

## Reference Thermometer Type LR-Cal LRT 750 Comparison Reference for thermometers

- check and calibrate temperature by comparison

The reference thermometer **LR-Cal LRT 750** is a comparison reference for checking and calibrating all kind of thermometer.

The system consists of a battery powered digital handheld indicator and a pre-aged precision sensor with temperature range  $-200\dots+450^{\circ}\text{C}$ .



### Technical Data LR-Cal LRT 750:

Measuring range:  $-200\dots+450^{\circ}\text{C}$  (switchable to  $^{\circ}\text{F}$ )

Accuracy (@ $20^{\circ}\text{C}$  ambient temp.):  $0.03\text{K}$  from  $-50\dots+199.9^{\circ}\text{C}$ ;  $0.05\text{K}$  from  $-200\dots-50.01^{\circ}\text{C}$ , elsewhere  $0,05\%$  of meas.v.

Display: LCD 4 1/2 digits, two lines, with back light, Resolution  $0.01\text{K}$  up to  $200^{\circ}\text{C}$ , elsewhere  $0.1\text{ K}$

Response time  $t_{90}$ : 12 sec.

- Functions:
- Measurement rate (4/sec = „fast“ and 1/sec = „slow“)
  - MIN and MAX values
  - Hold and Average
  - Zero
  - Integr. real time clock

Supply: 9 VDC battery; typical life time about 20 hours of operating

Permissible temperatures: Operation  $0\dots40^{\circ}\text{C}$ ; Storage  $-10\dots+50^{\circ}\text{C}$

Housing: rigid ABS plastic, transparent window.

Weight: approx. 350 g

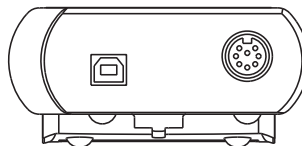
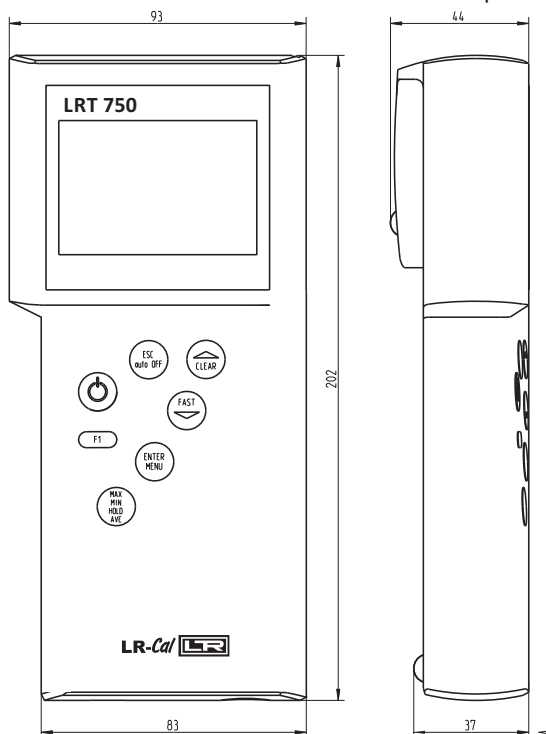
Dimension Pt 100 sensor: 300 mm insertion length x 3 mm diameter, with handle and connection cable.

### Order-Code LRT-750-WKZ:

Handheld with sensor and traceable factory certificate of calibration at 5 temperature points  $0^{\circ}\text{C} + 50^{\circ}\text{C} + 100^{\circ}\text{C} + 150^{\circ}\text{C} + 200^{\circ}\text{C}$

### Order-Code LRT-750-DKD:

Handheld with sensor and DKD/DAkKS certificate at 5 temperature points  $0^{\circ}\text{C} + 50^{\circ}\text{C} + 100^{\circ}\text{C} + 150^{\circ}\text{C} + 200^{\circ}\text{C}$



- Scope of supply:**
- Handheld indicator, adjusted
  - Reference sensor, paced-off
  - Certificate of calibration:  
Order-Code **LRT-750-WKZ**: factory, traceable;  
Order-Code **LRT-750-DKD**: DKD/DAkKS
  - Carrying case with custom foams
  - 9V battery



**LR-Cal LRT F Precision Reference Sensors**

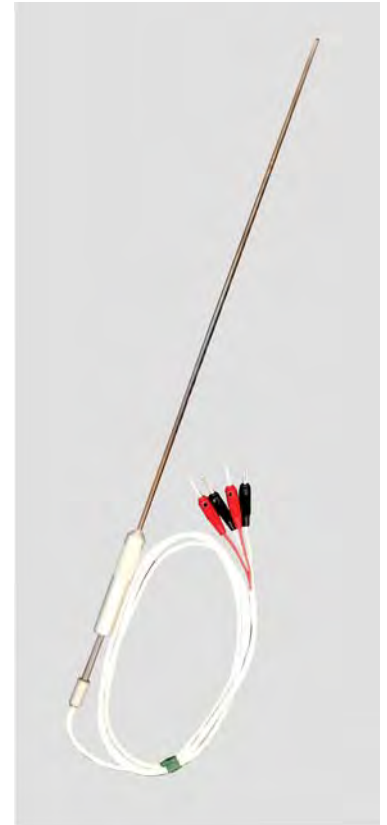
- Resistance thermometer Pt 100  
-40...+650°C  
diameter 4.5 mm: Order-Code: **LRT-F-9040-0650-45**  
diameter 6.0 mm: Order-Code: **LRT-F-9040-0650-60**
- Thermocouple type S  
0...1400°C, diameter 7.0 mm  
Order-Code: **LRT-F-0000-1400-70**  
Optional with robust wooden case

With this reference temperature sensors you can increase significant the measurement accuracy of the **LR-Cal** dry metal block temperature calibrators and the **LR-Cal** fluid bath temperature calibrators significant.

