

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 (3.5 - 4.5 - 5.5 - 6.5 - 8.5 - 10.5 mm)

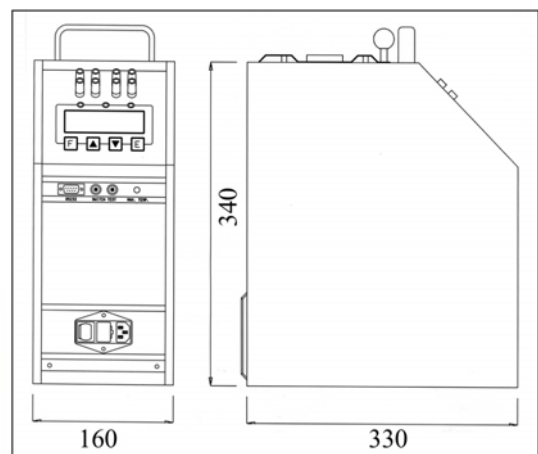
Additional for type QUARTZ-35-2I:

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 LR-Cal PULSAR-35CU

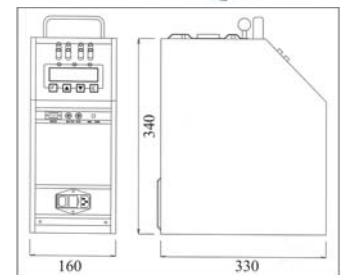
- for mobile or stationary use
- micro processor controlled (PID)
- RAMP function
- Thermostat test feature

Typical applications:

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

Technical Data:**Order-Code:** PULSAR-35CU**Temperature range:** Ambient temperatur up to +600°C**Resolution of display:** 0.01 / 0.1°C (display switchable °C/°F/K)**Stability of regulated temperature:** ±0.05%°C at 450°C**Mean heating time:** 20°C per minute**Mean cooling time:** 25°C per minute**Uniformity (at 450°C):** radial ±0.15°C; axial ±0.35°C**Accuracy of internal temperature measurement:** ±0.3°C**Internal reference probe:** RTD Pt100 (3-wire)**Ventilation:** internal, electronical driven/regulated**Interface:** RS232**RAMP function:** 0.1°C per minute**Dry block:** diameter 35 mm, depth 190 mm, material: copper**Test wells:** 1 hole diameter 35 mm x depth 185 mm**Insert included:** 1 insert with 5 drillings 3.5 / 4.5 / 6.5 / 8.5 / 12.5 mm; **Optional:** inserts with 1 to 9 drillings 3.5...20 mm as per customers request, or blank insert, or insert with BLACK BODY and external reference probe.**Power supply:** 230 VAC (optional: version for 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 one year.

**Version PULSAR-35CU-2I:**

With data acquisition card and two input devices to measure Pt100 (3-/4-wire, -100...+700°C, ±0.3°C), TC type J (0...1000°C, ±1°C) and TC types K/N/R/S (0...1300°C, ±1°C)

Order-Code: PULSAR-35CU-2I**Accessories:****Soft bag**

Order-Code:

TEMPKAL-TASCHE

**Alu Case**

Order-Code:

TEMPKAL-KOFFER

**Windows-PC Software AQ2sp**

incl. RS232 cable

Order-Code: 599.0.000.0003.0

With the software **AQ2sp** it is possible to remote-control the calibrator via PC. Automatic or manual calibration of one or more test items, stress tests, thermostat tests, printing of calibration certificates.**Further Accessories:**

- Inserts with customer specific drillings
- Blank insert
- BLACK BODY insert for infrared thermometer
- External Reference Probes

Portable dry block temperature calibrator**LR-Cal PULSAR-80Cu**

- Range: ambient temperature to +550°C.
- Metal block outer diameter 80 x 300 mm, Inner diameter 60 x 275 mm suitable for appropriate reduction inserts
- Insertion depth of the holes of the insert: 275 mm.
- For checking and calibration of temperature sensors and thermostats with long bulbs.
- Reduction inserts available to customers request.



The temperature calibrator **LR-Cal PULSAR-80Cu** consists of a metal block diameter 80 mm x length 300 mm, heated by a resistance which winds around the outer surface of the block. A hole with diameter 60 mm and depth 275 mm is made in the block for the appropriate reduction inserts.

The **LR-Cal PULSAR-80Cu** is equipped with a counter-current forced air cooling system, which keeps the temperature in the upper part of the well low. This system enables to check even very short probes, without heating the connection head or the handgrip. The calibrator is equipped with a PID microprocessor controller with a resolution up to 0.01°C, setting of the standard of measurement in °C, °F and K, programming of ascent/descent ramps and storage of a thermostats' operative temperature.

The version **LR-Cal PULSAR-80Cu** is equipped with an acquisition card, having two adjustable inputs, able to read Pt 100 3/4-wires and thermocouples J, E, K, N, R and S with automatic compensation of the cold junction. The values of up to two connected probes can be displayed on instruments' display simultaneously with the values of temperature set point and measured temperature of the internal reference temperature probe.

Furthermore, the **LR-Cal PULSAR-80Cu** is equipped with a RS232 serial interface. It 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 9001 standards.

