



TEMPSENS

Thermal & Cable Solutions



Thermal Profiling System

Datalogger & Thermal Barrier Box

Thermal Profiling System



Tempsens Instrument Pvt. Ltd.

Tempsens is a part of Pyrotech Group, which was established in 1976 by four tech-savvy technocrats. Tempsens has carved its niche in bringing technology and engineering together in the field of Thermal and cable solutions.

After the initial beginning with Thermocouples and RTDs, Tempsens has increased its product basket to Wires, Cables, Non-Contact Pyrometers, Thermal Imagers, Heaters, Furnaces and Calibration equipment etc. Tempsens has been adding innovative products in its domain area.

Our mission is to lead the Thermal and Cable industry with Passion, Innovation, Excellence & Reliability.

Tempsens Thermal Profiling Systems

Tempsens Instruments specializes in thermal profiling technology, which is a valuable tool used in various industries to monitor and optimize heating processes. By tracking temperature variations and creating thermal profiles, engineers can improve product quality and increase production efficiency. The thermal profile shows the temperatures reached, how long they stayed, and where they were in the process. This technique is used in automotive, electronics, food processing, pharmaceuticals, and heat treatment processes. It helps fine-tune processes, save energy, and ensure consistent high-quality output.

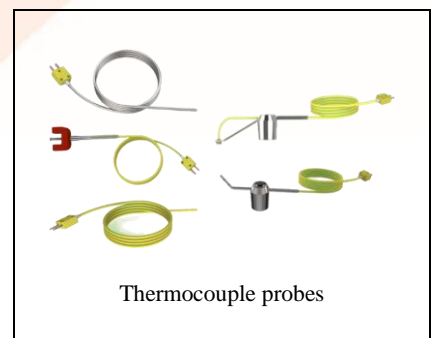
We offer products like thermal barrier boxes, thermocouples, and data loggers, along with software for easy analysis. Visit our blog to learn more about temperature profiling in different industries and its importance.

For the video:

Temperature Profiling System: [Videos](#)

For the blog:

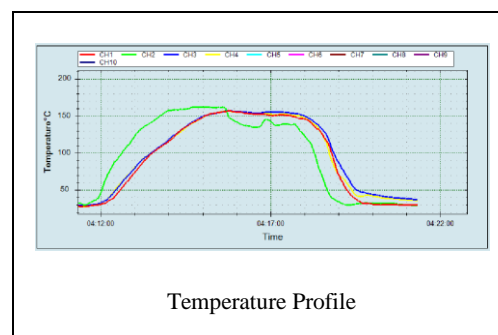
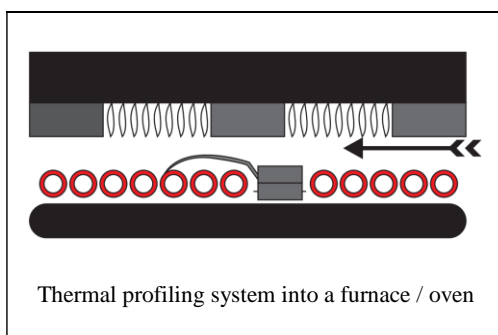
Temperature Profiling System: [Blogs](#)