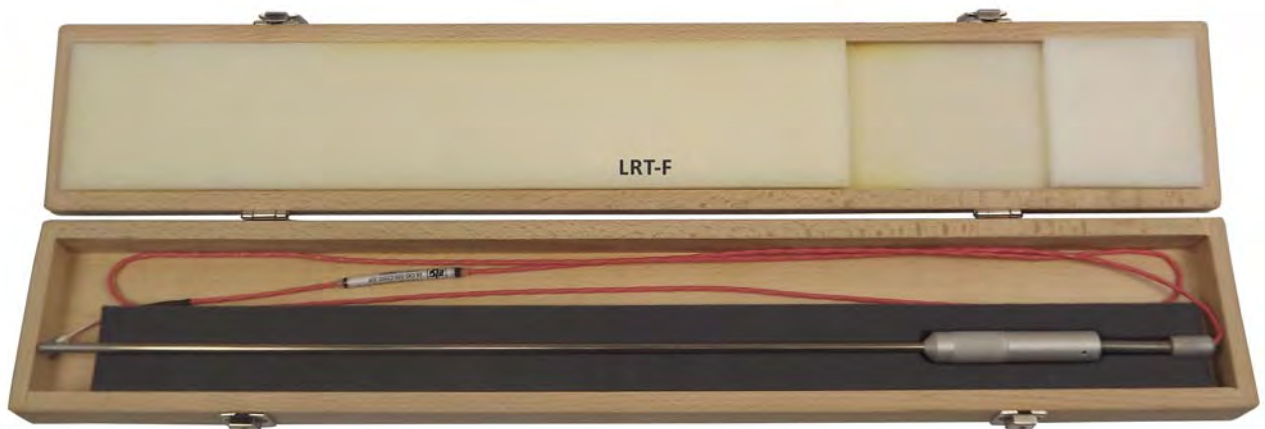
They are suitable for direct connecting to the with „REF“ marked measuring input of the **-2I** versions of models

- **LR-Cal** FLUID 100 and **LR-Cal** FLUID 100-N
- **LR-Cal** FLUID 200 and **LR-Cal** FLUID 200-H
- **LR-Cal** BK40-M and **LR-Cal** BK40-M-TR
- **LR-Cal** TB300-M and **LR-Cal** TM300-M-TR
- **LR-Cal** QUARTZ-35
- **LR-Cal** PULSAR-35Cu und **LR-Cal** PULSAR-80Cu
- **LR-Cal** SOLAR

The temperature values of the external reference sensors **LR-Cal** LRT F are indicated on the second line of the display of the **LR-Cal** temperature calibrators (**-2I** versions). (The calibrator must be configured accordingly.)



**LR-Cal** LRT-F-9040-0650-45  
**LR-Cal** LRT-F-9040-0650-60



**LR-Cal** LRT-F-000-1400-70

**Resistance thermometer Pt 100 (4 wires), range -40...+650°C:**

Type/Order-Code:	LRT-F-9040-0650-45	LRT-F-9040-0650-60
Dimension:	480 mm x 4.5 mm diameter	480 mm x 6.0 mm diameter
Sensor:	Pt 100 (4 wires) class A, 100 Ohm $\pm 0.05$ Ohm	
Alpha:	0.003850 $\pm 0.00005$	
Standard:	IEC 60751	
Stability:	0.010 Ohm/year	
Length of sensitive part:	15 mm	
Cable length:	2 meters	
Connection:	Banana plugs suitable for input bushes of LR-Cal temperature calibrators (-2I versions)	

**Thermocouple type S, range 0...1400°C**

Type/Order-Code:	LRT-F-0000-1400-70
Dimension:	500 mm x 7.0 mm diameter
Sensor:	S Pt-Pt 10% Rhodium, type S, class A
Isolation:	MgO
Sheath:	High purity aluminium KER 710
Cable length:	1 meter (compensated), TEFLON covered (max. 240°C)
Connection:	Miniature plug type S (or with banana plugs suitable for -2I versions)
Option:	Wooden case

**Optional: Certificate of Calibration**

Order-Code	Description
WKZ-T-KAL-RT-6T	Factory certificate of calibration, 6 test points, traceable for LR-Cal LRT F reference sensor (without display)
DKD-T-KAL-RT-6T	DKD-/DAkKS certificate of calibration, 6 test points for LR-Cal LRT F reference sensor (without display)
WKZ-T-KAL-DT-3T	Factory certificate of calibration, 3 test points, traceable for measuring chain: LR-Cal LRT F reference sensor and display of LR-Cal temperature calibrator (-2I version)
DKD-T-KAL-DT-3T	DKD-/DAkKS certificate of calibration, 3 test points for measuring chain: LR-Cal LRT F reference sensor and display of LR-Cal temperature calibrator (-2I version)
WKZ-T-KAL-MP-3ZPP	Additional charge for factory certificate: 3 additional test points
DKD-T-KAL-MP-3ZPP	Additional charge for DKD/DAkKS certificate: 3 additional test points

The LR-Cal LRT F reference temperature sensors are thermally preconditioned to ensure long term stability and to minimise the risk of contamination when used at high temperatures.

The resistance thermometers use premium grade coil wound platinum sensing element to provide maximum accuracy, but, more importantly, excellent stability and minimum drift.