

Datalogger and RS232 Interface

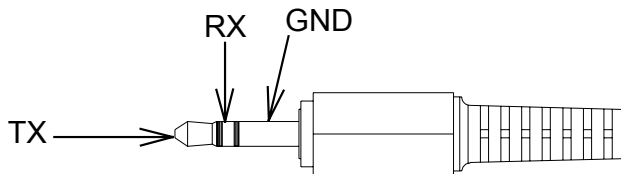
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RS232 Wiring Hardware

PC Interface Cable

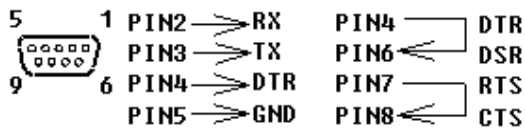
Meter side of PC Interface Cable

The RS-232 “phono” plug side of the Cable connects to the meter’s RS-232 phono jack. Refer to the diagram below for wiring information.

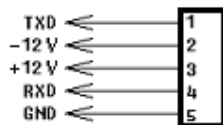


Computer’s Serial Port side of Interface Cable

The RS-232 “DB-9” side of the PC Interface Cable connects to the PC’s COM port. Refer to the diagram below for wiring information. Note that a USB to Serial Adapter may be used.



USB Diagram



RS232 Settings

9600, N, 8, 1

RS-232 Protocol

On Line Transfer (14 bytes data to PC)

Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
Start 02	N	HH	MM	LL	hh	ll

Byte8	Byte9	Byte10	Byte11	Byte12	Byte13	Byte14
Sign 0	Sign1	Sign2	Sign3	Sign4	Sign5	End 03

Details:

(1) Starting byte 02 (Byte1)

(2) Sign: (x): Don't care



Sign0

Sign0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	Up%	REF	Hold(D-H)	Up-AVG	Zero(x)	CAL	COMP	REL

Sign1

Sign1	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	STRAY	Down+	Light	lx	fc	cd	-h(lx)	-h(fc)

Sign2

Sign2	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	Down-AVG	READ	Cycle	Auto	-	Up+	Bettery	MMLLx1

Sign3

Sign3	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	Down%(x)	Time-hold	m-s	D-H	Stop(x)	INTV	Start(x)	No.

Sign4

Sign4	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	Hhllx0.1	Hhllx0.01	Hhllx0.001	MMLLx0.1	MMLLx0.01	MMLLx0.001	m	ft

Sign5

Sign5	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	(x)	(x)	CLR	Full	Setup	M	MM-SS	DD-HH

(3) LCD Displayed Data

MR Value (Byte6) : 00~99

A: X MM:FF:OL Cal Value: DDDD: FULL

(4) Stop Byte 03 (Byte13)

“A” command:

02 + AAh + Last Add (3 Bytes) + 03

Commands : (after “A” command)

“B”---Time “C”---Hold “D”---AVG “E”---Clear EEP “F”---Lx/Fc

“G”--- (%) “H”---Enter “J”---Mem “K”---Up “L”---Read

“N”---Down “O”---Pwr off “P”---Auto Rec “M”---Reply 1339R “X”---Comp

“Y”---02 + DD + hh + mm + ss + Intv mm + Intv ss + 03

“Z”---02 + CD + cd + CompStatus + CompH (2) + CompL (2) + 03

“Q”---02 + Read Auto Rec + 03

Comparator Status

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	(x)	Lx	Fc	Lx :x100 Fc:x10	Lx:x10 Fc:x1	Lx:x1 Fc:x0.1	Lx:x0.1 Fc:x0.01	Lx:x0.1 Fc:x0.001

“V” + CompStatus + CompH (2) + CompL (2) --- Setup Comp

“W” + mm + ss---Set up Intv

“S” + mm + ss---Set up H time

“I” + MM.mm---Set up cd distance

“T” + DD + hh + mm + ss---Set up Time

Auto Rec.s :

00 55 AA 00 + DDHHMMSS + Intv (2 Bytes)

+ Data1 + Data2 + Logger Status + Data1 + Data2 + Logger Status +

00 55 AA 00 + Intv + DDHHMMSS + Intv (2 Bytes)

+ Data1 + Data2 + Logger Status + Data1 + Data2 + Logger Status +

Data : (Data1 x 256 + Data2) (Lux)

Logger Status

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	Datax100	Datax10	Datax1	Datax0.1	Datax0.01	Datax100	Datax0.001	OL

Fc = Lux x 0.0929

Hardware Requirements and Setup

PC HardWare Requirements :

HDD, CD Rom, 486 PC or above, with available COM port
EGA or higher monitor
4M bytes or more memory size

PC HardWare Setup :

- 1) Switch off all power related to the PC
- 2) Connect the DB9 (female) end of the supplied RS-232 cable to available COM port
- 3) Switch on all related power
- 4) Connect the phono plug end of the RS232 cable to the meter

Software Requirements and Setup

- 1 Start up windows XP / 7 / 8 operating system
- 2 Close all other applications
- 3 Insert the disk in CD drive

To install Serial to USB driver, click

Meter Software

Follow the on-screen instructions.

