG and press **ENTER** to enter the reset page. Press **UP** or **DOWN** to move between OK and CANCEL. Select OK to reset the configuration to the factory default. Or select CANCEL to exit.

6.8.6. Mode Config

Select MODE CONFIG and press **ENTER** to enter the MODE CONFIG menu.

```

MODE CONFIG>
|
| BASIC MODE
| SAMPLE MODE
| STATISTICS
| CONTINUE

```

There is no need of any setting for the Basic model or the sample mode. For configuration of STATISTICS and CONTINOUS modes, please refer to and 6.5.6

6.8.7. Back Light

Select BACK LIGHT and press **ENTER** to enter the back light setting page. Press **UP** or **DOWN** to modify the duration of back light from 0 sec to 60 sec.

6.8.8. AUTO OFF

Select AUTO OFF and press **ENTER** to enter the AUTO OFF setting page. Press **UP** or **DOWN** to modify the time of auto power off from 1 min to 60 min. The default value is 15min.

6.8.9. Language

Select LANGUAGE and press ENTER to enter the LANGUAGE setting page. Press UP or DOWN to move between CHINESE and ENGLISH, then press **ENTER** to select LANGUAGE, press **TEST** and **ENTER** to save.

6.9. USB Communication

Connect PC and meter with USB cable, and then select USB from root menu and press **ENTER** to create USB communication between PC and meter.

Attention: The computer should have USB driver of this instrument, only with installed USB driver, the instrument can be connected successfully. USB driver will be found in the CD provided with the standard package.

6.10. Bluetooth

Select BLUETOOTH from root menu and press **ENTER** to confirm.

BLUE TOOTH WORKING

TEST -- <TEST>
RETURN -- <ENTER>

6.11. SD CARD (Optional)

Select SD CARD from root menu and press **ENTER**. Once SD card is found, system will create a file name in SD card. Press TEST button to save file. After the file is saved, system will write sample data into SD card.

6.12. Version

Select VERSION from root menu and press **ENTER**. The version of system will be displayed on the LCD.

7. PC software

7.1. Driver Installation

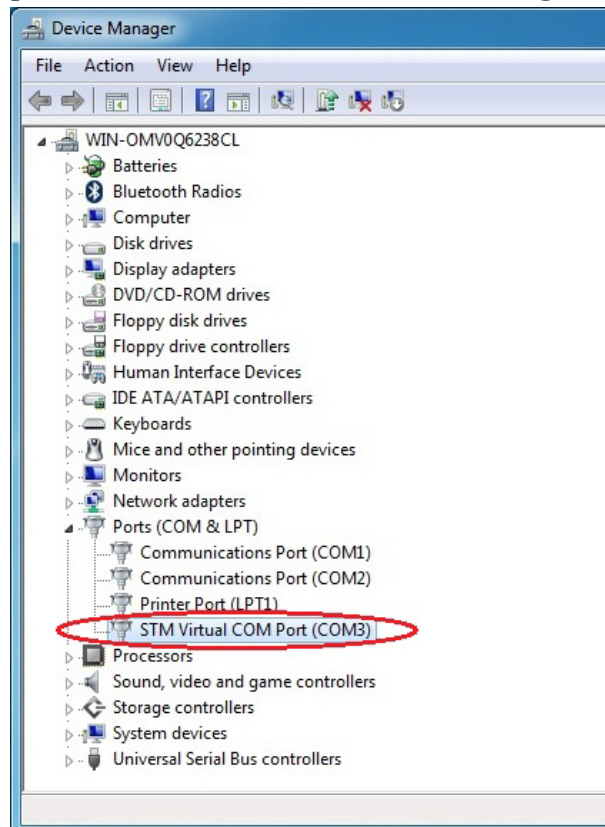
As the tester is connected with the PC for the first time, the Windows operating system will prompt “found new hardware”. Then select the folder for the hardware driver manually.