Scope of standard delivery:

- Dry block temperature calibrator model **LR-Cal PULSAR-80Cu** or model **LR-Cal PULSAR-80Cu-2I**
- Power supply cable, fuses kit
- Thermostats connection cable
- Block extractor (tool)
- Test-Report (factory certificate: accuracy and stability)
- Operating manual
- Version **LR-Cal PULSAR-80Cu-2I**: kit of clamps connection

PULSAR-80Cu Dry block Temperature Calibrator

up to 550°C, insertion depth 275 mm

LR-Cal



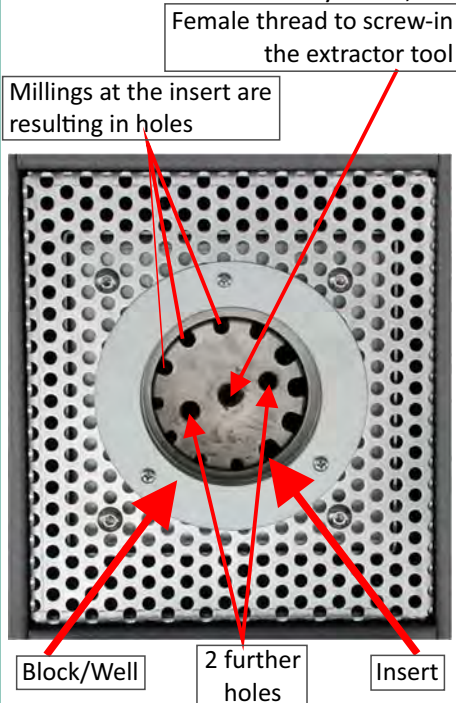
- Operating range:** Ambient temperature to +550°C (1022°F)
- Stability:** ±0.05°C (at 450°C); ±0.09°F (at 842°F)
- Radial temperature uniformity:** ±0.1°C (at 100 mm depth); ±0.1°F (at 100 mm depth)
- Axial temperature uniformity:** ±0.3°C (at 120 mm from the bottom); ±0.5°F (at 120 mm from the bottom)
- Maximum heating time:** 9°C/min. (48°F/min.)
- Maximum cooling time:** 1.6°C/min. (35°F/min.)
- Display resolution:** 0.1°C (0.01°F)
- Display accuracy:** ±0.3°C (±0.5°F)
- Temperature units:** °C, °F, K
- Interface:** RS232 serial interface
- Well diameter:** 60 mm (2.3 in.)
- Insert hole depth:** 275 mm (10.8 in.)
- Supply:** 230 VAC - 50/60 Hz
- Power consumption:** 1700 W
- Dimensions:** 170 x 450 x 330 mm (6.6 x 17.7 x 12.9 in.)
- Weight:** 23 kg (50 lb)
- Shipping size:** 240 x 410 x 515 mm (9.4 x 16 x 20.2 in.)
- Shipping weight incl. optional carrying case:** 30 kg (60 lb)

Model **LR-Cal PULSAR-80Cu-2I** with two measuring inputs and indication of measured values on display of the calibrator:
for Pt 100 (3-/4-wire), range -100...+700°C, accuracy ±0.3°C, or
for thermocouples J and E, range 0...1000°C, accuracy ±1°C, or
for thermocouples K, N, R and S, range 0...1300°C, accuracy ±1°C



Please order separately:

Reduction insert for the dry block, with customer specific holes, order-code **PULSAR-80CU-INS-12**



Inner diameter of the metal dry block:
60 mm diameter x 275 mm depth.

- Reduction inserts 59,5 x 275 mm available, which can be equipped with customer-specific holes (millings):
- maximal 12 drillings (resulting in holes, when inserted)
 - Holes for probes with diameter 3.5 mm to 6.0 mm (please state your requirements in your order)
 - Female thread in the center of the insert to screw-in the extractor-tool (and additional two drillings/holes).

Further accessories and options:

- Trolley case, order-code **PULSAR-80CU-KOFFER**
- AQ2sp-Software (Windows-PC) incl. RS232 cable, order-code **599.0.000.0003.0**
- DAkkS certification (in place of factory test report)



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: Ceramic, 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

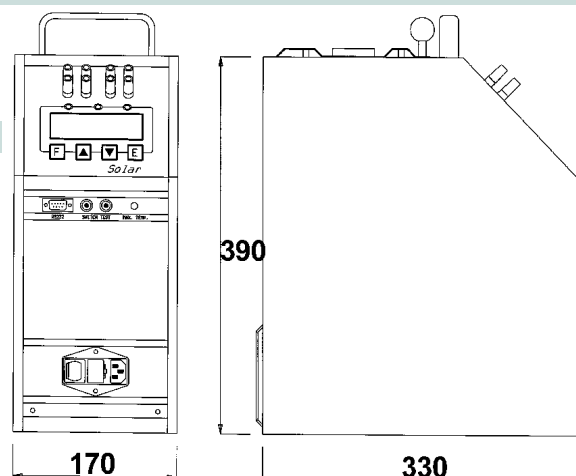
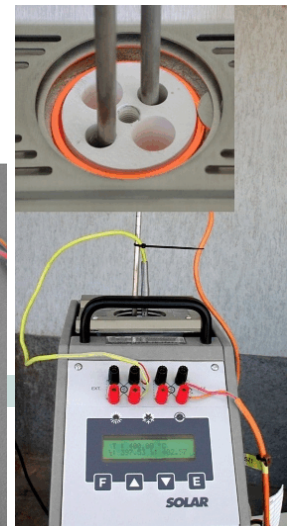
In addition, at type SOLAR-2I:

- 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.