1).



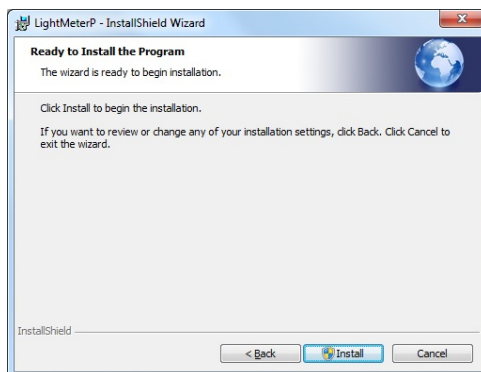
Setup will run automatically.

2).



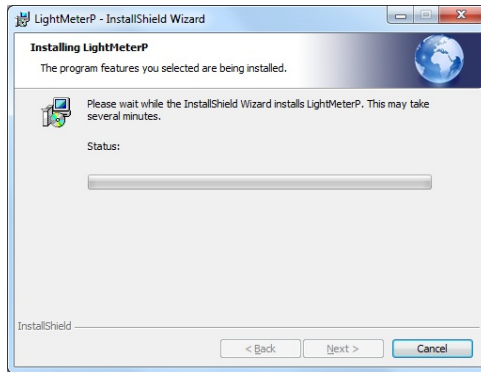
Click Next> button

3).



a. Click **I**nstall button

4).



If there shows a “User Account Control” window that asks
“Do you want to allow the following program from an unknown
publisher to make changes to this computer?”

Click **Yes** button

5).



Click **Finish** button to complete.