Folder: (x: \ is the Drive Letter of the application CD)

Windows 2000/XP driver is located in x:\ USB Driver\ Windows2000(XP)

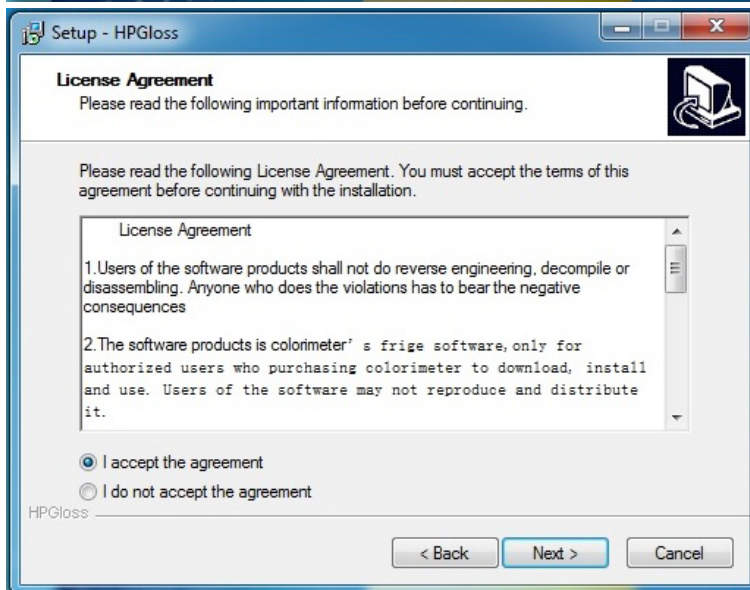
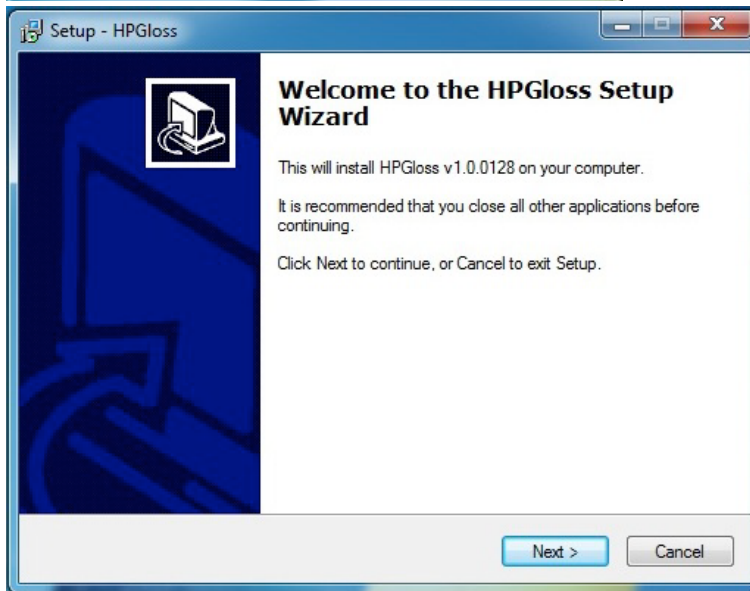
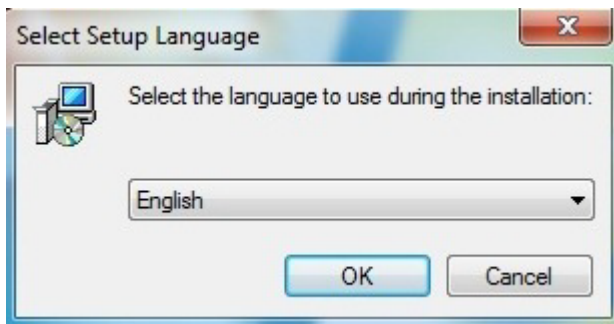
Windows 7 driver is located in x:\ USB Driver\ Windows7