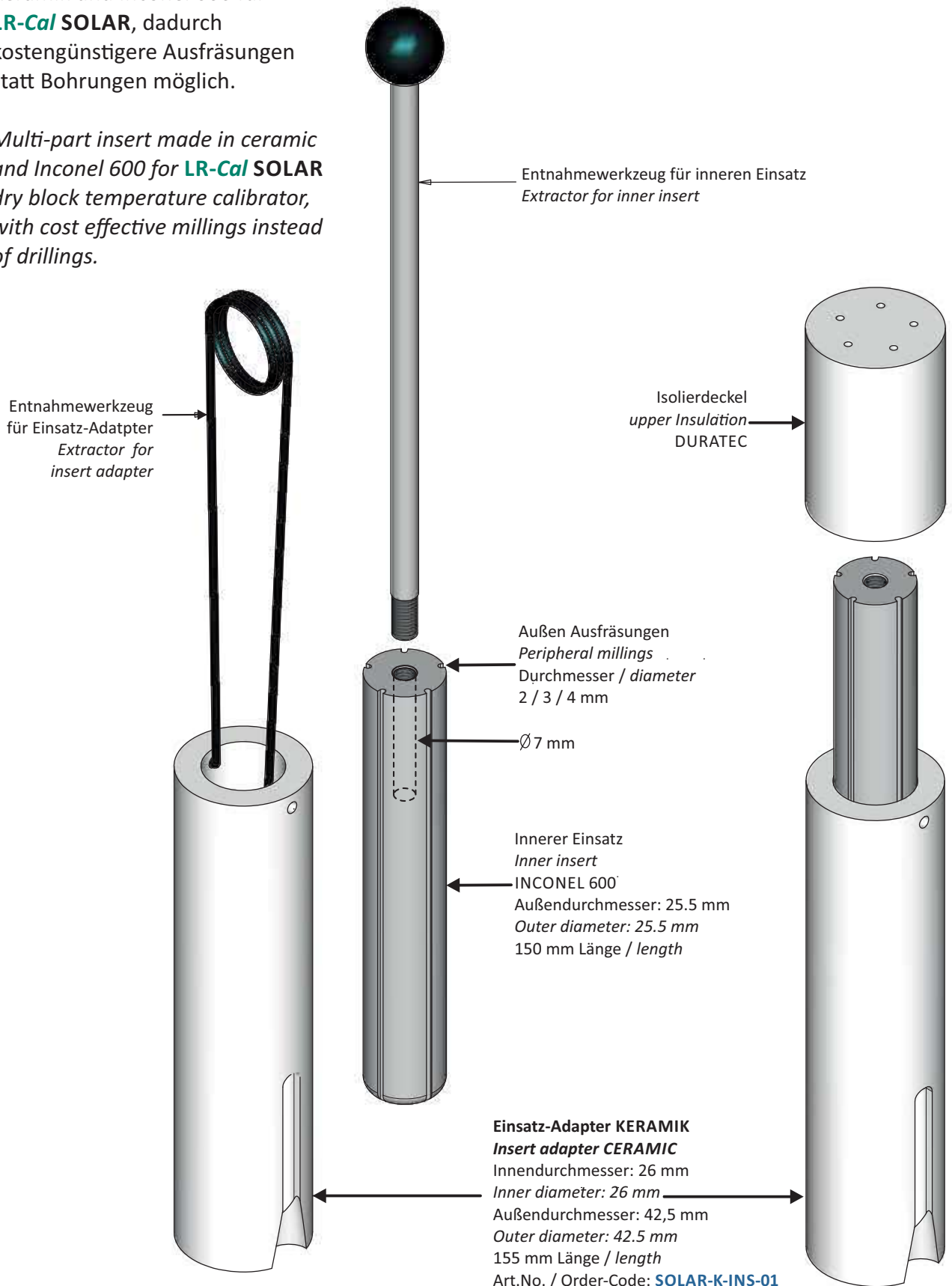
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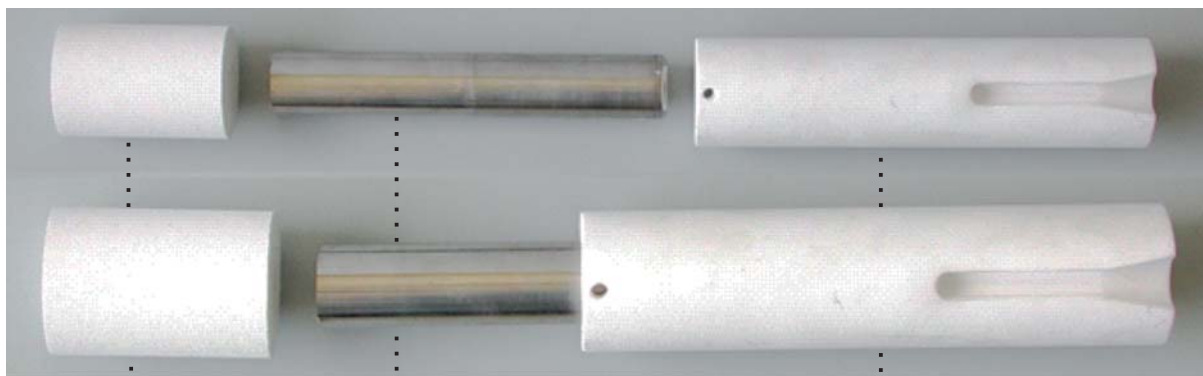
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Mehrteiliges Einsatzsystem aus Keramik und Inconel 600 für **LR-Cal SOLAR**, dadurch kostengünstigere Ausfräsungen statt Bohrungen möglich.

