



ENVIRONMENTAL CHAMBERS



Environmental chamber (3119 series)

Description

The Instron® range of environmental chambers provides extensive temperature testing capabilities for evaluating material properties under non-ambient testing conditions. A full range of complimentary grips and pull rods is available.

Principle of Operation

The chambers use forced convection heating for optimum temperature distribution and sophisticated controllers ensure minimum overshoot and excellent set-point stability. Features such as internal lights, removable wedges and roller mounting options ensure ease-of-use.

Application Range

- High and low temperature testing of materials and components in tension, compression, shear, flexure, fatigue, etc.



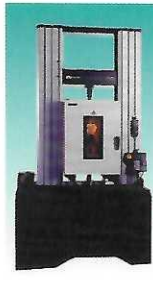
3119-402



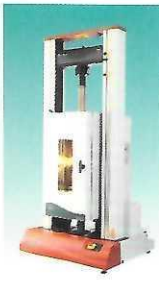
3119-403



3119-407



3119-408
3119-410



3119-506

3119 Series Environmental Chambers

Catalog Number	Temperature Rating	Internal Width	Internal Height	Internal Depth	Notes
3119-402	-70 °C to +250 °C (-95 °F to +480 °F)	140 mm (5.5 in)	250 mm (9.8 in)	140 mm (5.5 in)	Requires cooling option for below ambient tests
3119-403	-70 °C to +250 °C (-95 °F to +480 °F)	140 mm (5.5 in)	550 mm (21.7 in)	140 mm (5.5 in)	Requires cooling option for below ambient tests
3119-406	-100 °C to +350 °C (-150 °F to +660 °F)	240 mm (9.4 in)	560 mm (22.0 in)	230 mm (9.0 in)	Requires cooling option for below ambient tests
3119-407	-100 °C to +350 °C (-240 °F to +660 °F)	400 mm (15.7 in)	560 mm (22.0 in)	400 mm (15.7 in)	Requires cooling option for below ambient tests
3119-408	-150 °C to +600 °C (-240 °F to +1110 °F)	400 mm (15.7 in)	560 mm (22.0 in)	400 mm (15.7 in)	Requires cooling option for below ambient tests
3119-409	-70 °C to +250 °C (-95 °F to +480 °F)	240 mm (9.4 in)	660 mm (26.0 in)	230 mm (9.0 in)	Requires cooling option for below ambient tests
3119-410	-100 °C to +350 °C (-240 °F to +660 °F)	400 mm (15.7 in)	660 mm (26.0 in)	400 mm (15.7 in)	Requires cooling option for below ambient tests
3119-506	-70 °C to +350 °C (-95 °F to +660 °F)	240 mm (9.4 in)	560 mm (22.0 in)	230 mm (9.0 in)	Requires cooling option for below ambient tests

ENVIRONMENTAL CHAMBERS

Environmental chambers provide the capability to study the mechanical properties of materials and components over a wide range of temperatures. Our standard chamber range covers temperatures of -150 °C to +600 °C with custom solutions available to cater for height and width variants, humidity control and mechanical cooling. Examples of custom chambers can be seen in section 3.

A complimentary range of grips, pull rods and extensometry is available to provide the complete solution to your non-ambient testing requirements.



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COOLING MODULES FOR ENVIRONMENTAL CHAMBERS



Cooling module (3119 series)

Description

Cooling modules are optional devices that allow environmental chambers to be used below room temperature using CO₂ or LN₂ gases.

Principle of Operation

The cooling module is a solenoid valve that injects cooling gas into the chamber. It is activated automatically by the temperature controller of the chamber.

Application Range

- For use with environmental chambers when operation below room temperature is required

CO₂ Cooling Modules

Catalog Number	Temperature Rating	Notes
3119-100	-70 °C (-95 °F)	For use with 3119 series chambers (except 3119-402, 3119-403)
3119-111	-70 °C (-95 °F)	For use with 3119-402 chambers
3119-113	-70 °C (-95 °F)	For use with 3119-403 chambers
M3-TCC3	-57 °C (-70 °F)	For use with M3-TCC chambers

