

Dry Block Temperature Calibrator QUARTZ-35

Temperature range: -30°C up to +150°C (at 20°C ambient temperature)

Type QUARTZ-35-2I: with 2 inputs for ext. reference and test specimen

- for mobile or stationary use
- micro processor operated (PID)
- ramp function, thermostat test

Typical applications:

- calibration and checking of all kind of thermometer
- calibration and checking of thermostats
- computer aided calibration via RS 232 interface

Technical Data:

Temperature range: -30°C...+150°C (at 20°C ambient temperature)
 Accuracy of temperature reading: $\pm 0.15^\circ\text{C}$
 Integrated reference probe: Resistance thermometer (3-wire), class A
 Display resolution: 0.01 / 0.1°C (display switchable to °F and K)
 Stability of regulated temperature: $\pm 0.03^\circ\text{C}$ (at 0°C)
 Mean heating time: 20°C per minute / Mean cooling time: 22°C per minute
 Uniformity (at 0°C): radial $\pm 0.02^\circ\text{C}$, axial $\pm 0.1^\circ\text{C}$
 Ventilation: 2 vents, electronic regulated
 RS232 interface: included (build-in)
 Ramp function: min. 0.1°C per minute
 Dry block: 140 mm dept, 35 mm diameter
 Usable dept: 130 mm
 Power Supply: 230 VAC (optional: 115 VAC)
 Power consumption: 300 VA
 Case: metall, dimension 160 x 340 x 330 mm
 Weight: 10 kg net (shipment weight: 17 kg)
 NOTE: The stated accuracy is valid for ambient temperature +10°C...+40°C and is guaranteed for 1 year.



Scope of standard Supply:

Temperature Calibrator QUARTZ-35, power supply cable, fuses kit, thermostats connection cables, operating manual, certificate of calibration (traceable), tweezers for inserts removing.
 1 insert with 6 holes (4 - 4.5 - 5.5 - 6.5 - 8.5 - 10.5 mm)

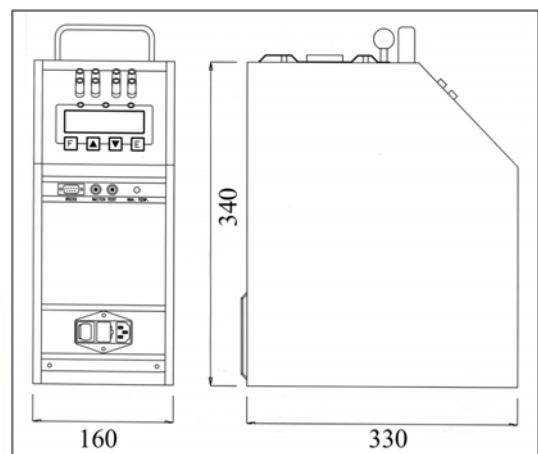
Additional for type QUARTZ-35-2I:

Version with data acquisition card and two input devices to measure Pt 100 (3-/4-wire, -100...+700°C, $\pm 0.3^\circ\text{C}$), Thermocouple type J (0...1000°C, $\pm 1^\circ\text{C}$) and Thermocouple types K/N/R/S (0...1300°C, $\pm 1^\circ\text{C}$).

Optional Accessories:

- Insert without holes (to be drilled by customer)
- Insert with 3 holes (4.5 - 6.5 - 9.5 mm diam.)
- Insert with 2 holes (6.5 - 19.5 mm)
- Insert with 1-3 holes as per customers request, diameter 3.5 to 20 mm
- Insert with 4-6 holes as per customers request, diameter 3.5 to 20 mm
- Soft bag
- Alu case
- PC-Windows Software "AQ2sp" and RS232-Kabel

With the software "AQ2sp" it is possible to remote-control the calibrator with a PC. Automatic or manual calibration of one or more test specimen, stress tests, life cycle tests, thermostat tests. Printing of calibration certificates.



