

FELIS F309 / F318 / F323

Small, robust radiation pyrometer series



Highest Quality Measurements by

- Digital signal processing
- Continuous ambient temperature compensation
- Optimized optical components

1-color pyrometers for non-contact temperature measurement

- **Shortwave spectral ranges** for measurements on metals, ceramics, bare graphite and many other materials.
- **Green laser aiming light**, clearly visible on red-hot surfaces.

Temperature ranges

from 50 – 600°C
to 650 – 1800°C

Response time

1,5 ms

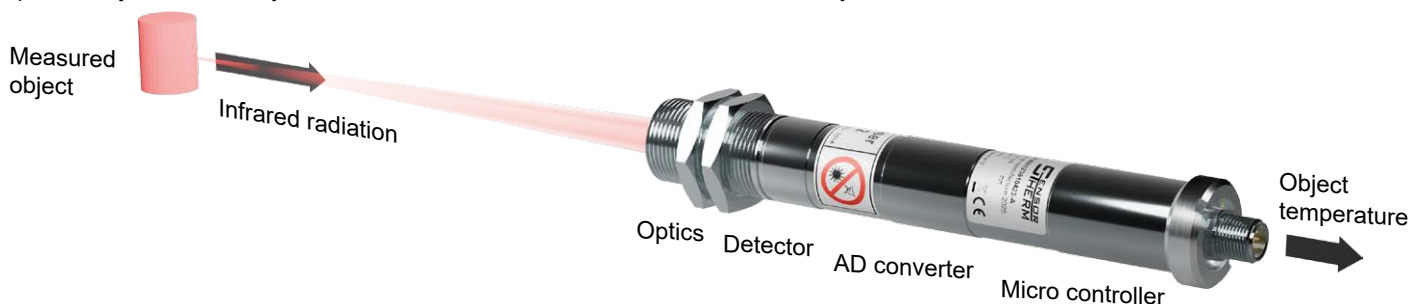
Smallest possible spot size

1 mm

Compact, complete, digital

The FELIS series combines modern pyrometer technology with the advantages of digital signal processing and small housing dimensions.

The digital micro controller signal processing ensures 100% reproducibility of the displayed measured values through mathematical integration of set measurement parameters and continuous ambient temperature compensation. This technology also allows for quick readjustment at any time should measurement deviations arise over the years.



FELIS pyrometers are designed for **ambient** and **housing temperatures** between **7** and **70°C** (45 and 158°F).

The effects of temperature fluctuations are continuously digitally compensated.