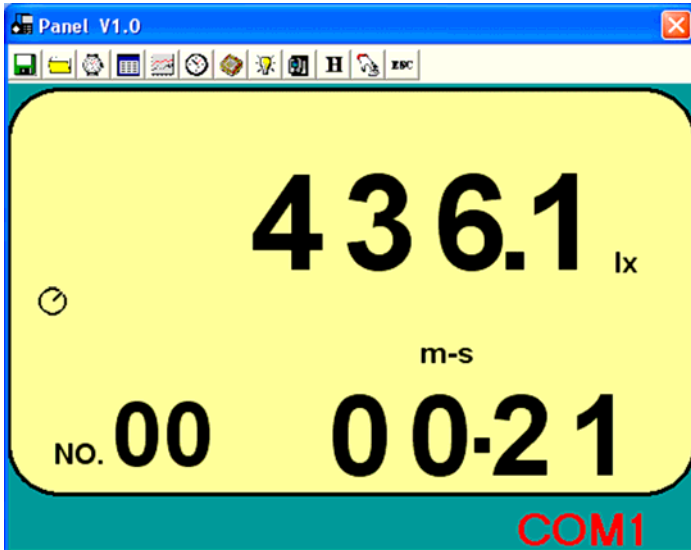
On-Line Operation

Run the software

1. Click "LightMeterP icon"
2. Click an available COM port




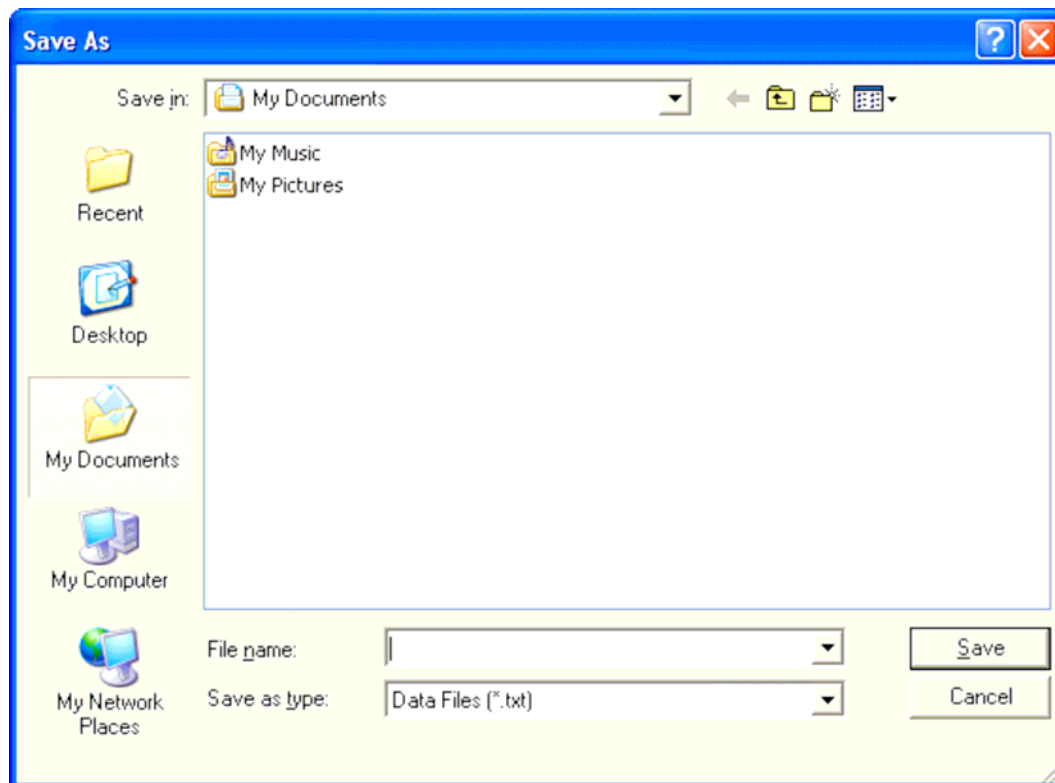
3. Main software screen



Record


Save to Hard Disk (PC)

Click  button. The dialog box shown below will appear.





Input a file name and then click "Save" to begin saving data to the file just named.




Click  button to stop recording.

Save to EEP Rom (Light Meter)

1. Automatically Record


Keep pressing the button  on the meter for about 3 seconds till 3 beeps heard and “INTV” shown on the LCD. Press the button  (momentarily) to stop recording.

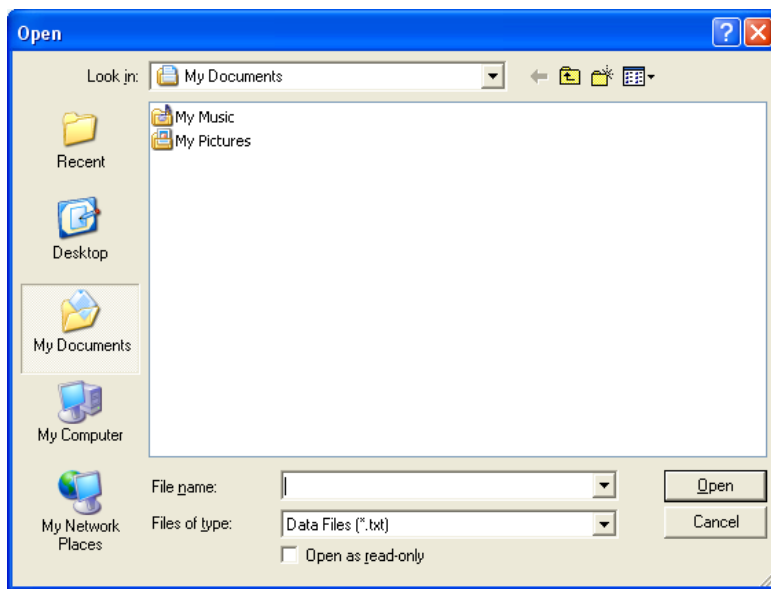
2. Manually Record

Press the button  momentarily to store one reading. The “**M**” symbol will flash once.

Download Data


1. Download Data from Hard Disk

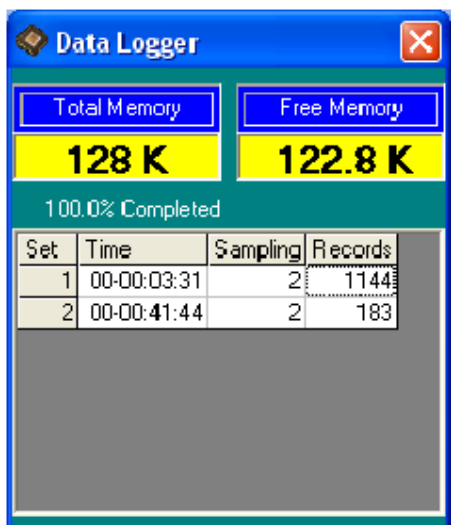
Click  button. The Open window, shown below, appears



Input the file that was selected earlier and then click the Open button.

2. Download Data from EEP ROM

Click  button. The Data Logger window, shown below, will open.

