

Field of View

Target Size Table								
Target distance (m)	100	50	20	10	7	5	2	1
Measurement area (mm)	576	287	114	57	39	28	11	4.8
Target distance (ft)	328	164	65.6	32.8	22.9	16.4	6.5	3.2
Measurement area (in)	22.6	11.2	4.48	2.24	1.53	1.10	0.43	0.18

Specifications - CYCLOPS 390B

Measurement range:	400 to 1400°C / 752 to 2552°F (Operating), 450 to 1400 °C / 842 to 2552 °F (Specified)
Indication:	4-digit LCD in viewfinder; external backlit LCD display
Measuring modes:	Continuous, Average, Peak, Valley
Data logging:	To PDA or laptop / PC running DL-1000v2.2 software. via Bluetooth®
Data logging modes:	Classic, Historical, Burst
Optical system:	9° field of view; 1/3° square measurement area (180:1 square to 98 % energy); eyepiece adjustable -3.75 to +2.5 diopters
Focusing range:	1 m / 39.3 inches to infinity
Minimum Target size:	4.8 mm / 0.19 in square at 101.4 cm / 39.9 in nominal from the thermometer body datum
Spectral response:	Nominally 3.9 μm
Emissivity adjustment:	0.10 to 1.20 in 0.01 step graduations
Response time:	<500 ms (to 98%)
Digital measurement:	30 ms acquisition interval
Display update time:	0.5 s
Accuracy:	<0.5% of reading
Repeatability:	≤1 °C / 2 °F
Operating temp. range:	0 to 50 °C / 32 to 122 °F
Power requirement:	One MN1604 / 6LR61 / PP3 battery
Output:	Bluetooth®
Weight:	0.83 kg / 1.8 lb
Sealing:	IP51
Standard accessories:	Lens cap, sapphire protection window, battery, wrist strap
Optional accessories:	Data Logger DL-1000, heat protection jacket, HP PDA, rugged IP67 iPAQ, Long eye relief eyepiece, waterproof carry case

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Other models available



LAND

Non-Contact Temperature Measurement Solutions

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An AMETEK® Company

Applies in the UK

Applies in the USA

450-1400°C

842-2552°F

LAND



High precision portable infrared thermometer for measurements into hydrocarbon-fuelled furnaces

CYCLOPS 390B

Furnace-Pro



An AMETEK® Company

CYCLOPS 390B Furnace-Pro

Land Cyclops 390B Furnace-Pro is a dedicated high precision, portable infrared thermometer, designed for accurate measurement in gas or oil fired furnaces, in the temperature range 450 to 1400 °C / 842 to 2552 °F.

Features

Features	Benefits
Non-contact measurement technology	No contamination, interference or damage to process or material
High accuracy measurement and repeatability	Confidence in the measurement for process control and quality control applications
Narrow, square 180:1 field of view	Optimum shape to measure reformer tubes or on slabs, billets etc on reheat furnaces
Long term drift-free measurement	Long term confidence in the measurement
Single handed operation, contact free measurement	Better Safety in hazardous environments
Standard Bluetooth	No hanging cables, link straight to a PDA device
Rugged instrument casing	Can withstand harsh environments for extended periods
Calibrated and traceable to National Standards	Your guarantee of measurement accuracy
Four Measurement modes - Continuous, Average, Peak and Valley	Measurement to exactly meet your own specific requirements
Advanced Spectral Filtering	Eliminate errors through furnace atmosphere gases
Digital signal processing, output for data logging	Access your measurement information and record it
Range of Accessories including a DL-1000 Data Logger, Long Eye Relief eye piece adapter, Rugged IP67 PDA, Heat resistant jacket, Waterproof carry case	Customise to your measurement needs

The measured temperature is displayed in four simultaneous modes: continuous, peak, average and valley.

Accurate sighting is ensured by the clear, wide angle (9°) field of view and small, clearly defined (1/3°) square measurement area. Focusing is variable from 1m. / 3ft to infinity.



Measurement Display

The operating waveband (3.9 µm) has been carefully chosen as a narrow spectral response centred at 3.9 µm eliminates errors caused by absorption / emission bands present in combustion gases.



Heat resistant jacket



Long eye relief (LER) Eye piece adapter



Waterproof carry case

Accessories

A range of standard and optional accessories is available including:

Heat resistant jackets to provide protection against excessive heat and dust.

A waterproof carry case is available as an optional accessory.

Long Eye Relief Eye piece adapter - where you are wearing protective goggles or a hard hat with face shield, e.g. when you cannot directly see through the eyepiece.

Taking a Measurement

All four processed temperature values are displayed continuously on the graphics panel when the trigger is pressed.

- **Peak temperature**
Maximum from when trigger pressed
- **Continuous temperature**
0.5s display / serial updates when the trigger is pressed
- **Average temperature**
From when trigger pressed. Adjustable time constant
- **Valley temperature**
Minimum from when trigger pressed

The user can select the measurement type, which is also displayed in the viewfinder. Once the trigger is released the measurement is taken. This data can be stored on the optional DL-1000 Data logger via wireless connection to an PDA.

Data Logger DL-1000

The Pocket PC based Cyclops DL-1000 Data Logging System provides a fast and simple method for logging background-compensated measurements inside furnaces. Background measurements are logged then averaged by the software to a single value. All subsequent target measurements logged are then automatically stored as background compensated measurements.

Data sheet PDS018 provides further details.

Wireless communications using Bluetooth®

Wireless data logging to Bluetooth® equipped PDA (safely in your pocket) or PC / laptop with connections typically over several metres.

Rugged IP67
PDA Pocket PC (optional)



Menu Controls

Simple, easy to use controls to select required mode from the icon based menu.

Multi-function Display

The bright, back-lit external display panel provides an indication of status and configuration of the thermometer together with four simultaneous live measurement modes. The panel displays an intuitive, icon-driven, language-free menu system navigated via key pad controls.

Mode selection

- Emissivity
- Window Compensation
- Communication Status
- Battery Status
- Alarm Status



The user highlights the mode to be displayed in the viewfinder.

Optics

Single through the lens reflex optical system gives a precise definition of the square target spot and simultaneous backlit display of user selected temperature mode in the viewfinder. A robust sapphire protection window is provided as standard.

Connectivity

C100B offers data logging to DL-1000 via Bluetooth®



Flexible Operation

Three data output modes to the DL-1000 Data logger software are available:

- **Classic mode** - logs a measurement for each trigger release
- **Historic mode** - logs continuous, average, peak and valley readings
- **Burst mode** - logs a stream of measurements to the DL-1000 while the trigger is held pressed - approximately 30 to 35 readings / sec, up to a maximum of 999 readings per burst.

Applications

- Where measurement errors due to hotter background reflections are a problem, they can be minimised using the Cyclops Furnace-Pro
- Petrochemical industry e.g. tube temperatures in tube furnaces (pyrolysis, reformer, cracking)
- Steel industry, stock temperatures in the preheat and heating zones of reheat furnaces