LN₂ Cooling Modules

Catalog Number	Temperature Rating	Notes
3119-101	-70 °C to -150 °C (-95 °F to -240 °F)	For use with 3119 series chambers (except 3119-402, 3119-403) depending on chamber
3119-112	-70 °C (-95 °F)	For use with 3119-402 chambers
3119-114	-70 °C (-95 °F)	For use with 3119-403 chambers
M3-TCC2	-155 °C (-250 °F)	For use with M3-TCC chambers

Hoses

Catalog Number	Description
3119-103	CO ₂ coolant inlet hose set (1/4 in BSP female to 3/8 in BSP female at bottle end; includes adapter Whitworth thread 0.86 in x 14 TPI female)
3119-104	LN ₂ coolant inlet hose set (1/2 in BSP female on both ends)
3119-105	CO ₂ coolant inlet hose set (CGA 295 female fitting 825 NGO - RH to 14 NGO - RH)
3119-106	LN ₂ coolant inlet hose set (CGA 295 female fitting 0.75 UNF -2A RH to 16 UNF -2A RH)

ENVIRONMENTAL CHAMBERS

Items for Use with 3119-402

Catalog Number	Description	Page Number
3119-111	CO ₂ cooling option for use with 3119-402 chamber	82
3119-112	LN ₂ cooling option for use with 3119-402 chamber	82

Items for Use with 3119-403

Catalog Number	Description	Page Number
3119-113	CO ₂ cooling option for use with 3119-403 chamber	82
3119-114	LN ₂ cooling option for use with 3119-403 chamber	82

Items for Use with 3119-406, 3119-409

Catalog Number	Description	Page Number
3119-201	Rigid mounting brackets for 3119-406, 3119-409 chambers	83
3119-202	Rigid mounting brackets for 3119-406, 3119-409 chambers	83
3119-203	Rigid mounting brackets for 3119-406, 3119-409 chambers	83
3119-206	Rigid mounting brackets for 3119-406, 3119-409 chambers	83
3119-230	Roller carriage brackets for 3119 series chambers	83
3119-100	CO ₂ cooling module for use with 3119 series temperature chambers	82
3119-101	LN ₂ cooling module for use with 3119 series temperature chambers	82
3120-007	RS232 communications port option	—

Items for Use with 3119-407, 3119-408, 3119-410

Catalog Number	Description	Page Number
3119-204	Rigid mounting brackets for 3119-407, 3119-408, 3119-410 chambers	83
3119-205	Rigid mounting brackets for 3119-407, 3119-408, 3119-410 chambers	83
3119-230	Roller carriage brackets for 3119 series chambers	83
3119-100	CO ₂ cooling module for use with 3119 series temperature chambers	82
3119-101	LN ₂ cooling module for use with 3119 series temperature chambers	82
3120-007	RS232 communications port option	—

Items for Use with 3119-506

Catalog Number	Description	Page Number
3119-201	Rigid mounting brackets for 3119-405, 3119-406, 3119-409 chambers	83
3119-202	Rigid mounting brackets for 3119-405, 3119-406, 3119-409 chambers	83
3119-203	Rigid mounting brackets for 3119-405, 3119-406, 3119-409 chambers	83
3119-206	Rigid mounting brackets for 3119-405, 3119-406, 3119-409 chambers	83
3119-230	Roller carriage brackets for 3119 series chambers	83
3119-100	CO ₂ cooling module for use with 3119 series temperature chambers	82
3119-101	LN ₂ cooling module for use with 3119 series temperature chambers	82

Model TCC Environmental Chamber

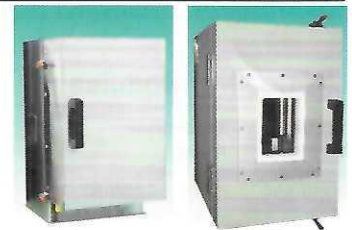
Catalog Number	Temperature Rating	Accessory Width	Accessory Height	Accessory Depth	Notes
M3-TCC	-155 °C to +371 °C (-250 °F to +700 °F)	343 mm (13.5 in)	521 mm (20.5 in)	750 mm (29.5 in)	Requires cooling option for below ambient tests

Notes

- For use with model M3 creep systems only

Items for Use with M3-TCC

Catalog Number	Description	Page Number
M3-TCC1	View port for M3-TCC chamber	—
M3-TCC2	LN ₂ injector for M3-TCC chamber	82
M3-TCC3	CO ₂ injector for M3-TCC chamber	82



M3-TCC

M3-TCC1