*Multi-part insert made in ceramic and Inconel 600 for **LR-Cal SOLAR** dry block temperature calibrator, with cost effective millings instead of drillings.*





Isolierdeckel
 Insulation
 DURATEC

Einsatz
 Insert
 INCONEL 600

Einsatz-Adapter KERAMIK
 Insert adapter CERAMICS
 Artikel-Nr. / Order-Code:
SOLAR-K-INS-0

Grundsätzlich können die Innen-Einsätze aus Inconell mit **Ausfräsungen zwischen 2 und 6 mm** Durchmesser oder **Bohrungen zwischen 7 und 18 mm** Durchmesser nach Kundenwunsch geliefert werden (Anzahl der möglichen Bohrungen oder Ausfräsungen hängen vom Durchmesser ab).
Basically, the inner inserts made in inconel can be supplied with millings between 2 and 6 mm diameter or drillings between 7 and 18 mm diameter (total number of possible drillings or millings are depending on their diameter).

Nummer / Code	Beschreibung / Description
SOLAR-K-INS-01	Keramik-Adaptereinsatz mit 26 mm Innendurchmesser zur Verwendung mit Einsätzen aus Inconell 600 mit 25,5 mm Außendurchmesser <i>Ceramic adapter insert with 26 mm inner diameter to be used with Inconell insert with 25.5 mm outer diameter</i>
SOLAR-I-INS-00	Inneneinsatz aus Inconell 600, Außendurchmesser 25,5 mm ohne Bohrungen oder Ausfräsungen, zum Selberfräsen oder bohren <i>Inner insert made in Inconel 600, 25.5 mm outer diameter without drillings or millings, blank (for drilling/milling by customer)</i>
511.0.999.0007.0	Isolierdeckel ohne Bohrungen / upper insulation without drillings
SOLAR-K-INS-01	Keramik-Adaptereinsatz mit 26 mm Innendurchmesser zur Verwendung mit Einsätzen aus Inconell 600 mit 25,5 mm Außendurchmesser <i>Ceramic adapter insert with 26 mm inner diameter to be used with Inconell insert with 25.5 mm outer diameter</i>
SOLAR-I-INS-01	Inneneinsatz aus Inconell 600, Außendurchmesser 25,5 mm mit 1 Bohrung (7...18 mm Durchmesser) nach Kundenwunsch <i>Inner insert made in Inconel 600, 25.5 mm outer diameter with 1 drilling (7...18 mm diameter) as per customer request</i>
511.0.999.0007.0	Isolierdeckel, mit passender Bohrung / upper insulation with suitable drilling
SOLAR-K-INS-01	Keramik-Adaptereinsatz mit 26 mm Innendurchmesser zur Verwendung mit Einsätzen aus Inconell 600 mit 25,5 mm Außendurchmesser <i>Ceramic adapter insert with 26 mm inner diameter to be used with Inconell insert with 25.5 mm outer diameter</i>
SOLAR-I-INS-06	Inneneinsatz aus Inconell 600, Außendurchmesser 25,5 mm mit 1 Bohrung (7 mm Durchm.) und 6 Ausfräsungen (2...6 mm Durchmesser) nach Kundenwunsch <i>Inner insert made in Inconel 600, 25.5 mm outer diameter with 1 drilling (7 mm diameter) and 6 millings (2...6 mm diameter) as per customer request</i>
511.0.999.0007.0	Isolierdeckel, mit passenden Bohrungen / upper insulation with suitable drillings
SOLAR-K-INS-01	Keramik-Adaptereinsatz mit 26 mm Innendurchmesser zur Verwendung mit Einsätzen aus Inconell 600 mit 25,5 mm Außendurchmesser <i>Ceramic adapter insert with 26 mm inner diameter to be used with Inconell insert with 25.5 mm outer diameter</i>
SOLAR-I-INS-06	Inneneinsatz aus Inconell 600, Außendurchmesser 25,5 mm mit 1 Bohrung (7 mm Durchm.) und 12 Ausfräsungen (2...6 mm Durchmesser) nach Kundenwunsch <i>Inner insert made in Inconel 600, 25.5 mm outer diameter with 1 drilling (7 mm diameter) and 12 millings (2...6 mm diameter) as per customer request</i>
511.0.999.0007.0	Isolierdeckel, mit passenden Bohrungen / upper insulation with suitable drillings
SOLAR-K-INS-04	Einsatz aus Keramik mit 4 Bohrungen: 7 - 9 - 11 - 13,5 mm (kein Adapter erforderlich, Außendurchmesser 42,5 mm) <i>Insert made in ceramic with 4 drillings: 7 - 9 - 11 - 13.5 mm (no adapter needed, outer diameter 42.5 mm)</i>
511.0.999.0006.0	Isolierdeckel, mit passenden Bohrungen / upper insulation with suitable drillings
SOLAR-I-INS-04	Einsatz aus Inconell 600 mit 4 Bohrungen: 7 - 9 - 11 - 13,5 mm (kein Adapter erforderlich, Außendurchmesser 42,5 mm) <i>Inser made in Inconel 600 with 4 drillings: 7 - 9 - 11 - 13.5 mm (no adapter needed, outer diameter 42.5 mm)</i>
511.0.999.0006.0	Isolierdeckel, mit passenden Bohrungen / upper insulation with suitable drillings
SOLAR-I-INS-SB	Einsatz aus Inconell 600 ohne Bohrungen (zum Selberbohren) (kein Adapter erforderlich, Außendurchmesser 42,5 mm) <i>Insert made in Inconel 600 without drillings (for drilling by customer) (no adapter needed, outer diameter 42.5 mm)</i>
511.0.999.0007.0	Isolierdeckel ohne Bohrungen / upper insulation without drillings
INSERT-SOLAR	Schwarzer Strahler Einsatz (kein Adapter erforderlich, Außendurchmesser 42,5 mm) / Black Body insert
511.0.999.0007.0	Passender Isolierdeckel / suitable upper insulation