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Dry Block Temperature Calibrator PULSAR-35CU

- for mobile or stationary use
- micro processor operated (PID)
- ramp function, thermostat test

Typical applications:

- calibration and checking of all kind of thermometers
- calibration and checking of thermostats
- computer aided calibration via RS232 interface



Technical Data Type PULSAR-35CU: Order-Code: PULSAR-35CU

Temperature range: ambient temperature up to +600°C
 Resolution of the display: 0.01 / 0.1°C (display switchable to °F or K)
 Stability of regulated temperature: $\pm 0.05^\circ\text{C}$ at 450°C
 Mean heating time: 20°C per minute / Mean cooling time: 25°C per minute
 Uniformity (at 450°C): radial $\pm 0.15^\circ\text{C}$, axial $\pm 0.35^\circ\text{C}$.
 Accuracy of integrated temperature measurement: $\pm 0.3^\circ\text{C}$
 Integrated reference probe: Resistance thermometer Pt 100 (3-wire)
 Ventilation: integrated, electronical driven.
 RS-232 interface: included
 Ramp function: min. 0.1°C per minute
 Dry block: diameter 35 mm, depth 190 mm, material: copper
 Test wells: 1 hole diam. 35 mm x depth 185 mm
 Incl. 1 insert with 4 drillings / holes: diam. 4.5 - 6.5 - 9.5 - 12.5 mm)
 Optional: insert with customized drillings or without drillings
 Power supply: 230 VAC or 115 VAC
 Power consumption: 800 VA
 Housing: metal, dimension: 160 x 340 x 330 mm, weight 10.1 kg net (shipping weight: 18.2 kg)
 NOTE: the stated accuracy is valid for ambient temperature +10...+40°C and is guaranteed for 1 year.

Additional for type PULSAR-35CU-2I: Order-Code: PULSAR-35CU-2I

Version with data acquisition card and two input devices to measure Pt 100 (3-/4-wire, -100...+700°C, $\pm 0.3^\circ\text{C}$), Thermocouple type J (0...1000°C, $\pm 1^\circ\text{C}$) and Thermocouple types K/N/R/S (0...1300°C, $\pm 1^\circ\text{C}$).

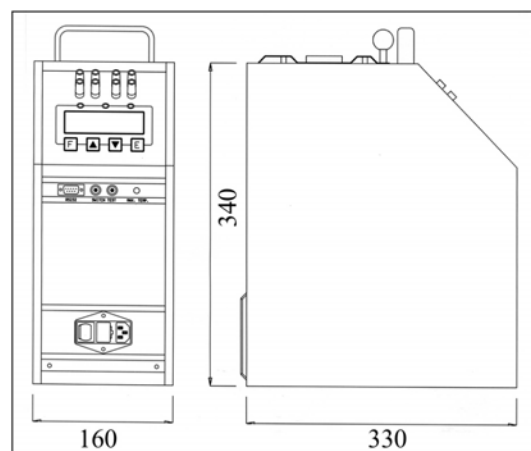
Scope of standard Supply:

Temperature Calibrator PULSAR, power supply cable, fuses kit, thermostats connection cables, instruction manual, test certificate (traceable), tweezer for inserts removing, 1 insert with holes diam. 4.5 - 6.5 - 9.5 - 12.5 mm, depth 185 mm.

Optional Accessories:

- Order-Code **PULSAR-35CU-INS-KS**: Insert with drillings as per customers request
- Order-Code **PULSAR-35CU-INS-0**: Insert without drillings (to be drilled by customer)
- Order-Code: **TEMPKAL-TASCHE**: Soft bag
- Order-Code: **TEMPKAL-KOFFER**: Aluminum case
- Order-Code: **599.0.000.0003.0**: RS232 cable and PC-Windows-Software **AQ2sp**

With the software **AQ2sp** it is possible to remote-control the calibrator with a PC.
 Automatic or manual calibration of one or more test specimen, stress tests, thermostat tests. Printing of calibration certificates.



Dry block Temperature Calibrator Type PULSAR-80CU

- Temperature range: ambient temperature up to +550°C
- For mobile and stationary use
- Micro processor operated, ramp function, thermostat tests

Typical applications:

- Calibration and checking of all kinds of thermometer
- Calibration and checking of thermostats
- Computer aided calibration via RS232 interface