I

II

III



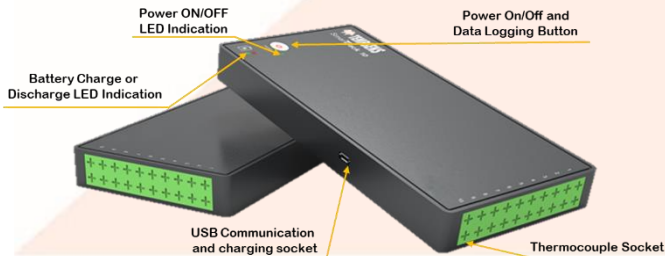
IV

V

Thermal Profiling System



SmarTrack 10 Data Logger



SmarTrack 10 Software

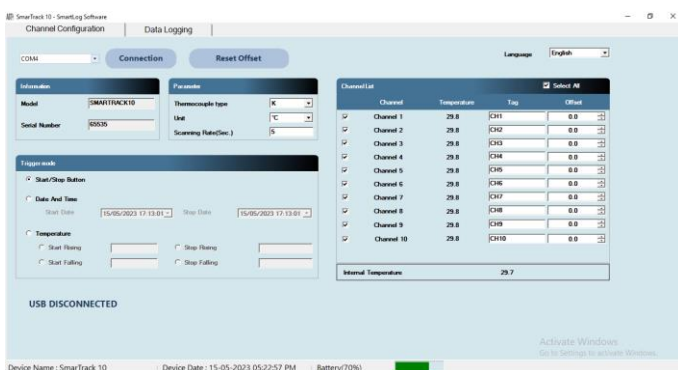
The SmarTrack 10 software is designed to help you collect data and turn it into useful information. With this information, you can analyze your data effectively and improve your processes. The software provides various functions that allow you to customize how you analyze your data. Here are some of the things you can do with the software:

- Compare data from multiple channels.
- Export and import data in Excel format.
- One-page reports in PDF, Excel, or Word format.
- Monitor battery health.
- Support multiple triggering modes.
- Incorporate an offset feature.
- Configure data logger settings.
- Adjust the scanning rate.
- Assign different channel tags.
- Provide graphical representation of the data.

By using these features, you can easily collect and analyze your data, making it simpler to understand and use in your work.

Technical Specifications

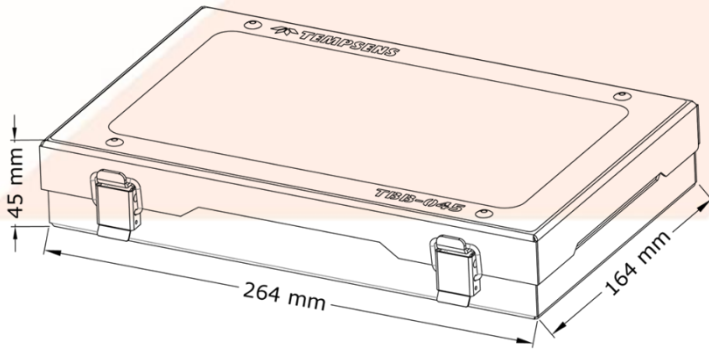
Specification	SmarTrack 10
No. of Channel	10
Input Type	Standard “K” Type Thermocouple (Others thermocouple types are available on order)
Accuracy	±1.0°C (for sampling interval ≥ 1sec.)
Resolution	0.1°C
Reference Junction Compensation	Internal
Memory Size	50000 readings per channel with date & Time
Sample Interval	100 msec to 1 hour
Communications	USB 2.0
Max. Operating Temperature	70°C (Rechargeable) (ST10-K-R) 100°C (Non-Rechargeable) (ST10-K-N)
Weight	500 gm
Parameterising via Software	Type selection, No. of channel selection, Sampling interval, Date and time setting etc.
LED Indications	Charging, low Battery, Communication, Start, Stop etc.
Battery	Rechargeable (ST10-BP-R) Non-Rechargeable (ST10-BP-N)
Future Scope	Wireless Telemetry (WiFi / Bluetooth)