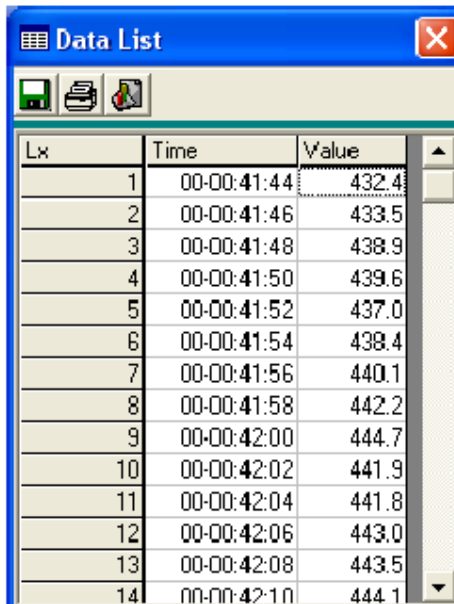


Data Logger

Total Memory: **128 K** Free Memory: **122.8 K**

100.0% Completed

Set	Time	Sampling	Records
1	00-00:03:31	2	1144
2	00-00:41:44	2	183

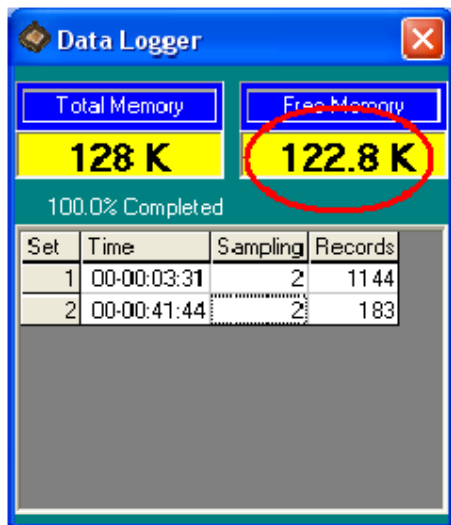


Data List

Lx	Time	Value
1	00-00:41:44	432.4
2	00-00:41:46	433.5
3	00-00:41:48	438.9
4	00-00:41:50	439.6
5	00-00:41:52	437.0
6	00-00:41:54	438.4
7	00-00:41:56	440.1
8	00-00:41:58	442.2
9	00-00:42:00	444.7
10	00-00:42:02	441.9
11	00-00:42:04	441.8
12	00-00:42:06	443.0
13	00-00:42:08	443.5
14	00-00:42:10	444.1

Click on a SET number to view the set's details. In the window at left top, there are 2 set from which to choose. The list at right top is an example of an opened set.

To erase saved data in EEP ROM, click the Free Memory label (refer to the below window)

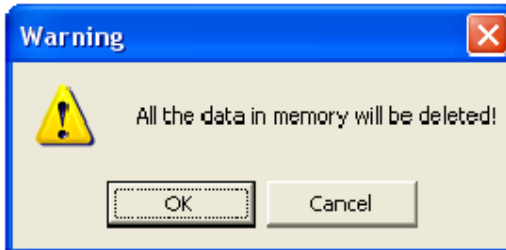


Data Logger

Total Memory: **128 K** Free Memory: **122.8 K**

100.0% Completed

Set	Time	Sampling	Records
1	00-00:03:31	2	1144
2	00-00:41:44	2	183



Warning

! All the data in memory will be deleted!

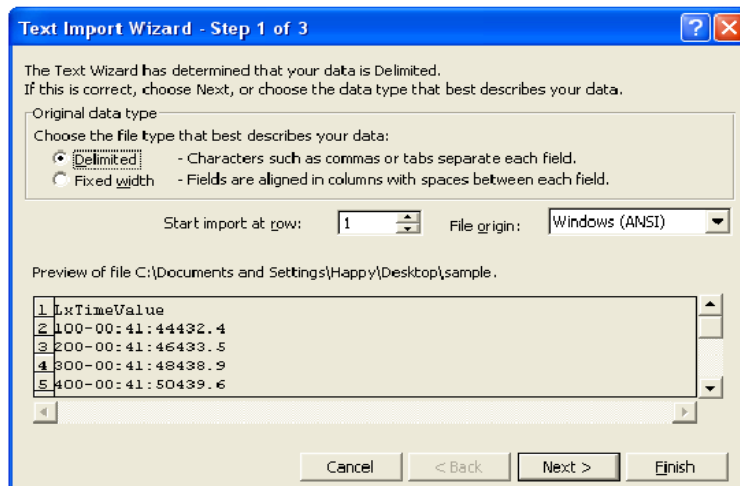
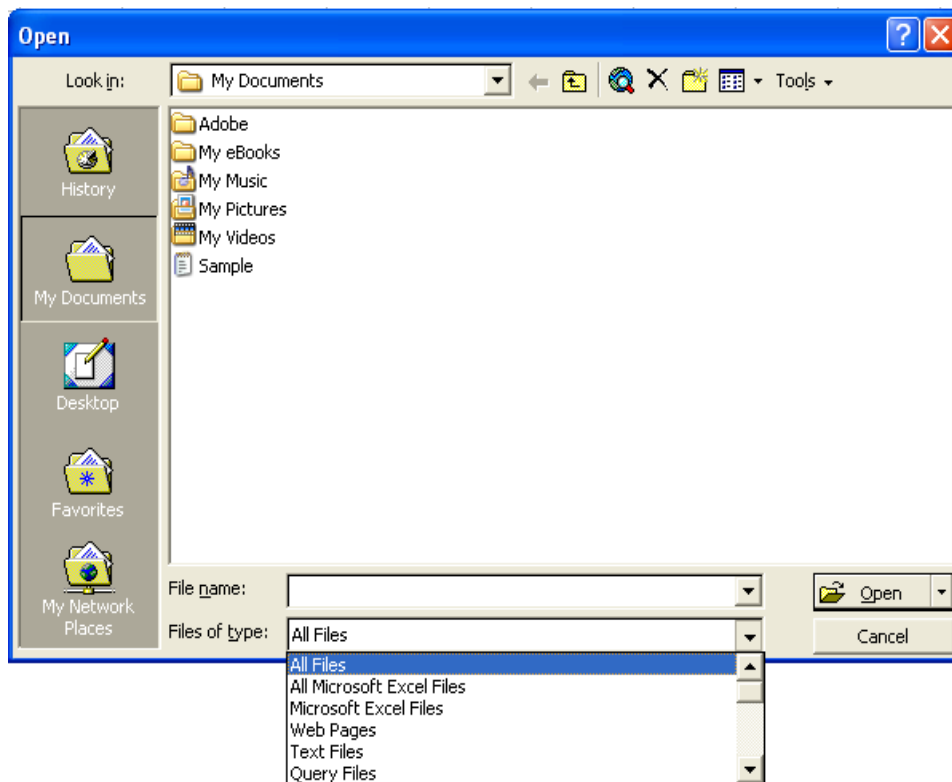
OK Cancel