Technical Data PULSAR-80CU: Order-Code: PULSAR-80CU

Temperature range: ambient temperature up to +550°C.
Display resolution: 0,01 / 0.1°C (unit switchable to °F or K)
Stability: $\pm 0.5^\circ\text{C}$ (at 450°C)
Mean heating time: 9°C per minute
Mean cooling time: 1.6°C per minute
Display accuracy: $\pm 0.3^\circ\text{C}$ at 450°C
Integrated reference sensor: resistance thermometer 3-wire
Ventilation: integrated, electronic operated.
Interface: RS232 (9-pol. D-sub)
Ramp function: min. 0.1°C per minute
Dry block: diam. 60 mm. made in copper-alloy.
Test well depth: 275 mm, 1 insert
Optional: insert with holes as per customers request (if possible) or without holes.
Power supply (50/60 Hz): 230 VAC (optional: 115 VAC)
Power consumption: 1700 VA
Case material: metal
Dimension: 160 x 340 x 330 mm, Weight: 23 kg net
NOTE: The stated accuracy is valid at ambient temperature +10°C...+40°C and is guaranteed for 1 year.



In addition, at type PULSAR-80CU-2I: Order-Code: PULSAR-80CU-2I

- Two inputs for Pt100 and thermocouples, programmable.
- Pt 100 IEC 3-/4-wire, range -100/+700°C, accuracy $\pm 0.3^\circ\text{C}$
 - Thermocouple type J, range 0-1000°C, accuracy $\pm 1^\circ\text{C}$
 - Thermocouple types K/N/R/S, range 0-1300°C, accuracy $\pm 1^\circ\text{C}$

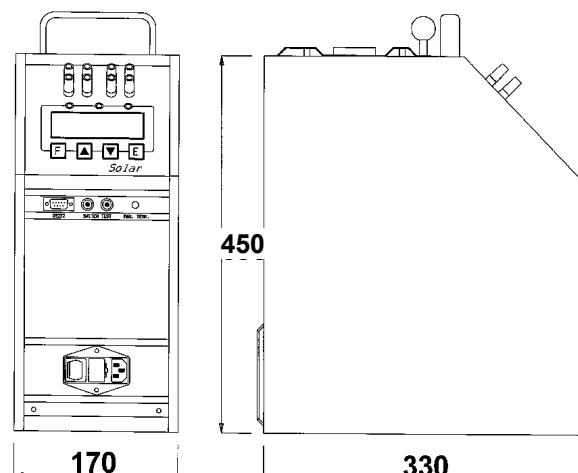
Scope of standard supply:

Dry block calibrator PULSAR-80CU, electrical connection cable, spare fuses, cable for thermostat tests, operating manual, certificate of calibration (traceable), tool for insert removing.
1 insert with 4 holes (4.5 - 6.5 - 9.5 - 12.5 mm). At type PULSAR-80CU-2I set of measuring cables with 4 mm plugs.

Optional Accessories:

- Insert with holes as per customers request (if possible)
- Insert without drilling
- Aluminum carrying case
- RS232 cable and PC-Windows-Software AQ2sp

The PULSAR-80CU can operate in automatic mode connected to a PC by means of the optional AQ2sp software which enables to carry out probe calibrations and cyclical life tests; test results can be stored and printed, so they are easily traceable in compliance with ISO 9000 standards.



Dry block Temperature Calibrator Type SOLAR & SOLAR-2I

- Temperature range: +200°C to +1100°C
- For mobile and stationary use
- Micro processor operated
- Ramp function, thermostat tests

Typical applications:

- Calibration and checking of all kinds of thermometer
- Calibration and checking of thermostats
- Computer aided calibration via RS232 interface

Technical Data:

Temperature range: +200°C to +1100°C
 Accuracy of temperature reading: $\pm 3^\circ\text{C}$
 Display resolution: 0.01 / 0,1°C (switchable °C / °F)
 Stability of regulated temperature: $\pm 0.3^\circ\text{C}$ at 1000°C
 Mean heating time: 18°C per minute
 Mean cooling time: 6°C per minute
 Tubular vertical furnace with an internal quartz pipe and interchangeable equalizing block
 Diameter 45 mm x dept 220 mm,
 Equalizing block: Inconel 600, 44 mm diam. x 175 mm dept
 Counter-current forced air cooling system, enables to check even very short probes.
 Temperature uniformity: $\pm 0.4^\circ\text{C}$ horizontal and vertical
 RS232 interface: supplied, build-in.
 Ramp function
 Block with top insulator: 4 holes (dept 155 mm), diam. 7 - 9 - 11 - 13.5 mm, others on request
 Power supply: 230 VAC (optional: 115 VAC)
 Power consumption: 850 VA
 Case material: metall
 Dimension: 450 x 170 x 330 mm
 Weight: 12 kg net

Note: The stated accuracy is valid at ambient temperature +10°C...+40°C and is guaranteed for 1 year.

