

ENGLISH

ET130



# INSTRUCTION MANUAL

## Light Meter

- MEASUREMENTS IN FOOT CANDLES (FC) AND LUX
- DATA HOLD
- MAX/MIN
- BACKLIT LCD SCREEN



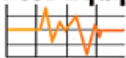
# KLEIN TOOLS®



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## GENERAL SPECIFICATIONS

Klein Tools ET130 is an easy-to-use precision light meter that measures illuminance levels in both Foot Candles (FC) and Lux.

- **Spectral Range:** 400 to 760 nm; white light CIE standard
- **Range:** 0 to 4,000 FC; 0 to 40,000 Lux (1 FC = 10.76 Lux)
- **Resolution:** 0.01 FC / 0.1 Lux
- **Repeatability:** +/- 3%
- **Accuracy:** +/- 5% reading +/-10 digits @ <10,000 Lux  
+/- 10% reading +/-10 digits @ >10,000 Lux
- **Sample Rate:** 2 times per second
- **Sensor:** Silicon photodiode with spectral response filter
- **Battery:** 9V
- **Operating Altitude:** 6562 ft. (2000 m)
- **Relative Humidity:** <80% non-condensing
- **Operating Temp:** 32° to 104°F (0° to 40°C)
- **Storage Temp:** 14° to 140°F (-10° to 60°C)
- **Dimensions:** 8.1" x 2.1" x 1.4" (206 x 54 x 36 mm)
- **Weight:** 5.5 oz. (156 g) including batteries
- **Tripod Mount:** 1/4-20 UNC
- **Calibration:** Accurate for one year
- **Drop Protection:** 3.3 ft. (1m)

*Specifications subject to change.*

## WARNINGS

***To ensure safe operation and service of the meter, follow these instructions. Failure to observe these warnings can result in severe injury or death.***

- Read the instructions to ensure safe operation.
- Meter is **NOT** insulated. Avoid contact with areas where energized conductive elements may be present.
- Always wear approved eye protection.

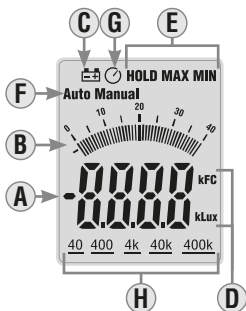
## FEATURE DETAILS

*Front of Meter*

*Back of Meter*



- |                           |                            |
|---------------------------|----------------------------|
| 1. Photodiode Sensor      | 6. RANGE/FC/LUX Button     |
| 2. 3-3/4 Digit LCD Screen | 7. Backlight Button        |
| 3. HOLD Button            | 8. 1/4-20 UNC Tripod Mount |
| 4. MAX/MIN Button         | 9. Battery Cover           |
| 5. Power Button           |                            |



### *LCD Display Detail*

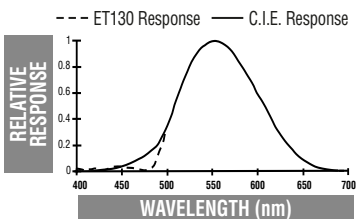
- |    |                            |
|----|----------------------------|
| A. | Measurement                |
| B. | Bar Graph                  |
| C. | Low Battery Indicator      |
| D. | Units (FC/Lux)             |
| E. | Function (HOLD/MAX/MIN)    |
| F. | Range (Auto/Manual)        |
| G. | Auto Power-Off Icon        |
| H. | Resolution (40/400/4K/40K) |

**NOTE:** *There are no user-serviceable parts inside meter.*

## FEATURE DETAILS

## SPECTRAL SENSITIVITY CHARACTERISTIC

The meter's spectral response aligns with the C.I.E. (International Commission of Illumination) standard.



## FUNCTION BUTTONS

## ON/OFF

A short press of the Power Button **5** will power on and off the meter.

## AUTO POWER-OFF

Auto Power-Off will automatically turn off the meter after 10 minutes of inactivity. When powered on, Auto Power-Off is enabled by default. A long press of the Power On/Off Button **5** for more than three seconds will disable the Auto Power-Off function, and the Auto Power-Off icon **G** will disappear from the display. A second long press will re-enable Auto Power-Off, and the Auto Power-Off icon will reappear.

## BACKLIGHT

When powered on, the backlight is off by default. Press the Backlight button **7** to turn the backlight on or off. Backlight will remain on until it or the meter itself is turned off.

## RANGE/FC/LUX

When powered on, the meter defaults to measuring in Foot Candles (FC). To switch to Lux, long-press the RANGE/FC/LUX button **6** for more than three seconds. A second long-press will switch back to FC. Note the Units icon **D** on the display.

Short presses of the RANGE/FC/LUX button will toggle the meter between Auto-ranging and Manual-ranging modes. Note the Range icon **F** on the display.