Thermal Profiling System



Thermal Barrier Box: TBB-045

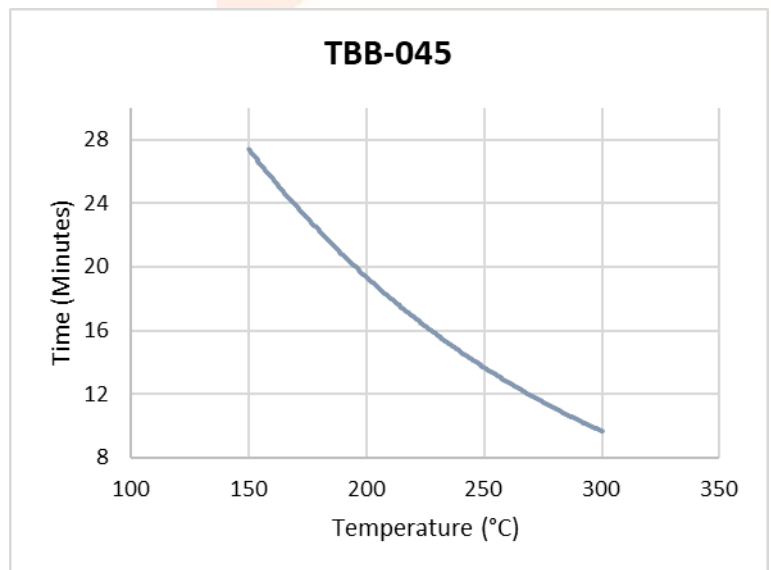


Approx. Weight: 3 Kg

Temperature °C / °F	150 °C / 302 °F	200 °C / 392 °F	250 °C / 482 °F	300 °C / 572 °F
Duration	26 Mins.	20 Mins.	15 Mins.	9 Mins.

Application:

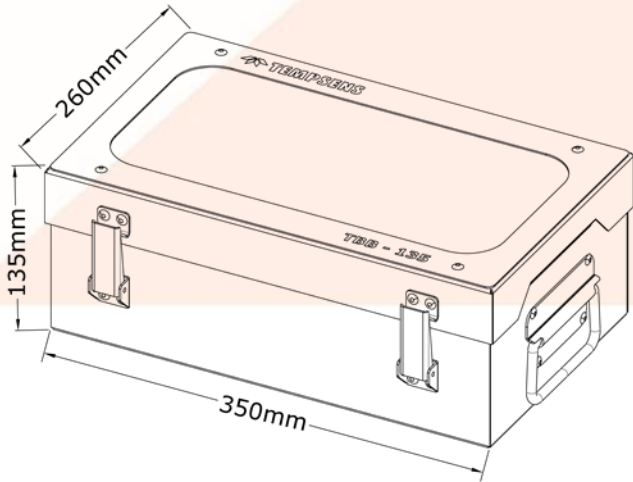
- In circuit board assembly,
- Soldering and Reflow Processes: Monitoring soldering on PCBs for high-quality solder joints.
- Semiconductor Manufacturing: Solder reflow, die attach, and adhesive curing.
- Food Processing: Baking, roasting, and cooking processes.
- Polymer Processing: Injection molding, extrusion, and blow molding.
- Surface Mount Technology (SMT): Monitoring temperature profiles during solder paste reflow.
- For low temperature and small opening ovens and other processes.
- Glass tempering processes.



Thermal Profiling System



Thermal Barrier Box: TBB-135



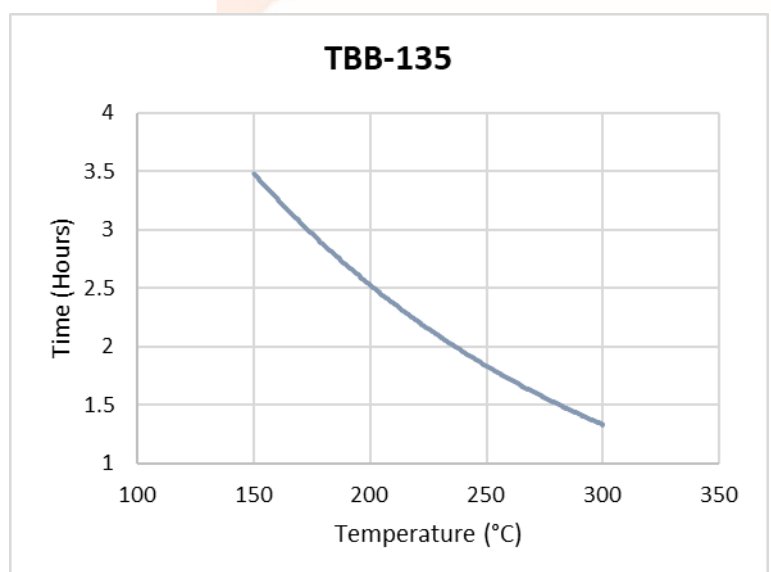
Approx. Weight: 15 Kg

Temperature °C / °F	150 °C / 302 °F	200 °C / 392 °F	250 °C / 482 °F	300 °C / 572 °F
Duration	3.5 Hrs.	2.5 Hrs.	110 Mins.	80 Mins.