Scope of standard Supply:

- Temperature Calibrator SOLAR
- Electr. power cable
- Fuse kit
- Electr. connection cables for thermostat test
- Operating manual
- Certificate of calibration, traceable
- Block extractor tool

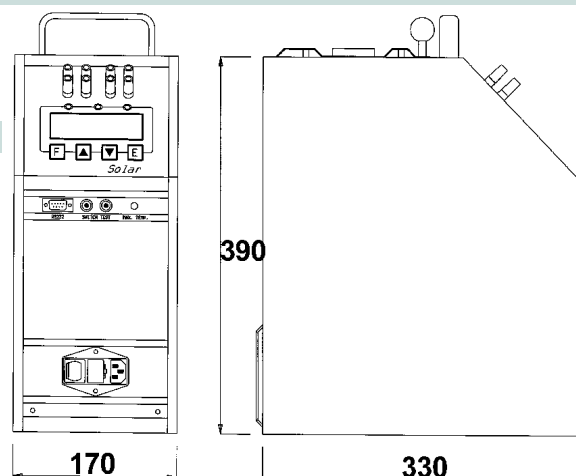
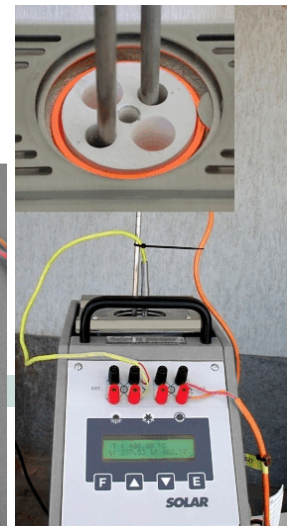
In addition, at type SOLAR-2I:

- Two inputs for Pt100 and thermocouples, programmable
- Pt 100 IEC 3-1/4 wire, range -100/+700°C, accuracy $\pm 0.3^\circ\text{C}$
- Thermocouple type J, range 0-1000°C, accuracy $\pm 1^\circ\text{C}$
- Thermocouple type K/N/R/S, range 0-1300°C, accuracy $\pm 1^\circ\text{C}$

Optional Accessories:

- Dry block in INCONEL 600, with top insulator, holes as per customers request
- PC-Windows Software **AQ2sp** with RS232 cable
- Probe thermocouple typ S, optional with DKD certification
- Soft bag

The SOLAR can operate in automatic mode connected to a PC by means of the optional **AQ2sp** software which enables to carry out probe calibrations and cyclical life tests; test results can be stored and printed, so they are easily traceable in compliance with ISO 9000 standards.



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Dry block temperature calibrator LR-Cal/ PYROS series

- Temperature range (at +20°C ambient temperature):
Model LR-Cal/ PYROS-125: -24°C...+125°C Order-Code [PYROS-125](#)
Model LR-Cal/ PYROS-375: +30°C...+375°C Order-Code [PYROS-375](#)
Model LR-Cal/ PYROS-650: +35°C...+650°C Order-Code [PYROS-650](#)
- for 230 VAC and 115 VAC
autorange (LR-Cal/ PYROS-125) resp. switchable
- Forr mobile use on site and stationary use
- Thermostat test facility

Typical applications:

- Check and calibrate all kind of thermometers, temperature sensors / probes
- Check and adjust thermostat (temperature switches)



PYROS
230 VAC / 115 VAC

Thanks to the 115 / 230 VAC (50/60 Hz) power supply, the LR-Cal/ PYROS series dry block temperature calibrators can be used worldwide.

The LR-Cal/ PYROS series are innovative dry block calibrators especially designed for field applications, robust and able to maintain high accuracy and stability in severe conditions such as offshore rigs and on board of vessels. The self contained units are very compact, portable and light weight.

The innovative **forced air ventilation** greatly reduce the cooling time and prevents the sensors under test from being exposed to excessive heating.

The LR-Cal/ PYROS series offer an electrical switch test input along with a fully programmable ramp, to perform testing of temperature switches.