Einsätze mit Verwendung des Keramik-Adapters SOLAR-K-INS-01 / Inserts using the ceramic adapter SOLAR-K-INS-01

Dry Block Temperature Calibrators **LR-Cal PYROS 140**

- **LR-Cal PYROS 140-1L:** -24°C...+140°C, 1 block 19 mm
- **LR-Cal PYROS 140-2L:** -24°C...+140°C, 2 blocks each 13 mm
at +20°C ambient temperature

For testing and calibrating of all kind of temperature instruments, e.g. dial thermometer, digital thermometer, temperature probes and sensors.

These innovative dry block temperature calibrator **LR-Cal PYROS 140** has been designed for on-site applications and for the severe conditions of the naval and marine sectors. Its ease of use, compact and practical design, make it unbeatable in industrial processes where the verification of the temperature measurement systems are a key issue for the control of the process and the quality of the final product.

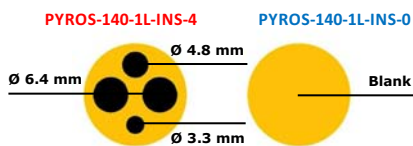


Special attention was paid to reduce the weight, to the small size and sound design obtained by using an aluminium body and aluminium and stainless steel for many internal parts.

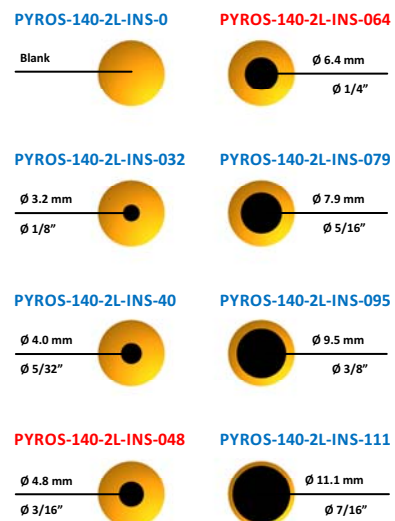
The appliance innovative ventilation system allows the calibrator to keep the temperature on the top of the oven lower compared to competitors' oven. The flow of air on the upper part of the oven is diverted to the rear of the appliance by a tangential flow that touches the calibration well. As a result, the heads of the test items remain at a considerably lower temperature reducing very much the compensation errors produced by the heads heating.

Available block Inserts:

LR-Cal PYROS Basic 140-1L inserts:
with 1 block (aluminium) 19 mm diameter.