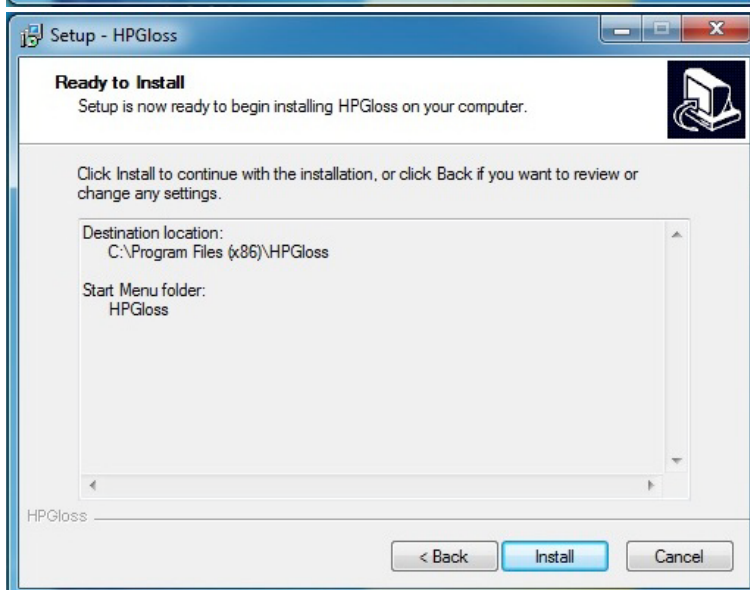
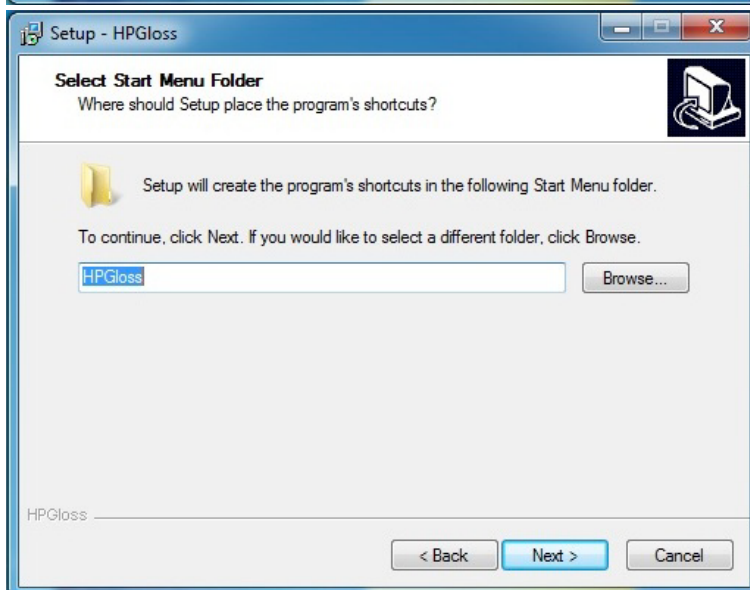
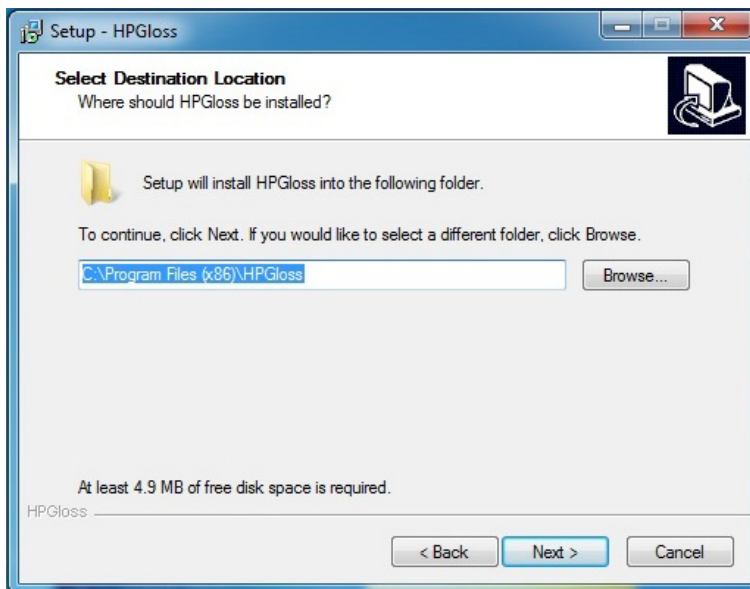
Follow screen tips to install driver. After installation, STM Virtual COM port will be found in Device Manager.

