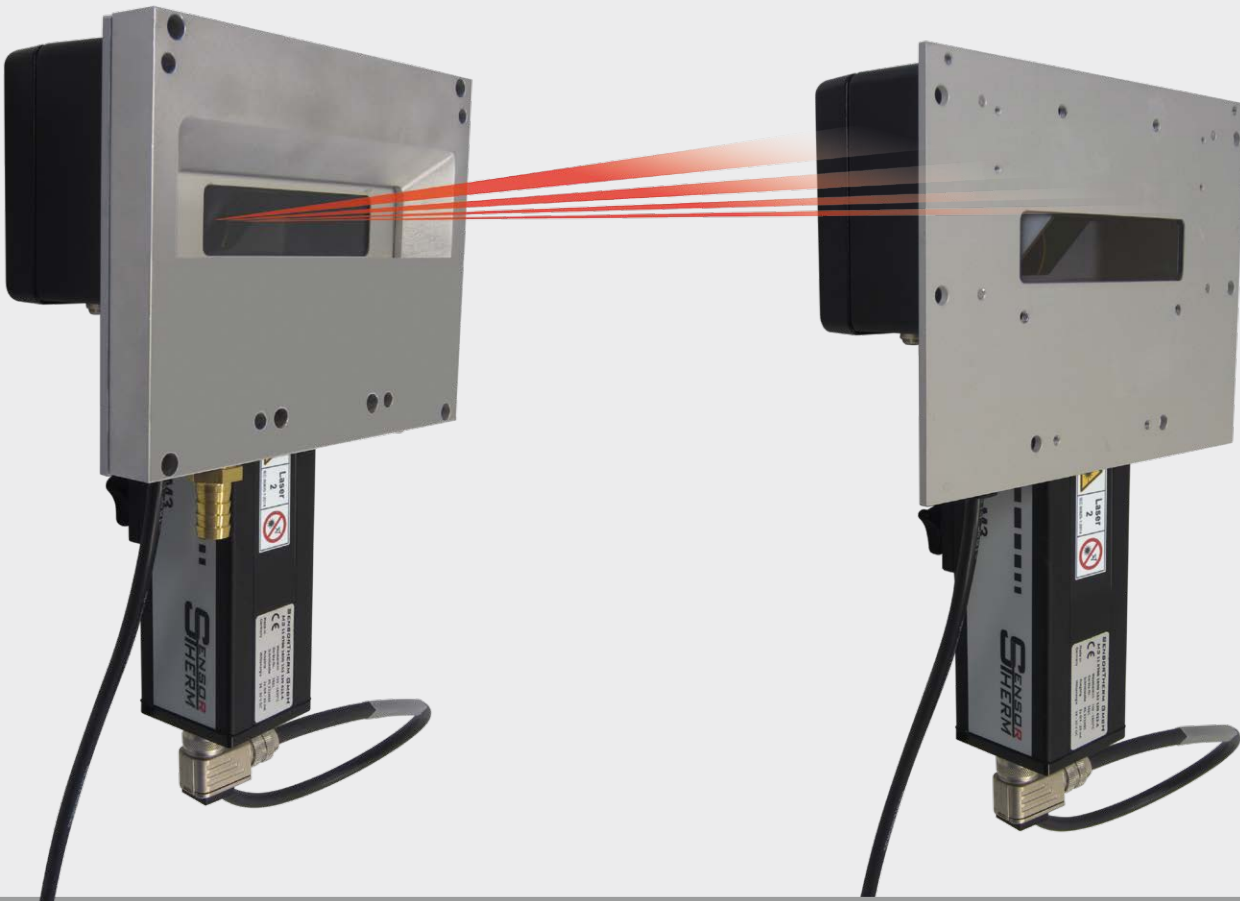# GALAXY SC7x / SC8x

Line Temperature Scanners

SC7 series: with air purge unit

SC8 series: without air purge unit

Temperature scanner for the linear scanning of objects.