*The barrier includes phase change material based heat sinks. (For better performance please keep the heat sink inside refrigerators i.e. below 15°C.)

Application:

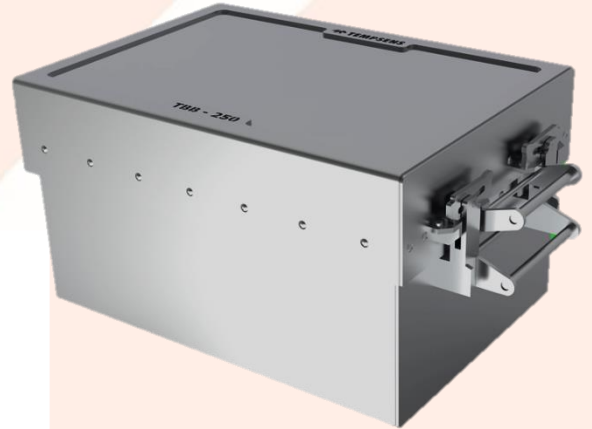
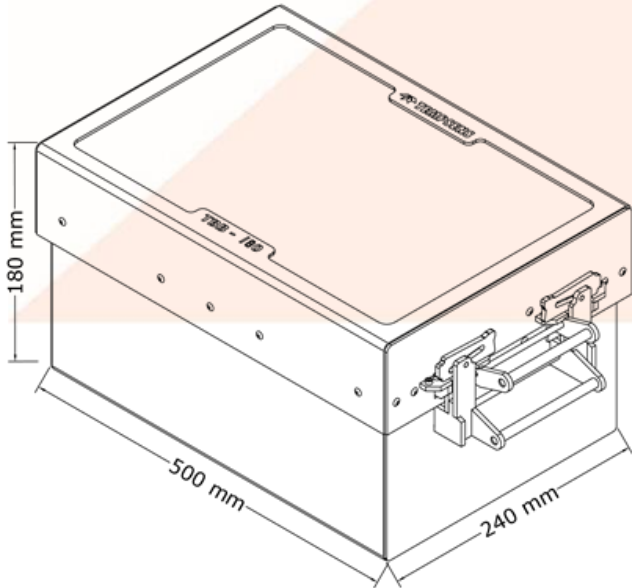
- Paint Curing and Drying: Applications in automotive and industrial coating.
- Environmental Chambers: Testing and conditioning products under controlled temperatures.
- Glass Manufacturing: Achieving desired properties and defect avoidance.
- Heat Treatment and Aging: Processes for metals and polymers.
- Composite Material: Processing and curing composite structures/parts.
- Powder coat/General paint OEM application.
- Large custom coaters.



Thermal Profiling System



Thermal Barrier Box: TBB-180



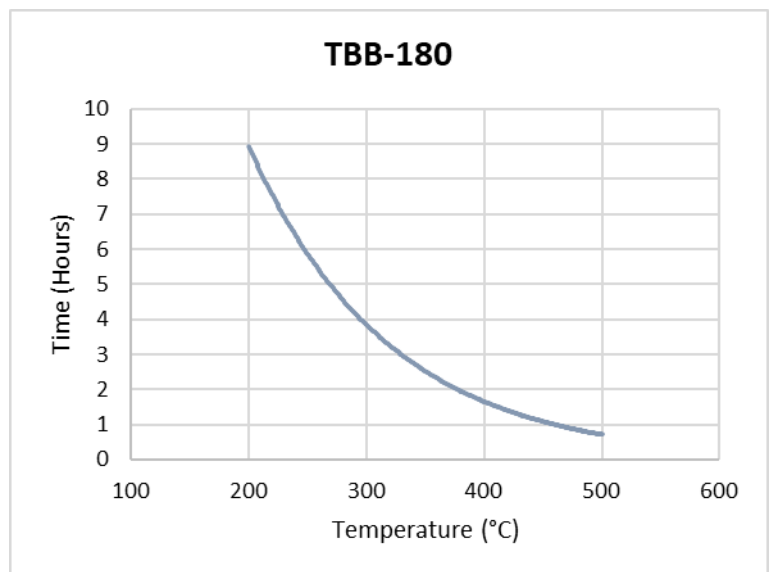
Approx. Weight: 25 Kg

Temperature °C / °F	200 °C / 392 °F	300 °C / 572 °F	400 °C / 752 °F	500 °C / 932 °F
Duration	9 Hrs.	4 Hrs.	1.5 Hrs.	45 Mins.