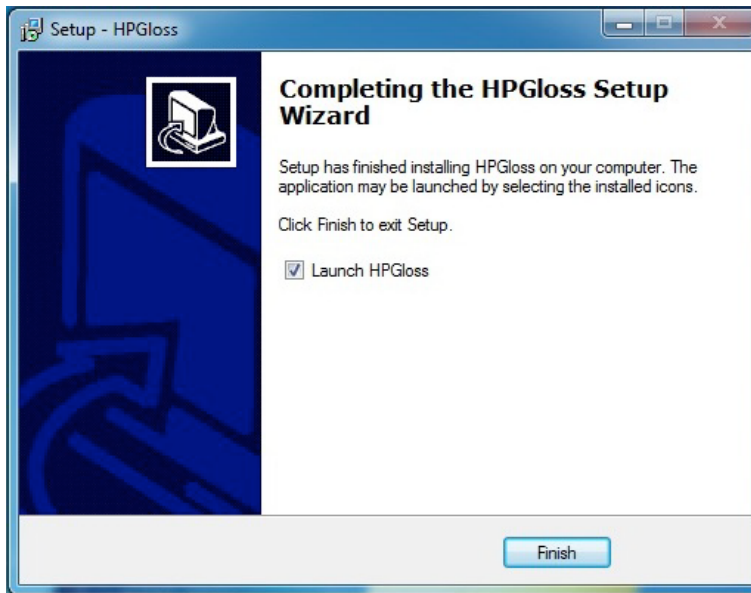


7.2. Program Installation

To run Setup Wizard, double-click the file Setup.exe in the software CD, then follow Setup Wizard to finish installation.







7.3. Create communication between the gloss meter and PC

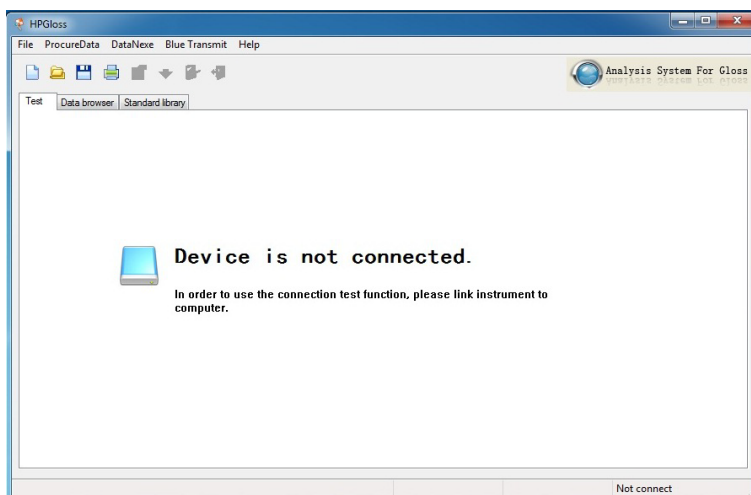
Before the transmission starts between gloss meter and PC, a RS232 communication should be created between them.

- 1) Connect the tester and PC with the USB cable supplied with the tester.
- 2) Power on the gloss meter.

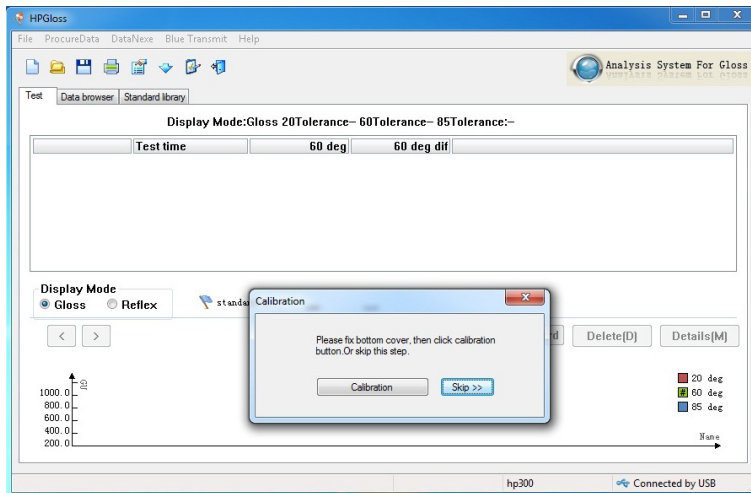
Select MENU --> USB from the gloss meter's menu.