- ■ **Can be used with 1-color and 2-color pyrometers**
- ■ **Temperature evaluation**
    - **Without PC** vvia separate analog outputs for each measuring region
    - **With PC** for graphic display and evaluation of the measurement results, e.g. for generation of surface images as with thermal imaging cameras

- ■ **Typical application**
    - Temperature peak detection on slabs, billets or steel strips
    - Temperature monitoring of bulk material on conveyor belts
    - Temperature monitoring in flat glass production

Universally applicable

with all METIS pyrometers

Fastest scans

Up to approx. 150 Hz

Individually customizable

Up to 16 measuring regions

Temperature Measurement Along the Line

GALAXY line scanners move the spot size of a pyrometer continuously over objects and record temperatures at even angular intervals. With an adjustable measuring angle between 0.56 and 90°, 10 to 1600 measured values can be recorded and evaluated.

Each of the up to 16 measurement regions can be evaluated separately. As soon as a region has been passed through, maximum, minimum or average temperatures are output at the analog outputs or even all are displayed together on the PC.

This enables extensive evaluations:
- Temperature profiles provide information about the temperature distribution between edge and middle object areas
- Maximum, average and minimum value of each scan of the material to be measured, provide a quick overview of compliance with the necessary object temperatures.

Technical Data

Model	SC71 / SC81	SC72 / SC82	SC73 / SC83	SC75 / SC85
Scanning angle / steps	0.56° – 90° (10 – 1600 single steps) in 0.05625°-steps adjustable			
Scanning frequency	Adjustable from 6.25 Hz (90° scan angle) to ca. 150 Hz (3.6° scan angle), with 10–10000 steps/s			
Measurement regions	16			
Analog outputs for measurement regions	**0 + 1** *)	**4 + 1** *)	**8 + 1** *)	**16**
- Current signal	–	0/4–20 mA, switchable, for all outputs		
- Measurement uncertainty	–	Each output = 0.15% of the input value		
Position analog output	*) **1** x angular position, switchable to measurement region output. 0/4–20 mA = 0–90°; corresponds to step 1–1600			
Digital inputs / outputs	2		4	
- Digital input functions	■ Activate the scanner externally using the release signal ■ Activate the scanner and PC data transfer externally using the release signal			
- Digital output functions	■ Device operational readiness ■ Temperature limit exceeded ■ Temperature limit exceeded in a region ■ Device above certain ambient temperature			
Serial interfaces	■ RS485 (half-duplex, bus-compatible), baud rate 19.2–921.6 Kbit/s ■ Ethernet 100 Mbit/s ■ USB service interface for parameterization			
Operating modes	■ Positioning mode for measuring at a certain point ■ Continuous scan operation without data transmission ■ Scanning operation with transmission of the measuring temperatures from both scanning directions ■ Scanning operation with transmission of the measuring temperatures from one scanning direction			
Power supply	18–36 V DC, max. 1.5 A (plus power consumption of the connected pyrometer)			
Protection class	IP65 (according to DIN 40 050) with protective window, closed housing, mounted pyrometer and screwed connectors			
Weight	1.7 kg without pyrometer; 2.5 kg with pyrometer, 16 kg in protective housing			
Ambient temperature	0–53°C device temperature			
Storage temperature	-20–60°C			
Rel. humidity	Non-condensing conditions			
CE label	According to EU directives for electromagnetic immunity			

# Typical Applications: Scanning Single or Multiple Objects

Serial interfaces for long data transmission distances for setup and evaluation on PC or PLC.

Analog outputs for connecting evaluation devices on site:
For position and temperature information of the measuring regions.

Scanning angle adjustable between 0.56 and 90°.

