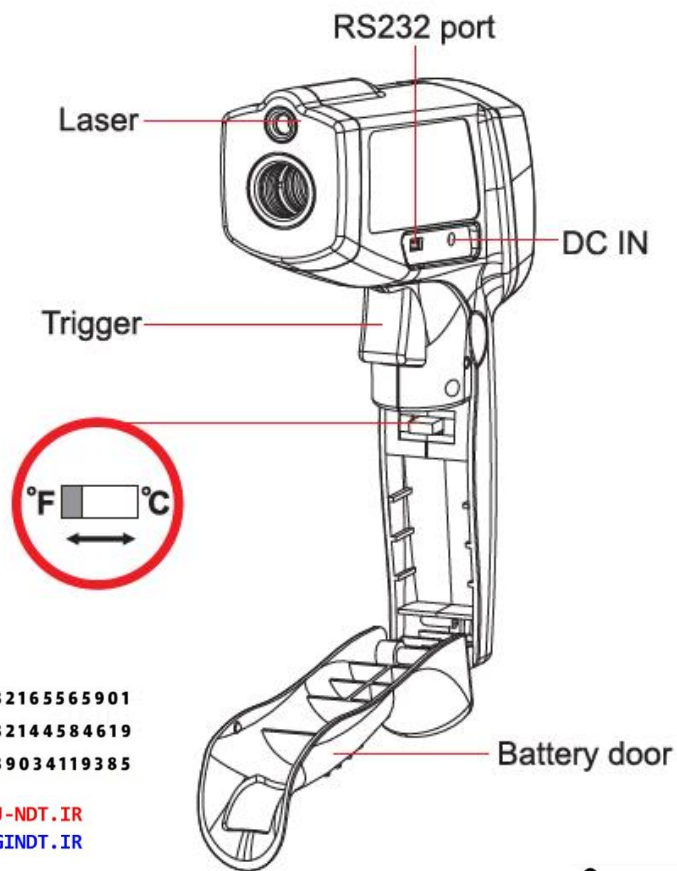


4. Discription of parts:



+982165565901  
+982144584619  
+989034119385

FGJ-NDT.IR  
DIGINDT.IR

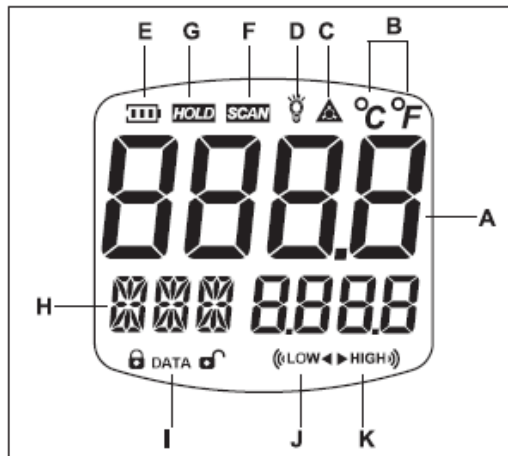
5. Buttons :



Tehran, Tehransar

## 6. LCD display :

- A: Temperature reading
- B: Temperature unit
- C: Laser on icon
- D: Backlight on icon
- E: Battery power icon
- F: Scanning icon
- G: Data hold icon
- H: Mode/emissivity icon
- I: Data store / recall icon
- J: Low temperature alarm icon
- K: High temperature alarm icon



## 7. Distance to spot size :

- 1). When take measurement, pay attention to the Distance to Spot Size. As the Distance (D) from the target surface increases, the spot size (S) of measuring area becomes larger.

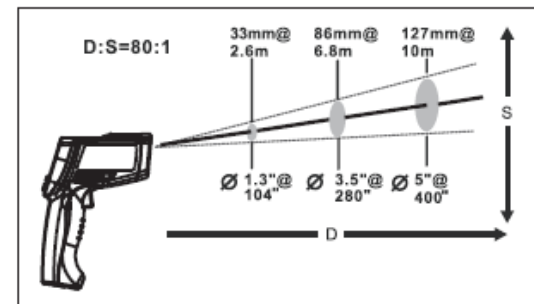
The Distance to Spot size of the unit is 80:1.

This unit equipped with a laser, which is only used for aiming.

- 2). Field of view:

Make sure the target is larger than the unit's spot size.

The smaller the target, the smaller measuring distance. When accuracy is critical, make sure the target is at least twice as large as the spot size.



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### 8. Emissivity :

Most organic materials and painted or oxidized surfaces have an emissivity of 0.95 (pre-set in the unit).

Set the EMS according to different objects surfaces, please refer to the right table for emissivity of normal materials.

Inaccurate readings will result from measuring shiny or polished metal surfaces.

To compensate for this, adjust the emissivity or cover the surface to be measured with masking tape or flat black paint. Measure the tape or painted surface when they reach the same temperature as the material underneath.

#### Note:

n.r in the table denotes NOT RECOMMENDED.