Press OK to confirm.

Data Convert

Apply for Excel

Open Microsoft Excel, find the file that saved



Click Next> button

Text Import Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters:

☒ Tab ☐ Semicolon ☐ Comma
☐ Space ☐ Other:

☐ Treat consecutive delimiters as one

Text qualifier:

Data preview

Lx	Time	Value
1	00-00:41:44	432.4
2	00-00:41:46	433.5
3	00-00:41:48	438.9
4	00-00:41:50	439.6

Cancel < Back Next > Finish

Click Next> button

Text Import Wizard - Step 3 of 3

This screen lets you select each column and set the Data Format.

'General' converts numeric values to numbers, date values to dates, and all remaining values to text.

Advanced...

Column data Format:

☒ General
☐ Text
☐ Date: MDY
☐ Do not import column (skip)

Data preview

General	General	General	General
Lx	Time	Value	
1	00-00:41:44	432.4	
2	00-00:41:46	433.5	
3	00-00:41:48	438.9	
4	00-00:41:50	439.6	

Cancel < Back Next > Finish

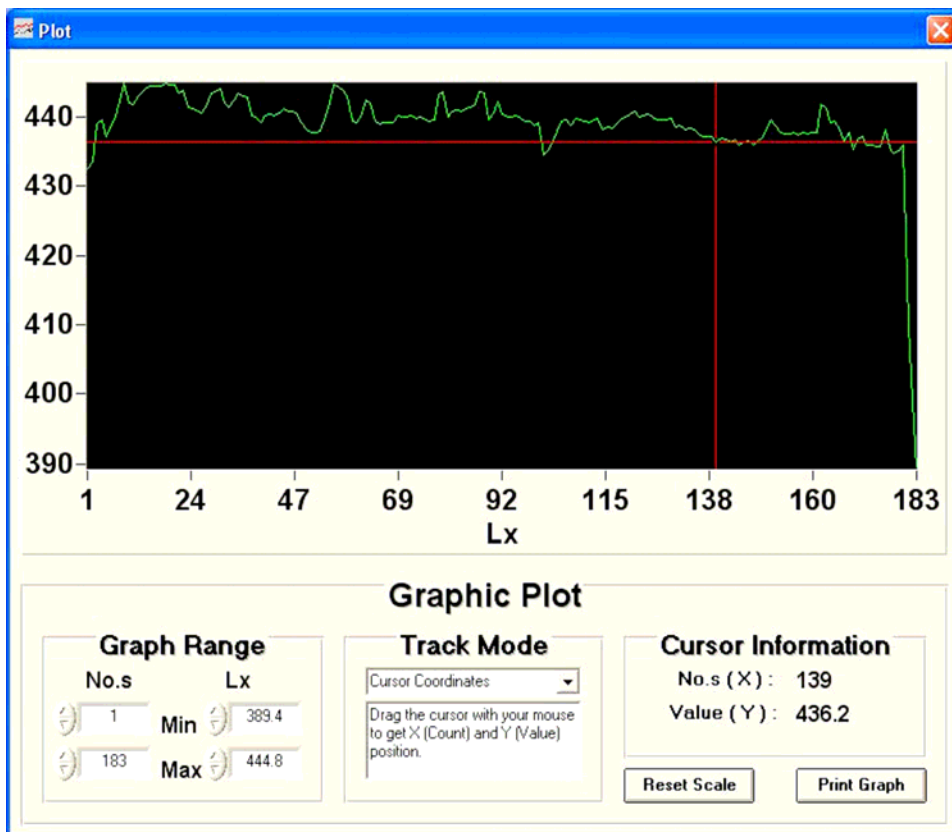
Click **Finish** button

	A	B	C	D	E	F
1	Lx	Time	Value			
2	1	00-00:41:4	432.4			
3	2	00-00:41:4	433.5			
4	3	00-00:41:4	438.9			
5	4	00-00:41:5	439.6			