*The barrier includes phase change material based heat sinks. (For better performance please keep the heat sink inside refrigerators i.e. below 15°C.)

Application:

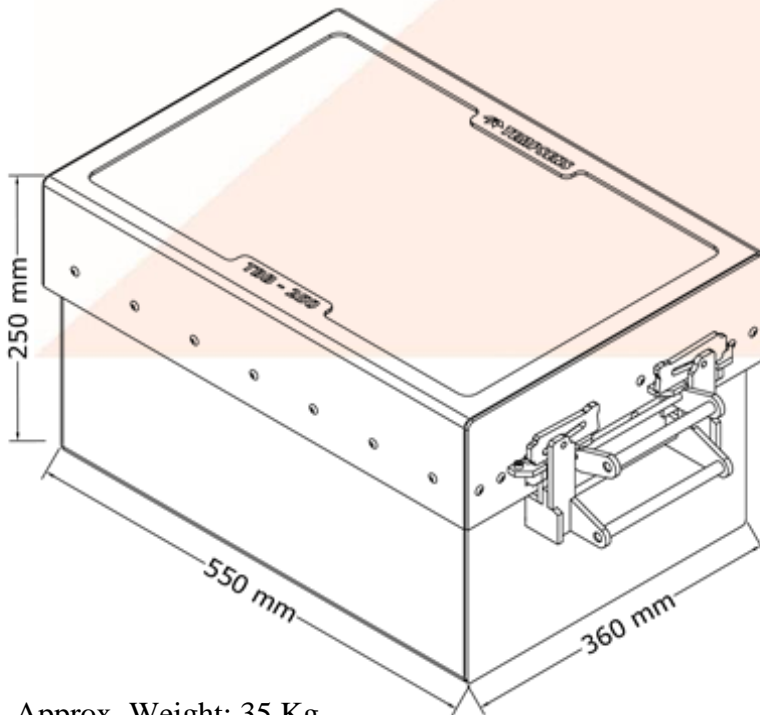
- Aluminum aging,
- Low temperature cure,
- Automotive paint cure line.
- High temperature coating cure application like PTFE and dacromet.
- Thermal profiling systems below 500°C for 50 minutes have applications in:
 - Heat Treatment and Annealing
 - Polymer and Plastic Processing
 - Oven and Furnace Applications
 - Ceramic Manufacturing