LR-Cal PYROS Basic 140-2L inserts:
mit 2 blocks (copper) each 13 mm diameter



Blue = order-code
Red = included in scope of standard delivery

TECHNICAL DATA	PYROS 140-2L	PYROS 140-1L
Temperature range	-24...+140°C	
Mean heating time (incl. stabilization)	20 min. (+20...+120°C)	
Mean cooling time (incl. stabilization)	17 min. (+20...-20°C)	
Axial temperature uniformity	±0.05°C at -20°C ±0.04°C at 0°C ±0.10°C at +100°C	±0.25% at -20°C ±0.12°C at 0°C ±0.35°C at 100°C
uniformity between both blocks (at 40 mm depth)	±0.02°C at -20°C ±0.02°C at 0°C ±0.05°C at +100°C	n/a
Radial temperature uniformity (at 40 mm depth)	n/a	±0.2% at -20°C ±0.1°C at 0°C ±0.35°C at 100°C
Usable insertion depth in the metal block	104 mm	104 mm
Hole diameter	2 x 13 mm	1 x 19 mm
Display accuracy	±0.25°C ±1 digit	
Interface	RS232	
Stability	±0.05°C	
Display resolution	0.1°C	
Temperature units	°C / °F	
Over temperature cut out	nein	
Switch test	12 VDC	
Dimension	130 x 260 x 280 mm	
Weight	4.9 kg	
Power supply (±10%)	115/230 VAC	
Power consumption	80W	

All values are valid at ambient temperature +20°C.

Diameter of the sensor, used for testing the performances:

LR-Cal PYROS 140-2L+ LR-Cal PYROS 140-1L: Pt 100 diameter 3 mm



Standard scope of delivery

- PYROS Basic 140-2L** [PYROS-BASIC-140-2L](#)
- PYROS Basic 140-1L** [PYROS-BASIC-140-1L](#)

- Dry block calibrator
- Tweezers for insert removing
- Kit of spare fuses
- Connection cables for thermostat testing
- Operating manual
- Test certificate

PYROS Basic 140 2L:

- 1 insert with 1 hole 4.8 mm
- 1 insert with 1 hole 6.4 mm

PYROS Basic 140 1L:

- 1 insert with 4 holes 3.3 + 4.8 + 6.4 + 6.4 mm

Optional accessories

for PYROS Basic 140-2L	Order-Code
1 blank insert	PYROS-140-2L-INS-0
1 insert with 1 hole 3.2 mm	PYROS-140-2L-INS-032
1 insert with 1 hole 4.0 mm	PYROS-140-2L-INS-040
1 insert with 1 hole 4.8 mm	PYROS-140-2L-INS-048
1 insert with 1 hole 6.4 mm	PYROS-140-2L-INS-064
1 insert with 1 hole 7.9 mm	PYROS-140-2L-INS-079
1 insert with 1 hole 9.5 mm	PYROS-140-2L-INS-095
1 insert with 1 hole 11.1 mm	PYROS-140-2L-INS-111
1 insert with 1 customer specific hole	PYROS-140-2L-INS-KW
1 soft bag	PYROS-TASCHE
1 plastic marine case IP67	PYROS-KOFFER
for PYROS Basic 140-1L	Order-Code
1 blank insert	PYROS-140-1L-INS-0
1 insert with 4 holes 3.3 + 4.8 + 6.4 + 6.4 mm	PYROS-140-1L-INS-4
1 soft bag	PYROS-TASCHE
1 plastic marine case IP67	PYROS-KOFFER



Dry Block Temperature Calibrators **LR-Cal PYROS** series with DNV approval

- **LR-Cal PYROS-375:** +30°C...+375°C
- **LR-Cal PYROS-650:** +35°C...+650°C
at +20°C ambient temperature

This calibrators are type approved by **DET NORSKE VERITAS**. For testing and calibrating of all kind of temperature instruments, e.g. dial thermometer, digital thermometer, temperature probes and sensors.



N° A-13487



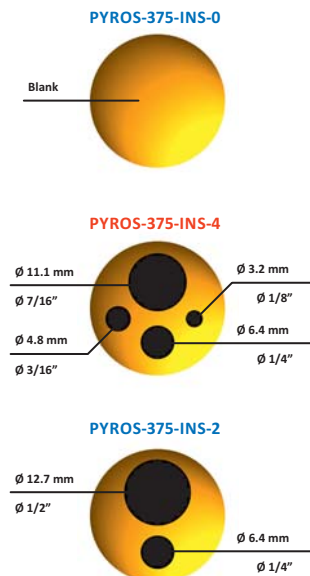
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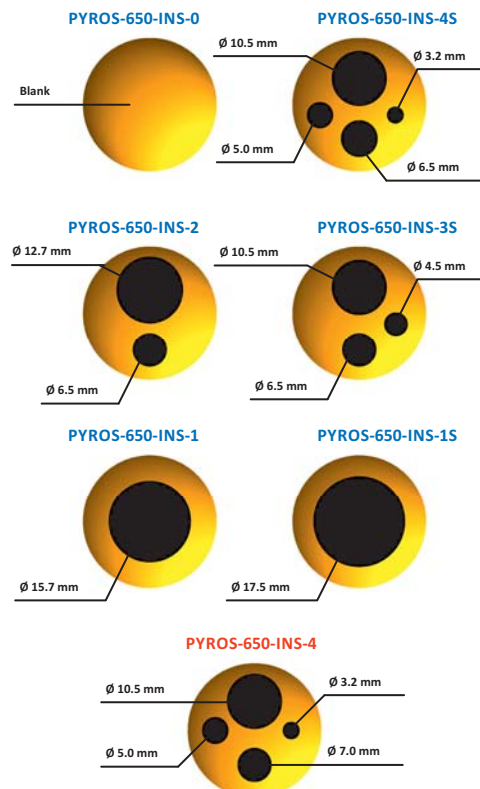
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Available block inserts:

LR-Cal PYROS-375 inserts:



LR-Cal PYROS-650 inserts:



Blue = order-code
Red = included in scope of standard delivery

**PYROS-375
PYROS-650**

**Portable Dry Block Temperature
Calibrators with DNV approval**



TECHNICAL DATA	PYROS-375	PYROS-650
Temperature range	+30...+375°C	+35...+650°C
Mean heating time (incl. stabilization)	20 min. (+30...+375°C)	35 min. (+50...+650°C)
Mean cooling time (incl. stabilization)	40 min. (+375...+100°C)	60 min. (+650...+100°C)
Axial temperature uniformity	a) ±0.10°C at +50°C a) ±0.20°C at +150°C a) ±0.30°C at +375°C	b) ±0.02°C at +50°C b) ±0.05°C at +150°C b) ±0.15°C at +375°C
Radial temperature uniformity (at 40 mm depth)	a) ±0.10°C at +50°C a) ±0.15°C at +150°C a) ±0.20°C at +375°C	b) ±0.05°C at +50°C b) ±0.10°C at +150°C b) ±0.15°C at +375°C
Usable insertion depth in the metal block	150 mm	
Hole diameter	26 mm	
Display accuracy	±0.25°C at +150°C ±0.35°C at +375°C	±0.50°C
Stability	a) ±0.15°C b) ±0.10°C	±0.30°C
Display resolution	0.1°C	
Temperature units	°C / °F	
Over temperature cut out	yes	
Thermostat/Switch test	5 VDC	
Display	LED, 2 lines	
Interface	RS232	
Slope rate	yes	
Calibration	From 1 to 10 points calibration	
Dimension	130 x 260 x 280 mm	
Weight	5.4 kg	
Power supply (±10%, 50/60 Hz)	115/230 VAC	
Power consumption	600W	

All values are valid at ambient temperature +20°C

Diameter of the sensor, used for testing the performances:

LR-Cal PYROS-375 : Pt 100 a) diameter 6 mm / b) diameter 3 mm

LR-Cal PYROS-650 : Pt 100 diameter 4,5 mm



Standard scope of delivery

PYROS-375

PYROS-DNV-375

PYROS-650

PYROS-DNV-650

- Dry block calibrator
- Tweezers for insert removing
- Kit of spare fuses
- Connection cables for thermostat testing
- Operation manual
- Test certificate
- 1 insert with 4 holes
3.2 + 4.8 + 6.4 + 11.1 mm



- Dry block calibrator
- Tweezers for insert removing
- Kit of spare fuses
- Connection cables for thermostat testing
- Operation manual
- Test certificate
- 1 insert with 4 holes
3.2 + 5.0 + 7.0 + 10.5 mm



Optional accessories

for PYROS-375

Order Code

- 1 blank insert **PYROS-375-INS-0**
- 1 insert with 4 holes
3.2 + 4.8 + 6.4 + 11.1 mm **PYROS-375-INS-4**
- 1 insert with 2 holes
6.4 + 12.7 mm **PYROS-375-INS-2**
- 1 soft bag **PYROS-TASCHE**
- 1 plastic marine case IP67 **PYROS-KOFFER**

for PYROS-650

Order Code

- 1 blank insert **PYROS-650-INS-0**
- 1 insert with 2 holes
6.5 + 12.7 mm **PYROS-650-INS-2**
- 1 insert with 3 holes
4.5 + 6.5 + 10.5 mm **PYROS-650-INS-3S**
- 1 insert with 4 holes
3.2 + 5.0 + 7.0 + 10.5 mm **PYROS-650-INS-4**
- 1 insert with 4 holes
3.2 + 5.0 + 6.5 + 10.5 mm **PYROS-650-INS-4S**
- 1 insert with 1 hole 15.7 mm **PYROS-650-INS-1**
- 1 insert with 1 hole 17.5 mm **PYROS-650-INS-1S**
- 1 soft bag **PYROS-TASCHE**
- 1 plastic marine case IP67 **PYROS-KOFFER**

PYROS-TASCHE
Schultertragetasche
400 x 170 x 285 mm



PYROS-KOFFER
Wasserdichter
„Marine“-Koffer IP 67
mit Druckausgleichsventil
410 x 535 x 220 mm



Dry Block Temperature Calibrators **LR-Cal PYROS 140**

- **LR-Cal PYROS 140-1L:** -24°C...+140°C, 1 block 19 mm
- **LR-Cal PYROS 140-2L:** -24°C...+140°C, 2 blocks each 13 mm
at +20°C ambient temperature

For testing and calibrating of all kind of temperature instruments, e.g. dial thermometer, digital thermometer, temperature probes and sensors.

These innovative dry block temperature calibrator **LR-Cal PYROS 140** has been designed for on-site applications and for the severe conditions of the naval and marine sectors. Its ease of use, compact and practical design, make it unbeatable in industrial processes where the verification of the temperature measurement systems are a key issue for the control of the process and the quality of the final product.