Apply for Graph

Open a saved data file in the software program and then click .


sample		
Lx	Time	Value
1	00-00:41:44	432.4
2	00-00:41:46	433.5
3	00-00:41:48	438.9
4	00-00:41:50	439.6
5	00-00:41:52	437.0
6	00-00:41:54	438.4
7	00-00:41:56	440.1
8	00-00:41:58	442.2
9	00-00:42:00	444.7
10	00-00:42:02	441.9
11	00-00:42:04	441.8
12	00-00:42:06	443.0
13	00-00:42:08	443.5
14	00-00:42:10	444.1

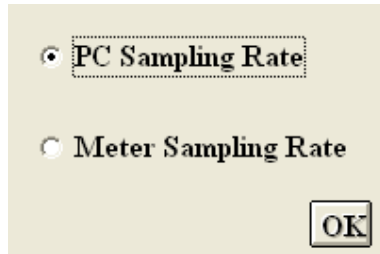


Sampling Time

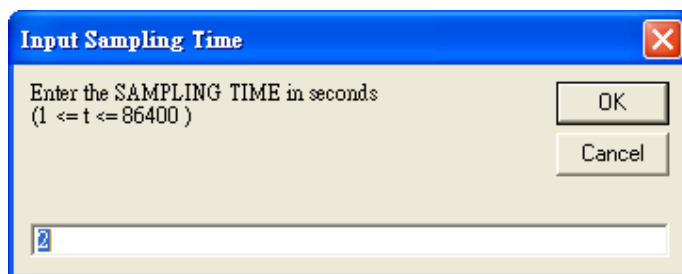
PC Sampling Rate:

(rate at which the PC collects readings while connected to the meter)

Click  on the **Menu Bar**.




Choose "PC Sampling Rate" and then click "OK" button.

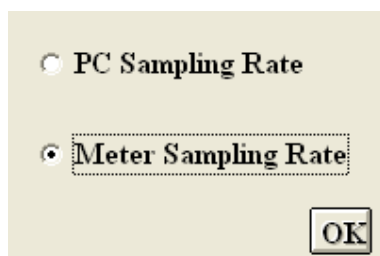


In the **Input Sampling Time** dialog box, input a sampling time and then click "OK" button to confirm.

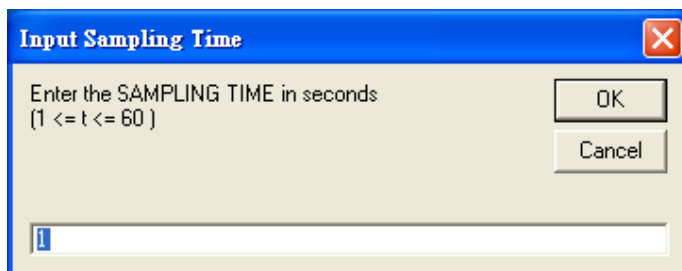
Meter Sampling Rate:

(rate at which meter stores readings)

Click  on the **Menu Bar**.




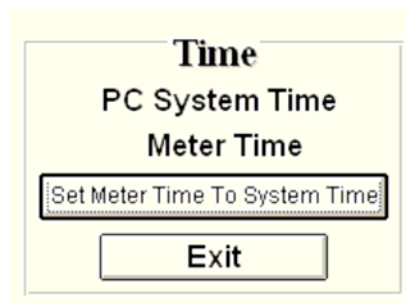
Choose "PC Sampling Rate" and then click "OK" button.



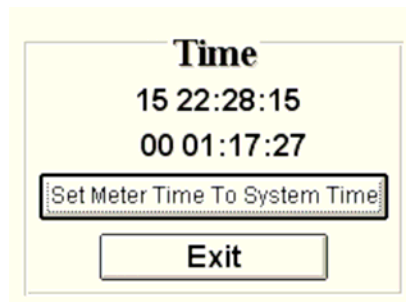
Input a sampling time and then click "OK" button to confirm.