- When in Lux mode, short-pressing will toggle (in order) between Auto, Manual (400), Manual (4k) and Manual (40k).
- When in Foot Candle (FC) mode, short-pressing will toggle (in order) between Auto, Manual (40), Manual (400) and Manual (4k).

Note the measurement resolution icon(s) **H** on the display when toggling between Manual modes.

## DATA HOLD

Press the HOLD button **3** to hold the current measurement on the display. Press again to return to live measuring mode.

## MAX/MIN

Short presses of the MAX/MIN button **4** will toggle (in order) between Maximum Value (MAX), Minimum Value (MIN) and Measurement mode.

## OPERATING INSTRUCTIONS

1. Power on the meter, then use the RANGE/FC/LUX to select FC or Lux and to select Auto or Manual range, as described in **FUNCTION BUTTONS** section.
2. If desired, press the backlight button to turn on the display backlight, as described in **FUNCTION BUTTONS** section.
3. Face the photodiode sensor horizontal to the light source, and read LCD display.
4. If desired, use the function buttons to select HOLD or MAX/MIN, as described in **FUNCTION BUTTONS** section.
5. If desired, the meter can be mounted to any standard 1/4-20 tripod via the tripod mount **8** on the back of the unit.

### LIGHTING TYPE CORRECTION FACTORS

The meter is calibrated under a standard tungsten light source of 2856°K. If the meter is to be used under a different type of light, the correction factors below should be applied for maximum accuracy:

|                          |      |                             |      |
|--------------------------|------|-----------------------------|------|
| <b>Incandescent</b>      | 1.00 | <b>Daylight fluorescent</b> | 0.99 |
| <b>Daylight</b>          | 1.00 | <b>Mercury Lamp</b>         | 1.14 |
| <b>Metal Halide</b>      | 1.00 | <b>Sodium Lamp</b>          | 1.22 |
| <b>White fluorescent</b> | 1.00 |                             |      |

### IES RECOMMENDED ILLUMINATION\*


| Location        |                               | Lux        | FC      |
|-----------------|-------------------------------|------------|---------|
| <b>Office</b>   | Conference Room               | 200-750    | 18-70   |
|                 | Office area                   | 500-750    | 47-70   |
|                 | Lobbies, lounges              | 100-200    | 9-18    |
| <b>School</b>   | Auditorium, Gymnasium         | 100-300    | 9-28    |
|                 | Class room                    | 200-750    | 18-70   |
|                 | Library, Drafting, Laboratory | 500-1500   | 47-140  |
| <b>Hospital</b> | Rooms                         | 100-300    | 9-28    |
|                 | Emergency Room                | 500-1000   | 47-93   |
|                 | Operating Room                | 1000-2000  | 93-186  |
| <b>Factory</b>  | Packing work                  | 150-300    | 14-28   |
|                 | Parts assembly                | 1500 -3000 | 140-280 |
|                 | Inspection work               | 750-1500   | 70-140  |
| <b>Store</b>    | Stairs, Corridor              | 150-200    | 14-18   |
|                 | Stockroom                     | 100-300    | 9-28    |
|                 | Merchandising                 | 750-1500   | 70-140  |

\*The Lighting Handbook 10th Edition, Illuminating Engineering Society

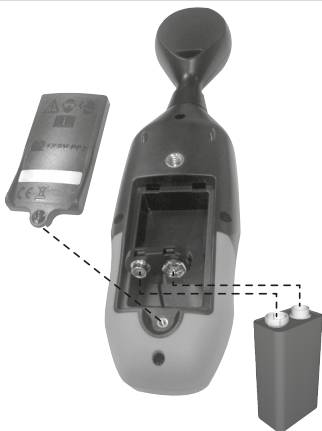
**NOTE:** 1 Foot Candle (FC) = 10.76 Lux

## MAINTENANCE

### BATTERY REPLACEMENT

When the  indicator is displayed on the LCD, the battery must be replaced.

1. Remove screw and remove battery door .
2. Remove and recycle spent 9V battery.
3. Install new 9V battery.
4. Replace battery door and fasten securely with screw.



## CLEANING

Be sure meter is turned off and wipe with a clean, dry lint-free cloth. **Do not use abrasive cleaners or solvents.**

## STORAGE

Remove the battery when the meter is not in use for a prolonged period of time. Do not expose to high temperatures or humidity. After a period of storage in extreme conditions exceeding the limits mentioned in the General Specifications section, allow the meter to return to normal operating conditions before using.

## DISPOSAL / RECYCLE



Do not place equipment and its accessories in the trash. Items must be properly disposed of in accordance with local regulations. Please see [www.epa.gov](http://www.epa.gov) or [www.erecycle.org](http://www.erecycle.org) for additional information.

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