



CONCOAT SYSTEMS
Measuring Electronics Reliability



SOLDAPRO™ – THERMAL PROFILERS

SoldaPro Slimline – the ultra intelligent thermal profiling solution

The SoldaPro Slimline is a highly compact and accurate thermal profiler (previously available from Multicore Solders) that measures and records temperature ranges experienced by an assembly during the reflow soldering process. This data can be used to promptly establish optimum soldering profiles for a given assembly, set of process materials and soldering oven.

The SoldaPro Slimline also serves as an invaluable calibration tool that can be used to accurately verify indicated oven settings. This minimises scrap and rework costs by ensuring a consistent product quality.

The SoldaPro Slimline is supplied with a full starter kit that contains everything required to immediately start process profiling. This includes six Type T thermocouples to provide thermal data at selected points across an assembly. These are attached using polyimide tape or high temperature solder and are connected directly to the profiler.

The battery-powered SoldaPro Slimline travels through a soldering oven behind the assembly (or on a dummy carrier) without the inconvenience of any trailing wires and is operated via just two switches on its front panel: “On/Off” and “Store/Print”. After switching the unit on, the user simply flips the “Store/Print” switch to the left to start recording.

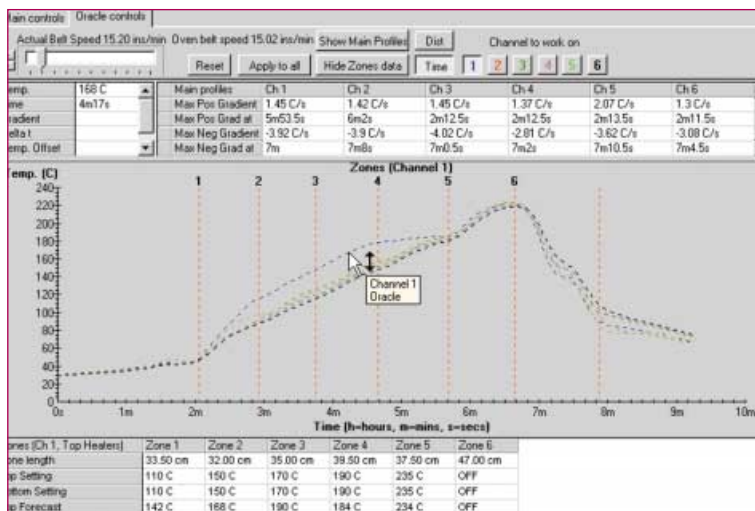
This robust and rugged device, supplied in a polished stainless steel case, only requires thermal shielding (via a dedicated glove) for elevated process temperatures and/or prolonged cycle times. Even with its standard 19mm glove fitted, this ultra slim unit (which is just 13mm high) can still easily pass through virtually all oven entry and exit doors.



The SoldaPro Slimline can record up to 2048 independent measurements on each of its six channels at a user selectable sampling interval down to 25ms (40Hz). If only three channels are used, recording increases to 4096 measurements/ch. Upon exiting a soldering machine, the user simply returns the “Store” button to its original neutral (“off”) position and the measurement cycle is complete.

A built-in serial interface allows stored profile data to be downloaded to a PC for further analysis or printed out direct from a printer as a graph of temperature against time for each thermocouple, accurate to $\pm 2^{\circ}\text{C}$. Printouts include status indicators such as the internal temperature of the SoldaPro Slimline (to warn of overheating) and its battery condition (to protect against loss of vital profile data). A wide range of user selectable operating languages are also included as standard.

Establishing optimum reflow profiles no longer relies on “trial and error” guesswork



Oracle software predicts oven and assembly behaviour (see overleaf)



Powerful computer analysis saves time and effort and prevents costly mistakes

SoldaPro Slimline Oracle PC Software Package

The optional SoldaPro Slimline Oracle PC software package realises the full potential of the SoldaPro Slimline. This immensely powerful profile forecasting and statistical analysis software exploits the latest artificial intelligence algorithm techniques to actually learn the unique soldering behaviour of a given oven, assembly and process materials combination.

In doing so it automatically compensates for a host of non-ideal reflow characteristics. These include errors in the calibration of an oven's conveyor, large differences in component thermal loads, thermal 'over-spill' between heating zones, and even the effects of oven cleaning cycles.

