

Product Information

Temperature chambers for AllroundLine

CTA: 126188 126175



AllroundLine Z010 with 400 mm wide temperature chamber



AllroundLine Z250 with 600 mm wide temperature chamber

Applications

Materials and component testing over a wide temperature range, including:

- tests on plastics: reliable test results, e.g. to ISO 527-1, ASTM D638
- rubber, elastomers: standard-compliant tests plus temperature accuracy, e.g. to ISO 23529 and ISO 37
- composites: tests using a wide range of fixtures



Reliable test results

The chambers feature very low vibration, allowing optimum integration of the temperature chamber with ZwickRoell extensometry. Reliable test results are guaranteed, regardless of whether optical or contact-type measurement is used.



Cost and time savings

The following features guarantee short cycle times free from lengthy heating periods, offering maximum savings.

- Temperature-condition your specimens in the magazine.
- Change specimens through the optional small chamber-door opening and benefit from minimal temperature changes and greatly reduced ice formation.
- Use the special insertion aid to center your specimens quickly and precisely.



Perfect extensometer integration

These low-vibration temperature chambers provide optimum operating conditions for all extensometers. Extensometers are mounted at left rear, ensuring an unobstructed view into the test area through the window. To simplify installation a mechanical T-slotted module is available for sensor arms, together with an optical glass module for non-contact extensometers. This enables all extensometers available from ZwickRoell to be used with the temperature chambers.



Maximum operating convenience

All system functions feature convenient, intuitive operation via the ZwickRoell testing software. The control layout adapts interactively to the test sequence and provides direct feedback. You can access all the data from your test series whenever you require. ZwickRoell's testing software allows the temperature chamber fan speed to be conveniently adjusted, ensuring reliable test results even with sensitive specimens such as films. The optional safety door function guarantees operator protection in accordance with European safety regulations, with the chamber door acting as a safety door with guard locking.

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Exact temperature control

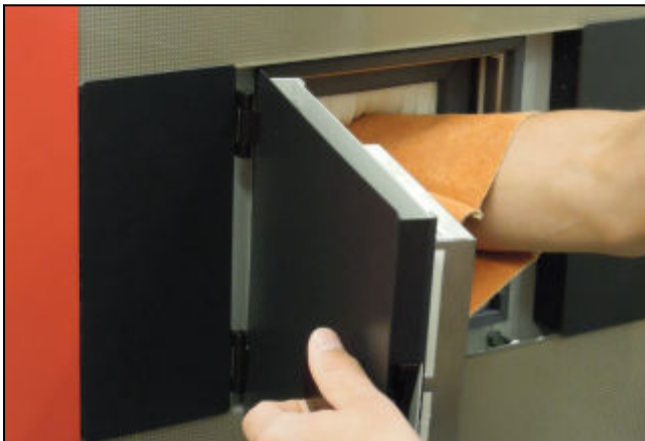
The sophisticated air-feed system ensures extremely uniform temperature distribution. Precision control guarantees stable temperatures with no overshooting, while pre-configured control parameters ensure the temperature is attained quickly and precisely. In conjunction with the ZwickRoell System Configuration Builder, specimen-specific control parameters can easily be loaded with the test program. The optional close-proximity temperature sensor enables temperature control at the critical sensor location, for optimum test results. The practical holder allows the sensor to be positioned quickly and precisely. Completely uniform, extremely accurate temperature control ($\pm 1^\circ\text{C}$) ensures that your specimen is always at exactly the right temperature.



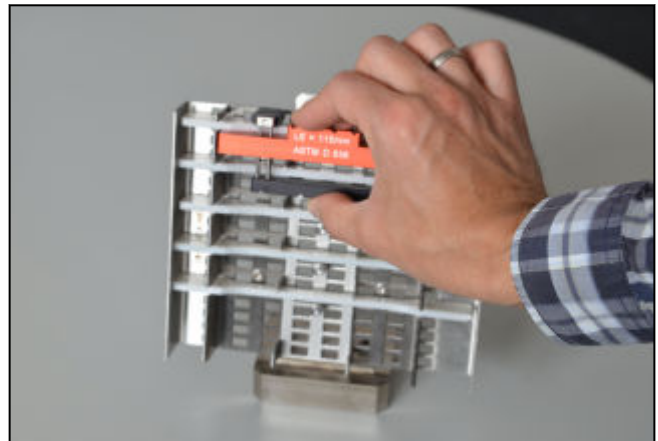
Flexible in use

The modular concept allows optimum adaptation of the chamber to suit your needs. The large chamber volume provides additional test area space for component testing and a constant temperature in the area around the specimen. Future-proof: if you need to extend the range of application, all options can be retrofitted on-site as required.