Material		Emissivity	Material		Emissivity
Aluminum	Non oxidized	0.1-0.2	Molybdenum	Oxidized	0.5-0.9
	Oxidized	0.4		Non oxidized	0.25-0.35
Alloy A3003	Oxidized	n.r	Brass	Polished	0.8-0.95
	Rough	0.2-0.8		Polished	n.r
	Polished	0.1-0.2		Oxidized	0.6
Chrome		0.4	Golden		0.3
Copper	Polished	n.r	Hastelloy	Alloy	0.5-0.9
	Rough	n.r	Cr / Ni / Fe Alloy	Oxidized	0.4-0.9
	Oxidized	0.2-0.8		Sanded	0.3-0.4
	PCB	n.r		Electroplishing	0.2-0.5
Iron	Oxidized	0.4-0.8	Cast iron	Oxidized	0.7-0.9
	Non oxidized	0.35		Non oxidized	0.35
	Rusty	n.r		Melted	0.35
	Melted	0.35	Forge pig	Rough	0.9
Aluminum	Polished	0.35	Magnesium		0.3-0.8
	Rough	0.65	Mercury		n.r
	Oxidized	n.r	Monel alloy(Ni-Cu)		0.3
Nickel	Oxidized	0.8-0.9	Platinum	Monel alloy	n.r
	Electrolytic	0.2-0.4	Silver		n.r
Copper	Cold rolling	0.8-0.9	Stainless steel		0.35
	Polished	n.r	Tin	Non oxidized	0.25
	Polishing plate	0.35	Asbestos		0.9
	Melted	0.35	Ceramice		0.4
	Oxidized	0.8-0.9	Concrete		0.65
Titanium	Polished	0.5-0.75	Tungsten		n.r
	Oxidized	n.r		Polished	0.35-0.4
Zinc	Oxidized	0.6	Carbon	Non oxidized	0.8-0.95
	Polished	0.5		Graphite	0.8-0.9

## Operation:

### 1. Turn ON/OFF :

#### a. Install / replace battery:

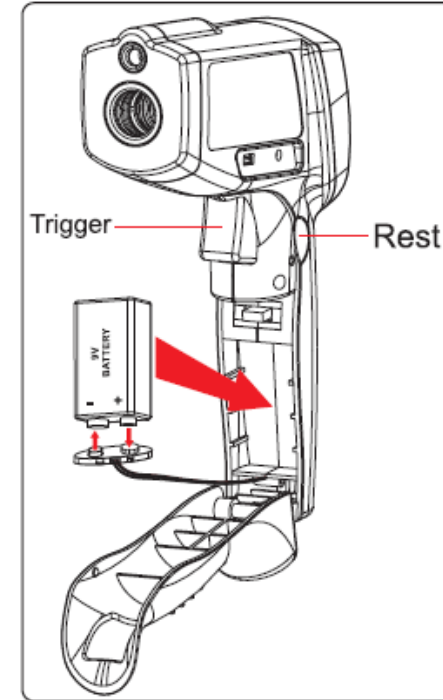
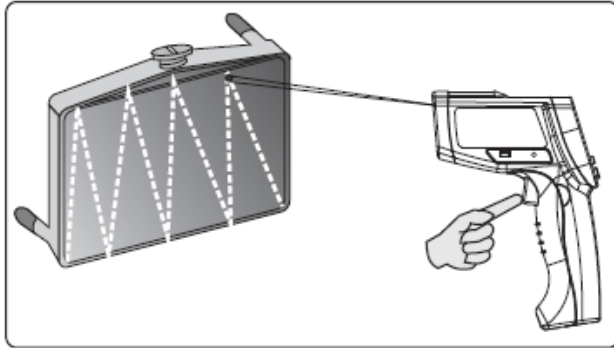
Open the battery door and insert a 9V alkaline battery correctly.  
Then close the battery door.

#### b. Turn ON/OFF:

Pull the trigger until a “Bi...Bi...” sound appears. The unit turns off automatically if there is no further operation in 30 seconds.

### 2. Locate hot/cold spot:

To find a hot/cold spot, aim the thermometer outside the area of interest, then scan across with up and down motion until you locate the hot/cold spot. As shown in the following figure :



### 3. Measurement:

- Trigger: pull the trigger to turn on, LCD displays VERXX software version for 1 second, and the temperature reading. SCAN and EMS(preset emissivity 0.95) displays at the same time. Release the trigger, the temperature will be held automatically, LCD display the temperature reading and HOLD icon.

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Specification	GM1850	GM2200
Temperature range	200 ~ 1850°C (392 ~ 3362°F)	200 ~ 2200°C (392 ~ 3992°F)
Accuracy	200°C(392°F)~ 450°C(842°F): ±2°C or ±2% 450°C(842°F)~ 1100°C(2012°F): ±3°C or ±3% 1100°C(2012°F)~ 1850°C(3362°F): ±4°C or ±3% whichever is bigger	200°C(392°F)~ 450°C(842°F): ±2°C or ±2% 450°C(842°F)~ 1100°C(2012°F): ±3°C or ±3% 1100°C(2012°F)~ 2200°C(3992°F): ±4°C or ±3% whichever is bigger
Repeatability	1% of reading or 1°C	1% of reading or 1°C
Time response	500 mSec, 95% response	500 mSec, 95% response
Spectral response	900~1700 nm	900~1700 nm
Emissivity	0.10-1.00adjustable (pre-set 0.95)	0.10-1.00adjustable (pre-set 0.95)
Ambient operation range	0 ~40°C (32 ~ 104°F)	0 ~40°C (32 ~ 104°F)
Relative humidity	10-80% RH noncondensing	10-80% RH noncondensing
Storage	-20 ~ 60°C (-4~140°F)≤85%, without battery	-20 ~ 60°C (-4~140°F)≤85%, without battery
Weight / Size	270G(without battery) ; 141 x 60 x 220mm	270G(without battery) ; 141 x 60 x 220mm
Power	9V Alkaline battery or 9V 500mA DC IN	9V Alkaline battery or 9V 500mA DC IN
Battery life(alkaline)	Laser Models:10 hrs	Laser Models:10 hrs
Distance to spotsize	80:1	80:1