16 measurement regions adjustable or measure on one position

High scanning speed or adjustable high-speed bridging between the measurement regions for the fastest possible evaluation of all important information.
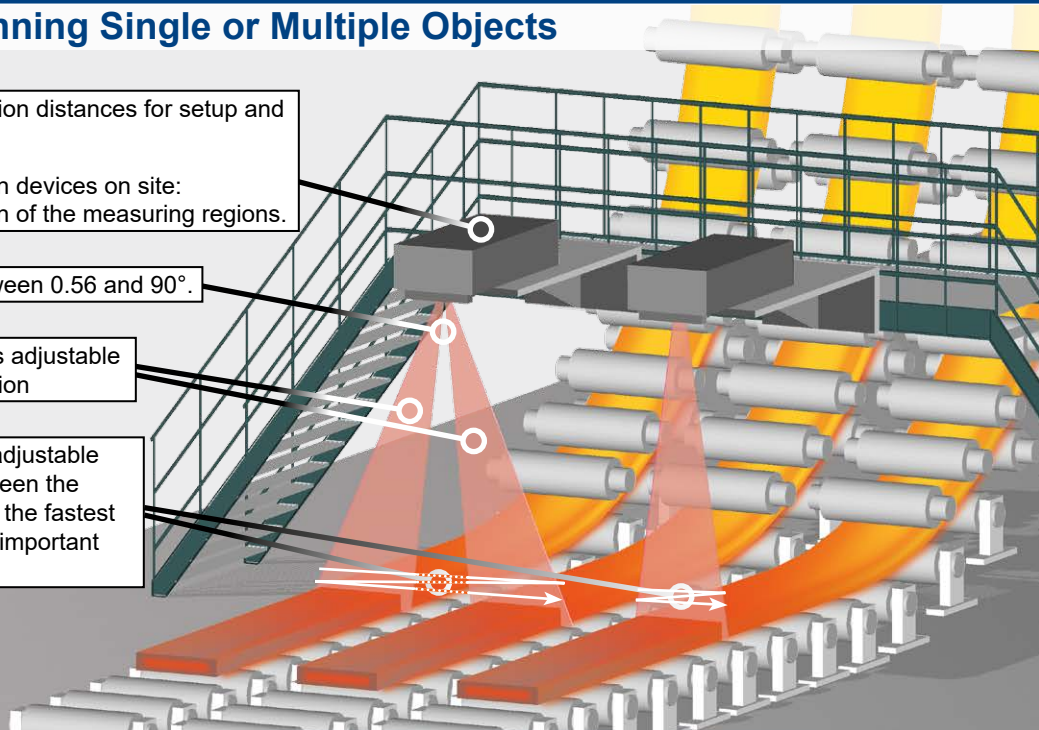
Features

Constantly exact measurement results

- Air purging unit to keep the protective window clean
- Fast and exact stepper motor, designed for 24h continuous operation

Alignment

- Measuring distances defined by pyrometer optics
- Laser targeting light from the pyrometer can be used
- Precise setting of the measuring regions by single step mode

Connections

- Depending on the model, up to 16 analog outputs, separately for each measuring region
- Analog output for angular position
- Ethernet and RS485 interface
- Depending on the model, up to 4 digital inputs / outputs for external device control or for output of switching signals at temperature events
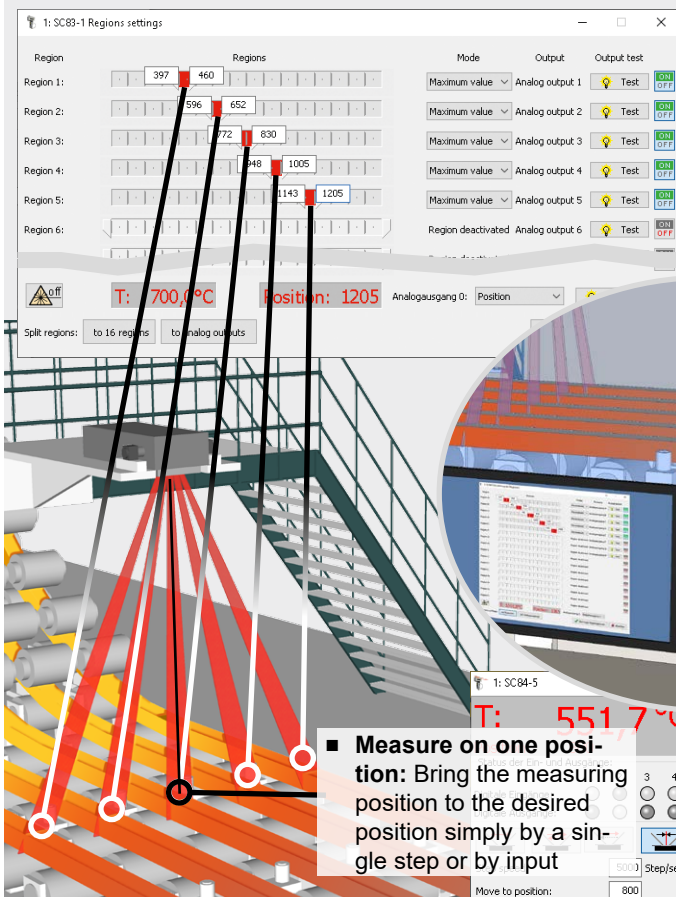- Pyrometer connection