CTA: 126193 126195



Door with additional opening



Specimen magazine with insertion aid

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Technical data

Item No.	1022207	1022208	1022209	1022210	1022211	
Temperature range	RT +10°C ... +250 °C					
With LN ₂ cooling system (option)	-80 ... +250 °C					
Connection LN ₂ (inner threads) ¹⁾	G 3/8	G 3/8	G 3/8	G 3/8	G 3/8	
Coolant operating pressure	1.5 +/- 0.1	1.5 +/- 0.1	1.5 +/- 0.1	1.5 +/- 0.1	1.5 +/- 0.1	bar
Typical LN ₂ consumption when: ²⁾						
Cooling from RT to -30 °C	2.5	3	5	6	8.5	l
Hold at -30 °C	5	5	5.5	6	9	l/h
Cooling to -80 °C	6	9	13	14	19	l
Hold at -80 °C	8.5	8.5	8.5	11	14	l/h
Rate of temperature change without load to EN 60068-3-5 ³⁾						
Heating mode from RT to 250°C	12	12	7.5	13	9.5	K/min
Corresponds to a warm-up time of:	15	17	23	14	19	min
Cooling mode from RT to -80 °C	7	5.5	5	4.5	5	K/min
Corresponds to a cool-off time of:	12	14	16	19	17	min
Temporal instability ⁴⁾	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1	°C
Local inhomogeneity ⁴⁾	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1	°C
Power supply	400	400	400	400	400	V, 3Ph/N /PE
Power frequency	50/60	50/60	50/60	50/60	50/60	Hz
Power consumption	3.3	3.3	3.3	5.2	5.2	kVA
Power supply cable	l = 4 m, with 5-pin CEE plug (16A)					
Interface	RS 232 (requires a COM port on the PC)					
Dimensions:						
Test area:						
Height	500	700	900	700	900	mm
Width	260	260	260	460	460	mm
Depth	445	445	445	655	655	mm
Inside of the door to the test axis	230	230	230	340	340	mm
Outer (distance to outer sides):						
Height	640	840	1040	840	1040	mm
Width	400	400	400	600	600	mm
Depth	1015	1015	1015	1225	1225	mm
Weight, approx. (without options)	140	150	160	159	220	kg
Design	Arrangement of extensometer on the left rear side; door hinge to the left; condensation drain included in connection unit					
Overall noise level	<68	<68	<68	<68	<68	dB(A)

1) The supply line connection also includes a G 3/8"-UNF 3/4"-16 adapter

2) Chamber closed, with typical equipment (400 mm wide chamber: 10 kN specimen grips, 600 mm wide chamber: 100 kN specimen grips). During cooling: consumption between 10% and 90% of the temperature range to EN 60068-3-5

3) The rate of temperature change is determined between 10% and 90% of the specified range to EN 60068-3-5

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4) To DAkkS/DKD R 5-7 Method C: expanded measurement uncertainty of the temperature measurement system +/- 1.5 K (basic chamber, no load)

Accessories required

Installation components

Required: 1 x guide rails

Description	Item number
Guide rails For all temperature chambers for AllroundLine testing machines with test area width 440/630/640 mm Temperature chamber runs on the guide rails For use of an extensometer in conjunction with a rigid fixing unit The minimum distance between the base crosshead and the bottom side of the temperature chamber is 123 mm	1022226
Guide rails, modular For temperature chambers installed in the upper test area of an AllroundLine floor-standing testing machine with test area width 630 mm For use of an extensometer in conjunction with a rigid or swiveling fixing unit	1022227
Guide rails, modular For all temperature chambers for AllroundLine testing machines with test area width 440/630/640 mm Temperature chamber runs on the guide rails For use of an extensometer in conjunction with a rigid or swiveling fixing unit The minimum distance between the base crosshead and the bottom side of the temperature chamber is 123 mm	1022228

Optional accessories

Door versions

(can also be used in combination)