Optional accessories for LR-Cal/ PYROS series:



IP 65 water tight case
Order-Code [PYROS-KOFFER](#)



Soft carrying case
Order-Code [PYROS-TASCHE](#)



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Technical Data at 20°C ambient temp.	LR-Cal PYROS-125	LR-Cal PYROS-375	LR-Cal PYROS-650
Temperature range at 20°C ambient temp.r:	-24...+125°C	+30...+375°C	+35...+650°C
Heating time (incl. stability):	from 20°C to 120°C: 20 min.	from 30°C to 375°C: 20 min.	from 50°C to 650°C: 35 min.
Cooling time (incl. stability)	from 20°C to -20°C: 17 min.	from 375°C to 100°C: 40 min.	from 650°C to 100°C: 60 min.
Axial temperature uniformity:	at 40 mm immersion depth: ±0.05°C at -20°C ±0.04°C at 0°C ±0.1°C at 100°C	at 40 mm immersion depth: *) ±0.1°C at 50°C *) ±0.2°C at 150°C *) ±0.3°C at 375°C ±0.02°C at 50°C ±0.05°C at 150°C ±0.15°C at 375°C	at 40 mm immersion depth: **) ±0.13°C at 250°C **) ±0.15°C at 450°C **) ±0.35°C at 650°C *) *) *)
	at 60 mm immersion depth: ±0.15°C at -20°C ±0.08°C at 0°C ±0.2°C at 100°C	at 60 mm immersion depth: *) ±0.2°C at 50°C *) ±0.3°C at 150°C *) ±0.9°C at 375°C ±0.03°C at 50°C ±0.08°C at 150°C ±0.25°C at 375°C	at 60 mm immersion depth: **) ±0.17°C at 250°C **) ±0.45°C at 450°C **) ±0.55°C at 650°C *) *) *)
Radial temperature uniformity: (at 40 mm immersion depth)	well-to-well uniformity: ±0.02°C at -20°C ±0.02°C at 0°C ±0.05°C at 100°C	*) ±0.1°C at 50°C *) ±0.15°C at 150°C *) 0.2°C at 375°C *)	**) ±0.22°C **) **)
Immersion depth (max.):	104 mm	150 mm	150 mm
Well diameter:	2 x 13 mm	26 mm	26 mm
Accuracy::	±0.25°C +1 lsd	±0.25°C at 150°C ±0.5°C at 375°C	±0.9°C +1 lsd
Stability::	±0.05°C	±0.15°C	±0.3°C
Display resolution::	0.1°C	0.1°C	0.1°C
Temperature units:	°C / °F	°C / °F	°C / °F
Switch test::	12 VDC	5 VDC	5 VDC
Dimension::	130 x 260 x 280 mm	130 x 260 x 280 mm	120 x 260 x 280 mm
Weight::	4,9 kg	5,4 kg	6 kg
Power supply (50/60 Hz):	100...230 VAC ±10% 80 W	115 / 230 VAC ±10% switchable, 600 W	115 / 230 VAC ±10% switchable, 600 W

*) measured with Pt 100, diameter 3 mm

**) measured with Pt 100, diameter 6 mm

***) measured with Pt 100, diameter 3 mm

Well inserts

For PYROS-125	Order-Code:	For PYROS-375	Order-Code:	For PYROS-650	Order-Code
blank	PYROS-125-INS-0	blank	PYROS-375-INS-0	blank	PYROS-INS-0
3.2 mm	PYROS-125-INS-032	3.2 + 4.8 + 6.4 + 11.1 mm	PYROS-375-INS-4 *)	3.2 + 5.0 + 6.5 + 9.5 mm	PYROS-INS-4 *)
4 mm	PYROS-125-INS-040	6.4 + 12.7 mm	PYROS-375-INS-2	6.5 + 12.7 mm	PYROS-INS-2
4.8 mm	PYROS-125-INS-048 *)				
6.4 mm	PYROS-125-INS-064 *)				
7.9 mm	PYROS-125-INS-079				
9.5 mm	PYROS-125-INS-095				
11.1 mm	PYROS-125-INS-111				

*) included in standard supply of related PYROS model.

Further included in standard supply:

Electr. pwer cable, spare fuse, electr. cables for switch test, operating manual in English language, traceable certificate of calibration, tweezers for removing inserts.



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