Protective housing

- Air purge unit for scanner or for protective housing
- Cooling plate with integrated water flushing to protect against high radiation temperatures

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Set up, start, evaluate

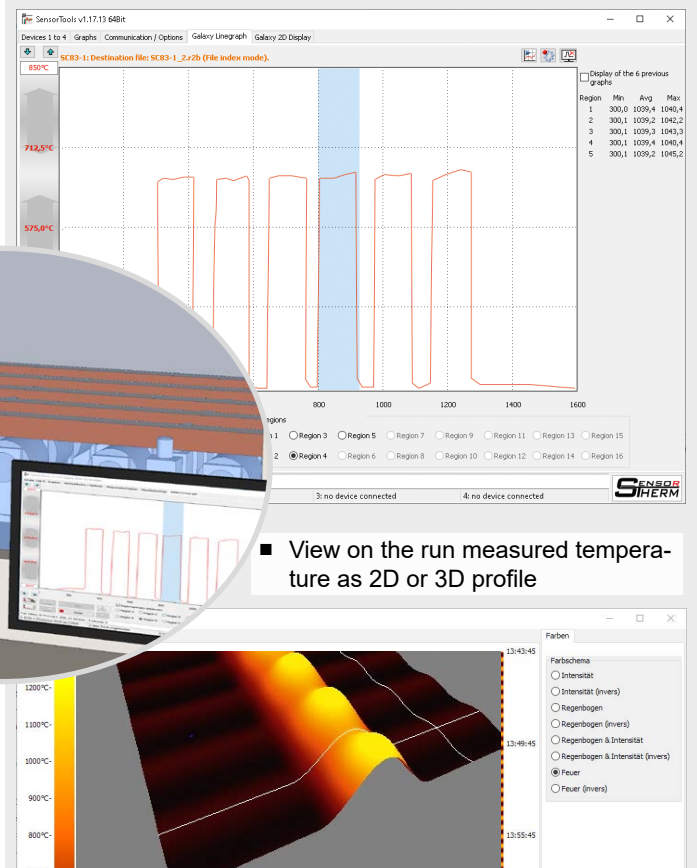Using the *SensorTools* software, all necessary settings can be made and the measurement results can be evaluated.

Set up and define measuring zones

- **Define measurement regions:** simply define by using a slider, a single step or via entry
- Set temperature output for each region

- **Measure on one position:** Bring the measuring position to the desired position simply by a single step or by input

Evaluate

- Use **continuous scan operation** with evaluation via the analog outputs
- **PC monitoring mode** for observing temperature profiles and min. / Max. / Avg values

- View on the run measured temperature as 2D or 3D profile

Reference Numbers

Scanner types		Reference numbers
		SC71 / 72 / 73 / 75 or **SC81 / 82 / 83 / 85** additionally with:
SC8x series: Scanner	**SC7x** series: Scanner with air purge unit	-**protective window** and -**optics adapter** for pyrometers with
		-21 Borosilicate -20 with manually focusable optics
		-24 Sapphire -90 with man. focusable optics M323,
		-22 Calcium fluoride with motorized focusable optics
		-23 Zinc selenide

Protective window: borosilicate   used for METIS pyrometers   M3 / H3: 9 / 11 / 16 / 18 / 22 / 23
                 sapphire   M3 / H3: 09 / 11 / 16 / 18 / 22, MP23 / 25, MB35, MY34 / 39 / 45 / 46 / 47
                 calcium fluoride   MB35, MP25, MY34 / 39 / 45 / 46 / 47 / 51 / 80
                 zinc selenide   MY48 / 78

Additionally connection cables and a METIS series pyrometer is required.