USB CONNECTED will display after connecting successfully.

Please note the gloss meter can communicate with PC only in this mode.



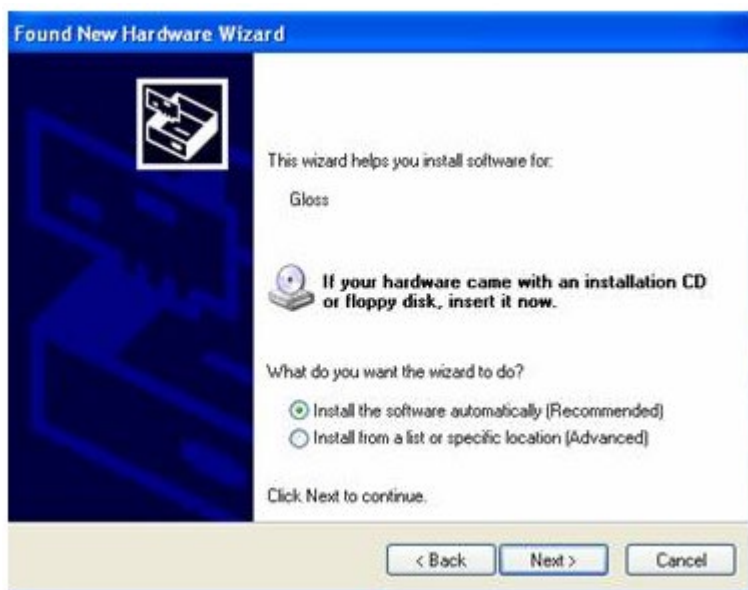
Not connected.



Connected.

7.4. Bluetooth driver installation

- 7.4.1. Insert Bluetooth adapter to PC, "Find new hardware" shows, choose "Setup software automatically".



Choose "Next".

- 7.4.2. Double-click Bluetooth icon marked by red circle, or right-click Bluetooth icon marked by red circle , then the following list shows , choose " Add Bluetooth".



Add a Bluetooth Device
Show Bluetooth Devices
Send a File
Receive a File
Join a Personal Area Network
Open Bluetooth Settings
Remove Bluetooth Icon