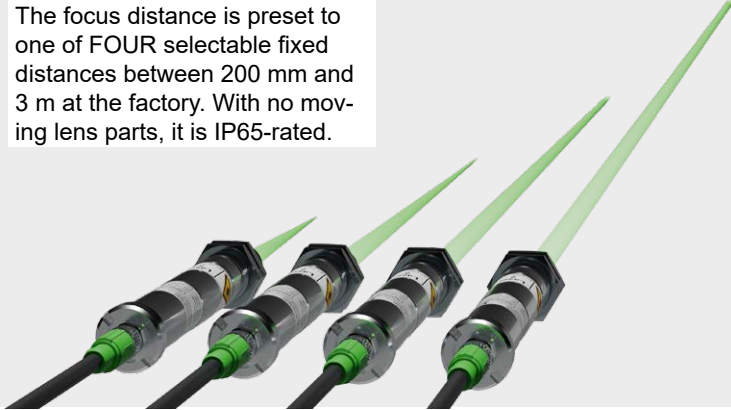
Technical Data

Model	F309	F318	F323
Temperature ranges	550 – 1400°C 650 – 1800°C	100 – 700°C 150 – 900°C	50 – 600°C
Temp. sub ranges	Any temperature sub-range adjustable within the temperature range (minimum span 50°C)		
Spectral range	0.7–1.1 µm	1.65–2.1 µm	2–2.6 µm
Detector	Silicon	InGaAs	InGaAs
Response time t ₉₀	< 1.5 ms (with dynamical adaptation at low signal levels), adjustable up to 10 s		
Uncertainty (ε = 1, t ₉₀ = 1s, T _A = 23°C)	Full-scale value ≤ 1400°C: 0.3% of reading in °C + 1K Full-scale value > 1400°C: 0.5% of reading in °C + 1K		70-100°C: 3° > 100°C: 0.5% of reading in °C+1K (min. 2°C)
Repeatability (ε = 1, t ₉₀ = 1s, T _A = 23°C)	0.1% of reading in °C + 1K	0.2% of reading in °C + 1K (min. 1.6°C)	
Analog output	0 or 4–20 mA, max. load: 500 Ω, resolution 0.0015% of the (adjusted) temperature (sub) range (16 Bit). Output can be set within the temperature range.		
Serial interface	RS485 (4.8–921.6 kBd). Resolution 0.1°C / °F		
Inputs / outputs	2 digital inputs/outputs, each configurable as input or output: ■ Digital input (via supply voltage): laser targeting light on/off, clearing of peak picker, load a set of parameters. ■ Digital output (max. 50 mA): limit switch, beginning of temperature range exceeding, device measuring readiness, device over-temperature.		
Device parameters	Temperature sub range, response time (<1 ms–10s), emissivity (0.050–1.200), transmittance (5–100%), peak picker (clear settings: automatic, time clear or externally via digital input), device address (00–97), baud rate (4.8–921.6 kBd), analog output (0 or 4–20 mA), temperature unit (°C/°F).		
Power requirement	24 V DC (18–30 V DC), max. 12 VA; protected against reverse polarity		
Isolation	No galvanic separation		
Sighting	Laser targeting light, green: λ=515 nm, P< 1 mW, laser class 2 according to IEC 60825-1		
Ambient temperature	7 to 70°C (45 to 158°F)		
Storage	-20 to 85°C (-4 to 185°F)		
Relative humidity	Non-condensing conditions		
Housing/protection class	Stainless steel / IP65 (with plugged in connector)		
Weight	Approx. 500 g		
CE label	According to EU directives		

Features

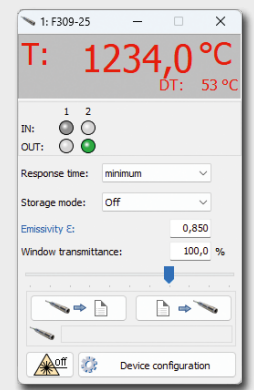
Integrated Optics

The focus distance is preset to one of FOUR selectable fixed distances between 200 mm and 3 m at the factory. With no moving lens parts, it is IP65-rated.



Device configuration

Measurement parameters and device settings can be adjusted via software after connection via the RS485 interface (e.g. via USB interface converter).



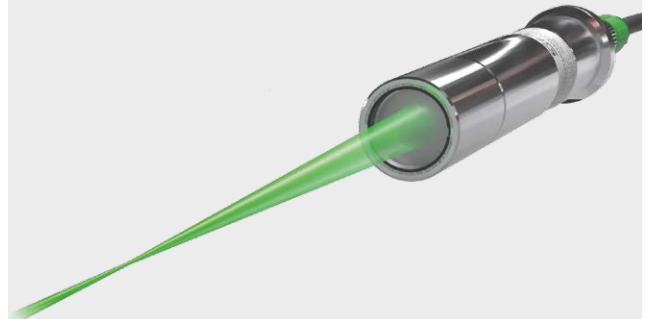
Connections



- 0/4-20-mA analog output
- RS485 interface
- 2 configurable digital inputs / outputs as switching input or switching output
- Standard M12 sensor cable

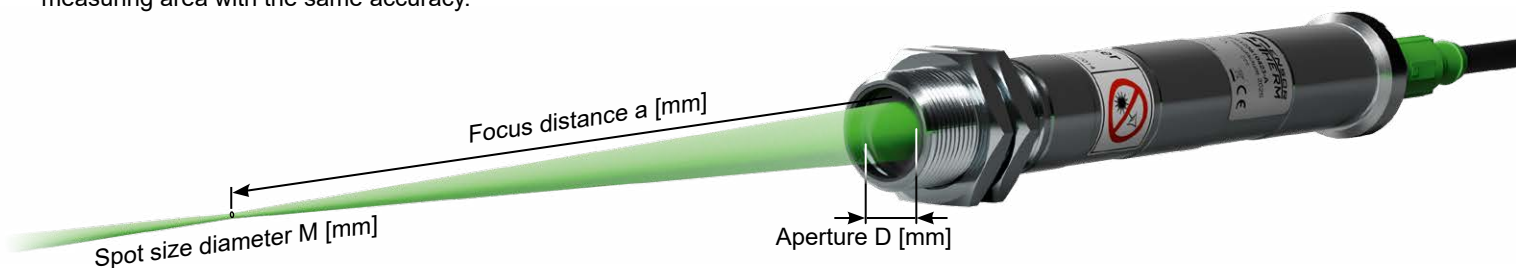
Sighting

A **green laser targeting light**, clearly visible on red-hot surfaces, indicates the focus distance and the center of the spot size.



Optics Data

The **spot size diameter** is smallest at the optics **focus distance**. However, you can also deliberately measure in the defocused area (in front of or behind the focus) to determine the temperature of a larger measuring area with the same accuracy.