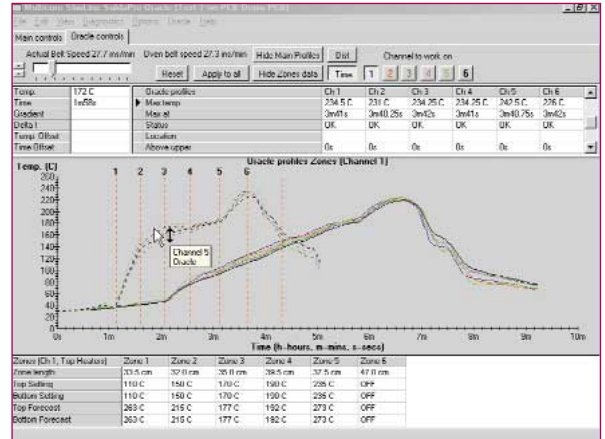
As a result, every time SoldaPro Slimline passes through a given process, the results are analysed and used to enhance the instrument's unique 'self-modifying' understanding of that process. This knowledge

is used to help users obtain the genuine optimum oven settings for a desired profile quickly and easily. As a result, the production and adjustment of thermal profiles no longer relies on trial and error guesswork based solely on previous experience. It is now a computer-based, precision science.

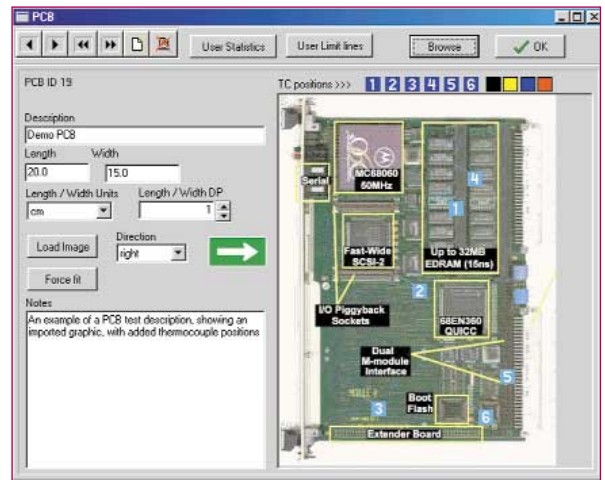
With the SoldaPro Slimline, users simply define the required optimum profile, and the instrument then reliably forecasts the system settings needed to achieve the desired profile, given the unique characteristics of their own process.

Other features include the ability to add PCB descriptions to each profile so that thermocouple positions can be displayed graphically.

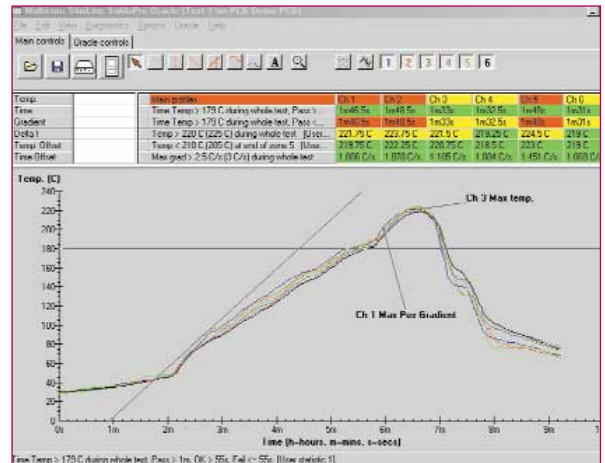
SoldaPro Slimline Oracle will run on almost any modern PC, although a 166MHz+ processor speed, 32Mb+ RAM and 200Mb+ of free hard disk space is recommended.



Established profiles can be stored and re-imported at a later date



PCB descriptions can be edited on-screen



Users can define a full range of process statistics

TECHNICAL SPECIFICATIONS

- **Measurement range** 0 to 400°C
- **Resolution** 0.25°C
- **Accuracy (room temp. calibration)** ±1°C at room temp
±3°C device at 10 – 70°C
- **Accuracy (high temp. calibration)** ±1°C device at 10 – 70°C
- **Sampling channels** 6 x Type T thermocouples
4096/channel (6ch. mode)
2048/channel (3ch. mode)
- **Max. sampling number** Single recharge sufficient for approx. 50 test cycles
Switches off between samples
- **NiMH Battery life (rechargeable)** 0.25secs to 99hours
- **Battery life extender** User selectable
- **User selectable sampling interval** Records time/date of tests
- **Thermocouple offsets**
- **Real time clock**
- **Dimensions:**
SoldaPro Slimline 154 x 120 x 13mm
Kapton Sleeve 190 x 155 x 19mm

The software is available in 14 different languages

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Alasan House, Albany Park, Frimley Road,
Camberley, Surrey, GU16 7PH, England.
Tel: +44 (0)1276 691100
Fax: +44 (0)1276 691227
Email: sales@concoat.co.uk
www.concoat.co.uk



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