7.4.3. Then shows "Bluetooth setup guide".



7.4.4. Choose Bluetooth icon of Gloss meter---"HP Gloss".



7.4.5. Press the key "1234".

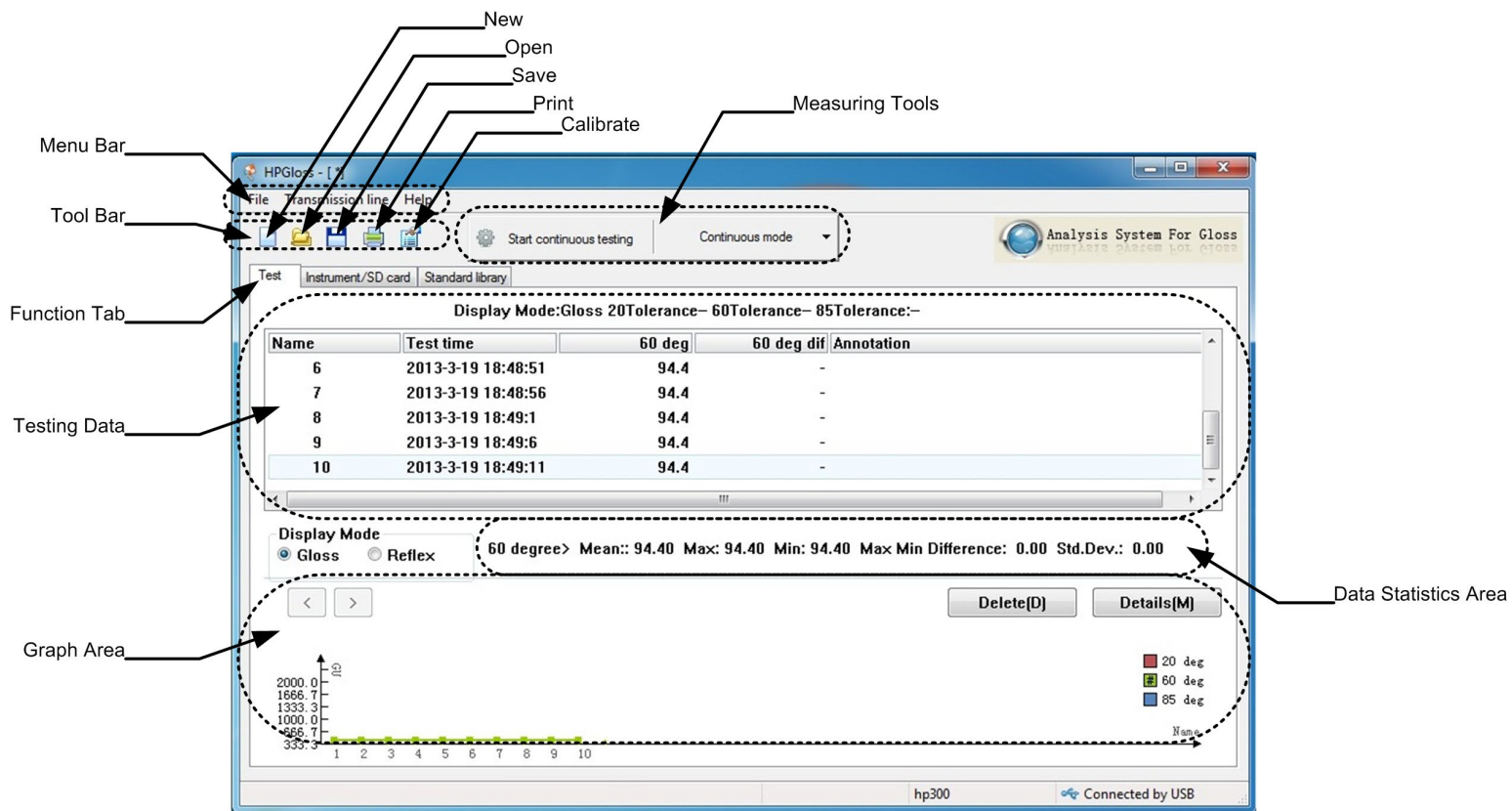


7.4.6. Bluetooth add finished.



Driver installation finished.

7.5. Interface Introduction



7.1. Print Report

After testing, click print button in the Tool Bar, a test report will be generated automatically.

Report of Gloss Testing

Submer Submission side

Devie 2010-4-16

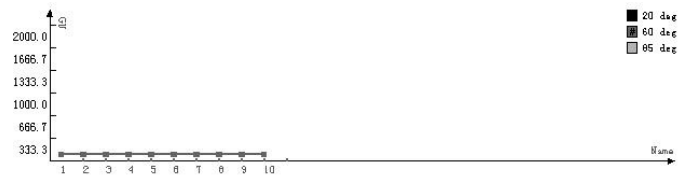
Detect Detect side

Date 2013-3-20

*: Standard sample Dif: 0.00 ☐ Out of dif beyond

Name	60 deg	60 deg dif	Annotation
1	94.3	-	
2	94.4	-	
3	94.4	-	
4	94.4	-	
5	94.4	-	
6	94.3	-	
7	94.3	-	
8	94.3	-	
9	94.3	-	
10	94.3	-	

Test Result





SaluTron Messtechnik GmbH
Dr.-Gottfried-Cremer-Allee 30/7 • D-50226 Frechen
Tel. +49 (0) 2234 9999960 • Fax. +49 (0) 2234 9999962
Email: info@salutron.de • www.salutron.de