With integrated lenses, the focus distance is preset to a fixed distance. Fiber optics are adjustable.

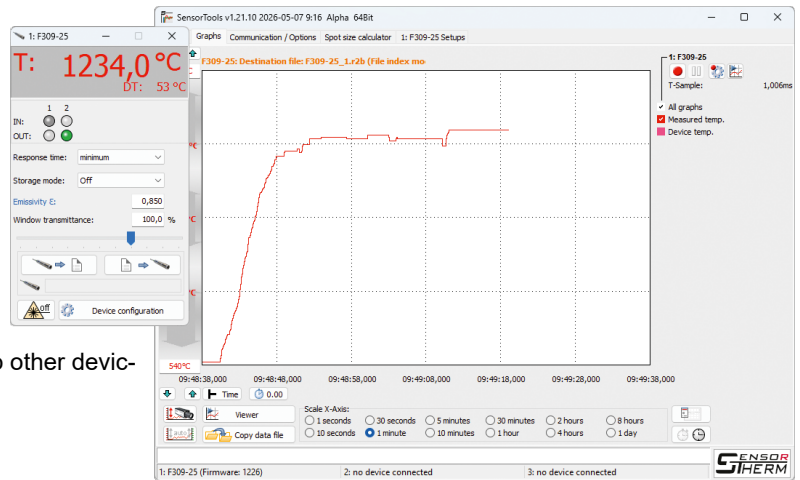
Objektiv:	OF09-A0	OF09-B0	OF09-C0	OF09-D0
Models and temperature ranges:	F309 all temp. ranges	F318 100–700°C	F318 150–1200°C	F323 50–600°C
Focus distance a [mm]	Spot size diameter M [mm]			
200	1	1.7	1	3.2
500	2.4	4.8	2.6	9.1
1000	5	10	5.5	19
3000	15.6	30.5	16.8	58.5
Aperture D:	13 mm			

M refers to 90% of the absorbed thermal radiation.

SensorTools Software (included in delivery)

Communication and evaluation software for all pyrometers, controllers, digital displays and calibration sources.

- Measured value display, graphically and numerically, device temperature
- Measured value recording incl. parameters
- View and compare up to 16 measurement data files simultaneously in the *SensorTools Viewer*
- Make all device settings
- Switch on / off laser targeting light
- Special recording settings: externally start / stop, retroactive or extended recording via signal input
- Print or save pyrometer settings, or transfer settings to other devices or export to csv files



Accessories

Installation

Adjustable mounting bracket: HA14



Electrical

Connection cable
with straight plug: FK431005
with angled plug: FK431010
Adapter cable from 12-pin to 8-pin FA1001
(Cables are available in 1.5, 3, 5 and 10 m)



DIN rail power supply 24 V / 1.3 A: NG12-10



RS485↔USB interface converter,
open connecting wires, 1.7 m cable: DK5485



Displays, Controllers

PID controller, programmable: Regulus RF/RD

LED digital display: IF00



Protection / Extras

Water cooling housing: KG60-13



Air purge unit: BL14-13



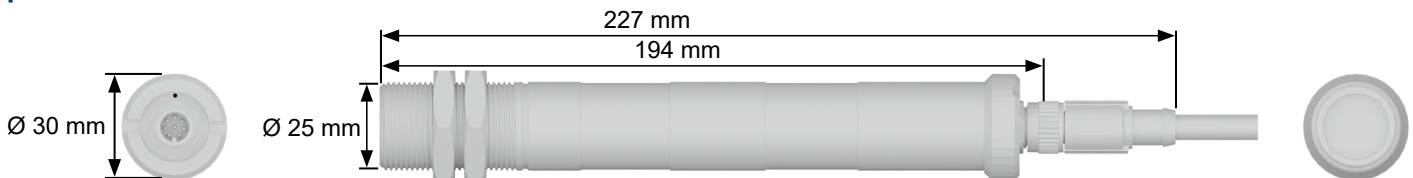
90° deflection mirror: UM25-13



Scanning mirror adapter: SC10-13



Dimensions



Order details

Specify the model with the temperature range, the focus distance for integrated optics, and the desired optics for fiber optic devices.

Scope of delivery: Device with works certificate. Operating instructions and *SensorTools* software are available for download. Connection cables are not included and must be ordered separately.

Sensortherm reserves the right to make changes in scope of technical progress or further developments.

Sensortherm-Datasheet_Felis_F309_F316_F318_F323 (July 1, 2026)

Sensortherm GmbH

Infrared Temperature Measurement and Control
Weißkirchener Str. 2-6 • D-61449 Steinbach/Ts.
Tel.: +49 6171 887098-0 • Fax: -989
www.sensortherm.com • info@sensortherm.com