RTC (Real Time Clock)

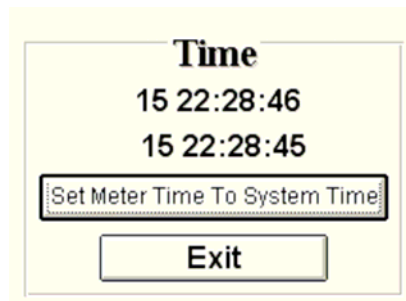
Click  on the **Menu Bar**. The window shown below will appear.




Click **PC System Time** to show PC System Time or **Meter Time** to show Meter Time.

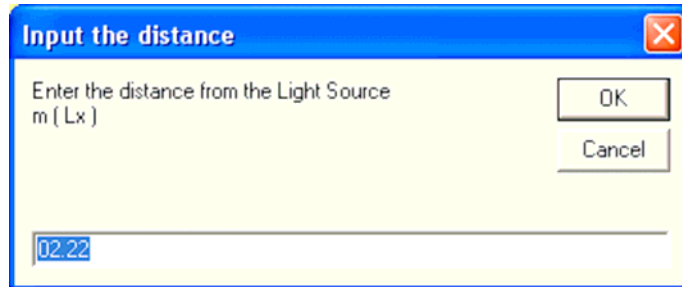


Click **Set Meter Time To System Time** to set the meter time to PC system time.



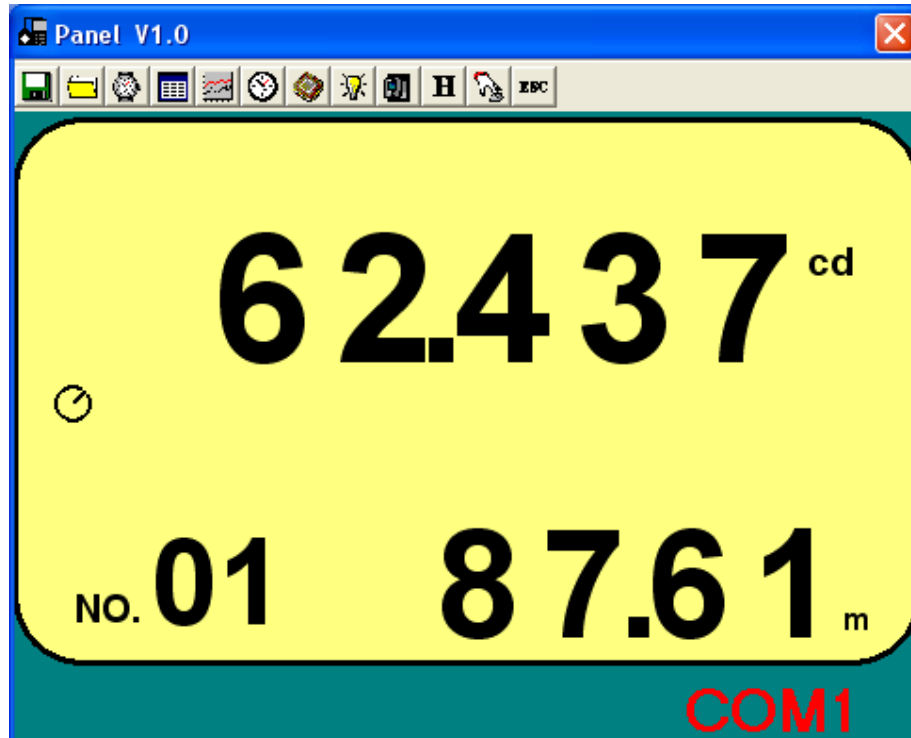
Luminous Intensity

Click  on the **Menu Bar**. The window shown below will appear.



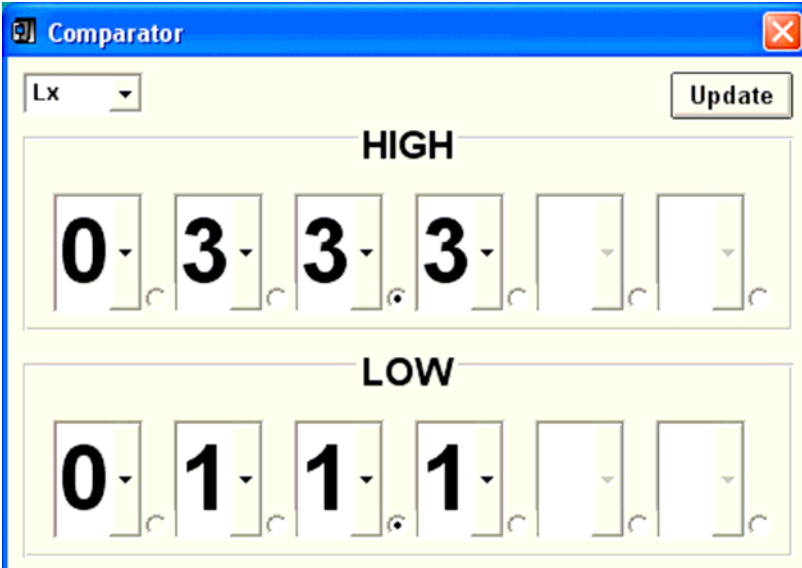
A dialog box titled "Input the distance" with a blue border and a close button (X) in the top right corner. The text inside says "Enter the distance from the Light Source m (Lx)". There are two buttons, "OK" and "Cancel", on the right side. At the bottom, there is a text input field containing the value "02.22".