Description	Item number
Door with additional opening Minimal temperature variation during specimen change or removal of clip-on extensometer. Enables shorter cycle times, reduced operating costs and reduced ice formation in cooling mode. Can not be used with temperature chamber Article no. 1022207	1022217
Safety door function for operator protection Chamber door functions as a safety door with guard-locking, guaranteeing safety as per MRL. Detection of temperature chamber position and automatic selection of safety device (machine or temperature chamber).	1022224

Cover plate for rod feed-throughs

Description	Item number
Cover plate for rod feed-throughs For temperature chamber operation away from the testing system. Scope of delivery: 1 pair	1051657

Cooling

Description	Item number
Cooling system with safety valve	1022212

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Description	Item number
Cooling using LN ₂ (liquid nitrogen) Extension of temperature range to -80 °C Please make sure the room has sufficient ventilation	
Liquid nitrogen pressure tank Vacuum super insulation, 100 l, incl. connection (item number 1022235)	1022225
Connection to temperature chamber Vacuum super insulation, L = 1.5 m, UNF 3/4"-16 Ensures optimal performance of the temperature chamber during cooling operation by using an alternative liquid nitrogen container	1022235

Temperature control near the specimen

Description	Item number
Temperature sensor near the specimen To control the temperature near the specimen incl. bracket to flexibly position the thermocouple	1022213

LED surface light module

Description	Item number
LED surface light module for temperature chamber with height H = 640 For full-surface lighting of the test area (e.g. for video recording) for a temperature chamber To measure change in width in combination with a videoXtens	1065063
LED surface light module for temperature chamber with height H = 840 For full-surface lighting of the test area (e.g. for video recording) for a temperature chamber To measure change in width in combination with a videoXtens	1022214
LED surface light module for temperature chamber with height H = 1040 For full-surface lighting of the test area (e.g. for video recording) for a temperature chamber To measure change in width in combination with a videoXtens	1038382

Glass module for optical extensometers

With test-temperature-dependent heating of the pane in tests below room temperature.

Required in combination with non-contact extensometer.

Description	Item number
Glass module for use in side opening of a temperature chamber (height H = 640)	1022216
Glass module for use in side opening of a temperature chamber (height H = 840)	1038378
Glass module for use in side opening of a temperature chamber (height H = 1040)	1038380

Mechanical insert for contact extensometer

Description	Item number
Mechanical insert for contact extensometer for use in side opening of a temperature chamber (height H = 640) Required in conjunction with contact extensometers (with sensor arms)	1022215
Mechanical insert for contact extensometer for use in side opening of a temperature chamber (height H = 840) Required in conjunction with contact extensometers (with sensor arms)	1038383
Mechanical insert for contact extensometer for use in side opening of a temperature chamber (height H = 1040)	1038384

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Description	Item number
Required in conjunction with contact extensometers (with sensor arms)	

Specimen magazines

For pre-conditioning specimens inside the temperature chamber; with insertion aid for optimum alignment of specimens to the tensile axis; incl. insulating plate for use outside the chamber. 5 specimens can be pre-conditioned per magazine.

Description	Item number
Specimen magazine ISO 527-2 Type 1A	1022218
Specimen magazine ISO 527-2 Type 1B	1036555
Specimen magazine ISO 527-2 Type 1BA	1022219
Specimen magazine ISO 527-2 Type 1BB	1033153
Specimen magazine ASTM D638 Type I	1022220
Specimen magazine ISO 6892-1 Type 1	1022222
Specimen magazine ISO 6892-1 Type 2	1033154
Specimen magazine ISO 37 Shape 1	1022223
Specimen magazine ISO 37 Shape 1A	1033156
Specimen magazine ISO 37 Shape 2	1033157
Specimen magazine ISO 37 Shape 3	1033158
Specimen magazine ISO 37 Shape 4	1033159

Heat protection gloves

Description	Item number
Heat protection gloves size M Consisting of para-aramid, carbon and wool High efficiency due to the possibility of wearing on both sides, leather cuff as additional forearm protection, contact heat up to 250 °C Food safety to EU 1935/2004	1022232
Heat protection gloves size L Consisting of para-aramid, carbon and wool High efficiency due to the possibility of wearing on both sides, leather cuff as additional forearm protection, contact heat up to 250 °C Food safety to EU 1935/2004	1022233