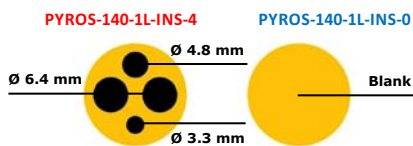


Special attention was paid to reduce the weight, to the small size and sound design obtained by using an aluminium body and aluminium and stainless steel for many internal parts.

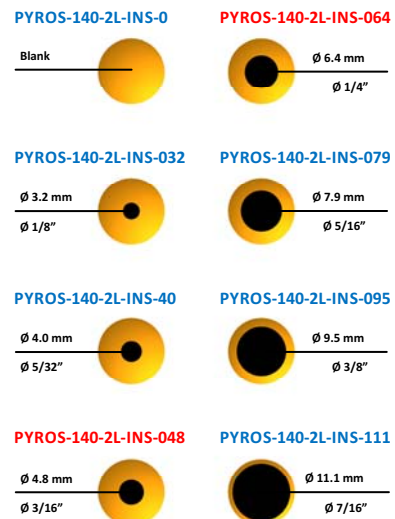
The appliance innovative ventilation system allows the calibrator to keep the temperature on the top of the oven lower compared to competitors' oven. The flow of air on the upper part of the oven is diverted to the rear of the appliance by a tangential flow that touches the calibration well. As a result, the heads of the test items remain at a considerably lower temperature reducing very much the compensation errors produced by the heads heating.

Available block Inserts:

LR-Cal PYROS Basic 140-1L inserts:
with 1 block (aluminium) 19 mm diameter.



LR-Cal PYROS Basic 140-2L inserts:
mit 2 blocks (copper) each 13 mm diameter



Blue = order-code
Red = included in scope of standard delivery

TECHNICAL DATA	PYROS 140-2L	PYROS 140-1L
Temperature range	-24...+140°C	
Mean heating time (incl. stabilization)	20 min. (+20...+120°C)	
Mean cooling time (incl. stabilization)	17 min. (+20...-20°C)	
Axial temperature uniformity	±0.05°C at -20°C ±0.04°C at 0°C ±0.10°C at +100°C	±0.25% at -20°C ±0.12°C at 0°C ±0.35°C at 100°C
uniformity between both blocks (at 40 mm depth)	±0.02°C at -20°C ±0.02°C at 0°C ±0.05°C at +100°C	n/a
Radial temperature uniformity (at 40 mm depth)	n/a	±0.2% at -20°C ±0.1°C at 0°C ±0.35°C at 100°C
Usable insertion depth in the metal block	104 mm	104 mm
Hole diameter	2 x 13 mm	1 x 19 mm
Display accuracy	±0.25°C ±1 digit	
Interface	RS232	
Stability	±0.05°C	
Display resolution	0.1°C	
Temperature units	°C / °F	
Over temperature cut out	nein	
Switch test	12 VDC	
Dimension	130 x 260 x 280 mm	
Weight	4.9 kg	
Power supply (±10%)	115/230 VAC	
Power consumption	80W	

All values are valid at ambient temperature +20°C.

Diameter of the sensor, used for testing the performances:

LR-Cal PYROS 140-2L+ LR-Cal PYROS 140-1L: Pt 100 diameter 3 mm



Standard scope of delivery

- PYROS Basic 140-2L** [PYROS-BASIC-140-2L](#)
- PYROS Basic 140-1L** [PYROS-BASIC-140-1L](#)

- Dry block calibrator
- Tweezers for insert removing
- Kit of spare fuses
- Connection cables for thermostat testing
- Operating manual
- Test certificate

PYROS Basic 140 2L:

- 1 insert with 1 hole 4.8 mm
- 1 insert with 1 hole 6.4 mm

PYROS Basic 140 1L:

- 1 insert with 4 holes 3.3 + 4.8 + 6.4 + 6.4 mm

Optional accessories

for PYROS Basic 140-2L	Order-Code
1 blank insert	PYROS-140-2L-INS-0
1 insert with 1 hole 3.2 mm	PYROS-140-2L-INS-032
1 insert with 1 hole 4.0 mm	PYROS-140-2L-INS-040
1 insert with 1 hole 4.8 mm	PYROS-140-2L-INS-048
1 insert with 1 hole 6.4 mm	PYROS-140-2L-INS-064
1 insert with 1 hole 7.9 mm	PYROS-140-2L-INS-079
1 insert with 1 hole 9.5 mm	PYROS-140-2L-INS-095
1 insert with 1 hole 11.1 mm	PYROS-140-2L-INS-111
1 insert with 1 customer specific hole	PYROS-140-2L-INS-KW
1 soft bag	PYROS-TASCHE
1 plastic marine case IP67	PYROS-KOFFER
for PYROS Basic 140-1L	Order-Code
1 blank insert	PYROS-140-1L-INS-0
1 insert with 4 holes 3.3 + 4.8 + 6.4 + 6.4 mm	PYROS-140-1L-INS-4
1 soft bag	PYROS-TASCHE
1 plastic marine case IP67	PYROS-KOFFER