Enter the distance from light source to the meter and click "OK" to confirm.



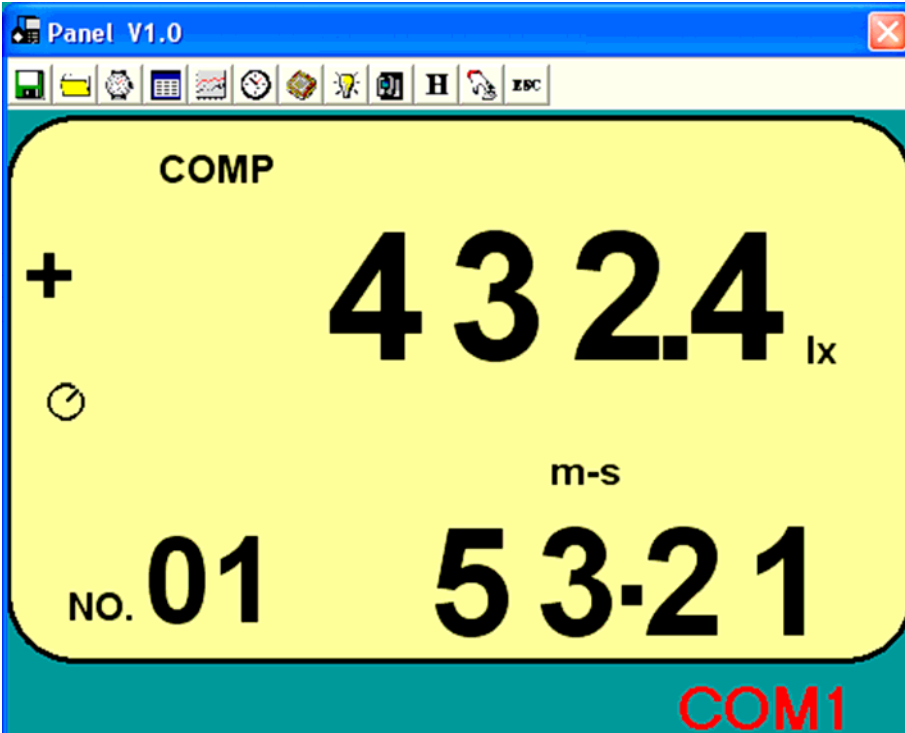
Comparator

Click  on the **Menu Bar**. The Comparator window, shown below, will open.



The Comparator window is a small application with a blue title bar labeled "Comparator". It features a dropdown menu at the top left showing "Lx" and an "Update" button at the top right. The main area is divided into two sections: "HIGH" and "LOW". Each section contains six digit boxes. In the "HIGH" section, the first four boxes contain the digits 0, 3, 3, and 3, while the last two are empty. In the "LOW" section, the first four boxes contain the digits 0, 1, 1, and 1, while the last two are empty.

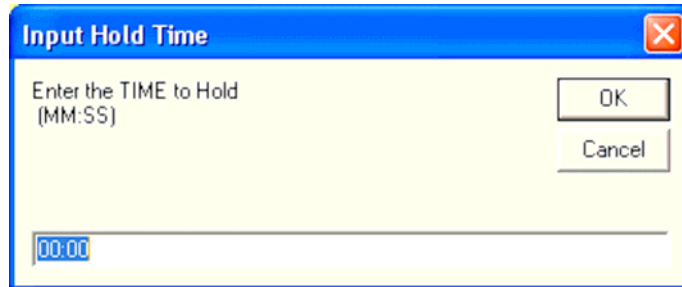
Set up the comparator settings and click "Update" button to confirm.



The Panel V1.0 window has a blue title bar and a toolbar with various icons. The main display area has a yellow background and shows the following information: "COMP" at the top; a large "+ 432.4 lx" in the center; a "m-s" label below it; "NO. 01" on the left and "53-21" on the right at the bottom; and "COM1" in red text at the bottom right corner.

Hold

Click **H** on the **Menu Bar**. The window shown below will appear.



The 'Input Hold Time' dialog box has a blue title bar with a close button. The main area is white and contains the text 'Enter the TIME to Hold (MM:SS)'. Below this is a text input field with '00:00' entered. To the right of the input field are two buttons: 'OK' and 'Cancel'.

Input the time to hold, and click “OK” to confirm.