Accessories

Connection cables (available in 5 m increments)

Connection cable for power supply
of scanner and pyrometer, RS485-
Scanner interface, analog pyrometer actual value output, digital
inputs / outputs from the pyrometer   AL43

Connection cable for output of the measurement region analog
outputs 1-4, one position output and 2 digital inputs / outputs: AK40

Connection cable for output of the measurement region analog
outputs 5-16, one position output and 2 digital outputs: AK90

Ethernet cable: AK94

Electrical

DIN rail power supply
24 V / 1,6 A: NG12

LED digital display
for installation: IF00

Profinet adapter for connecting up to 5 scanners / pyrome-
ters via RS485 to a higher-level control: PN10

Assembly / protection

Protective housing with cooling plate
- with air purge unit: KG28
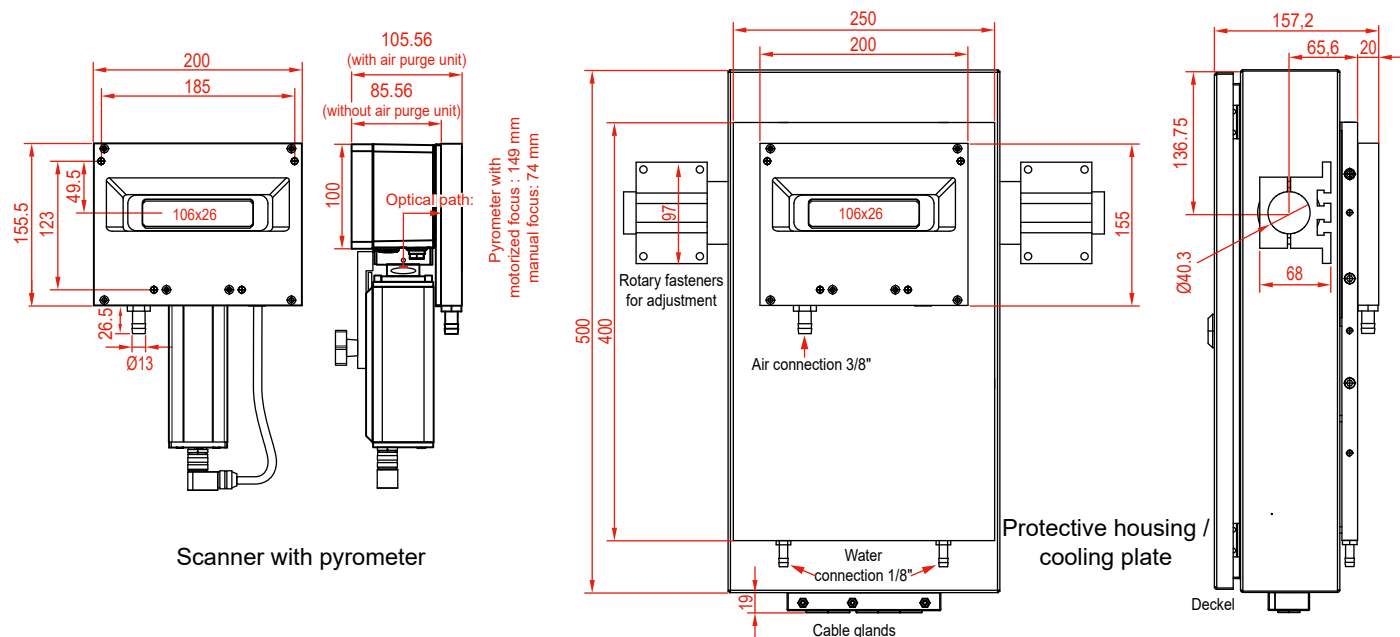- without air purge unit: KG27

Cooling plate
- with air purge unit: KG38
- without air purge unit: KG37

Protective housings or cooling plates require an
SC8, but the air purge unit can be attached to
both the scanner and the cooling plate

Ball and socket mounting for scanners
with pyrometer: HA21

Dimensions (in mm)

Scanner with pyrometer

Protective housing / cooling plate

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