Thermal Profiling System



Thermal Barrier Box: TBB-250



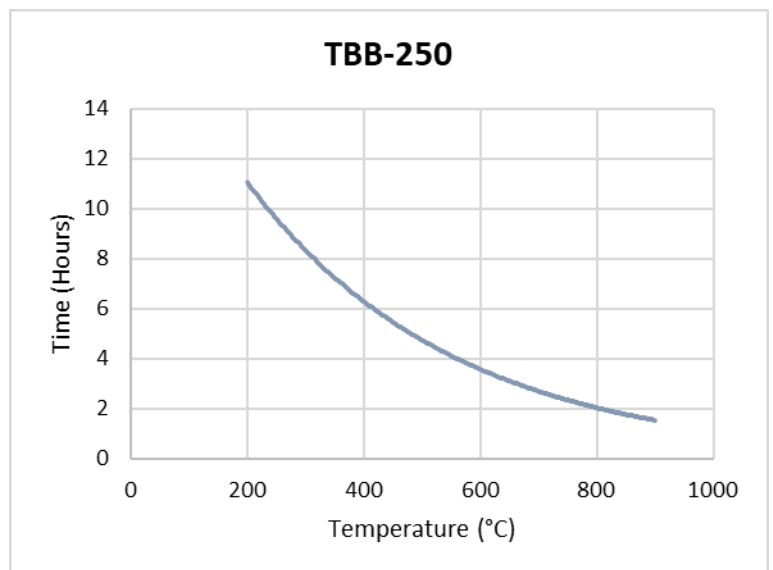
Approx. Weight: 35 Kg

Temperature °C / °F	200°C / 392°F	300°C / 572°F	500°C / 932°F	600°C / 1112°F	800°C / 1472°F	900°C / 1652°F
Duration	12 Hrs.	8 Hrs.	5 Hrs.	3 Hrs.	2 Hrs.	100 Mins.

*The barrier includes phase change material based heat sinks. (For better performance please keep the heat sink inside refrigerators i.e. below 15°C.)

Application:

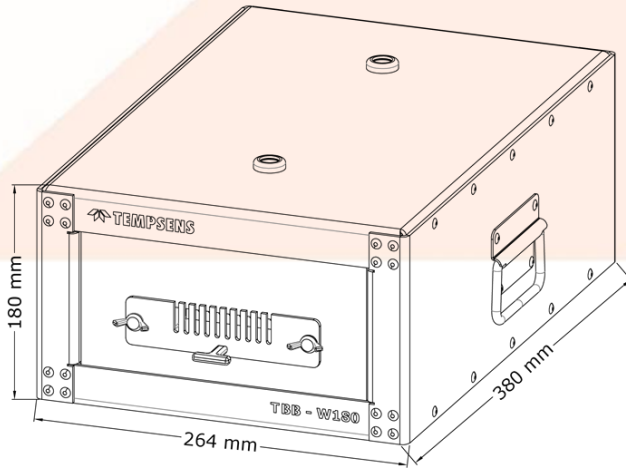
- Vacuum annealing furnaces with air quenching.
- High temperature annealing furnaces without quenching.
- Heat treatment and annealing
- Industrial furnaces
- Glass manufacturing
- Advanced materials processing
- Aerospace and automotive
- Alloy casting
- Energy generation
- Environmental testing



Thermal Profiling System



Thermal Barrier Box: TBB-W-180



Approx. Weight: 20 Kg

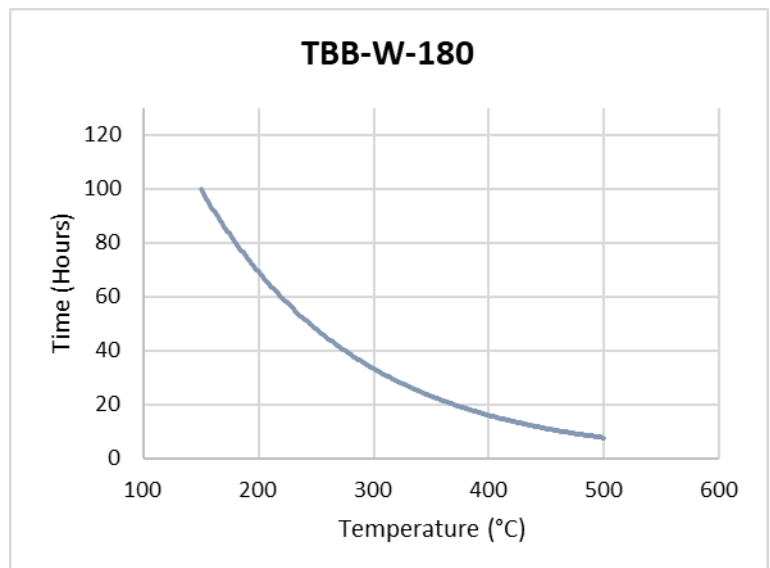
Temperature °C / °F	150 °C / 302°F	200 °C / 392°F	250°C / 482°F	300°C / 572°F	400°C / 752°F	500°C / 932°F
Duration	130 Hrs.	65 Hrs.	40 Hrs.	30 Hrs.	15 Hrs.	9 Hrs.

* Here water stored in a tank acts as a phase change material.

*The limitation of this TBB-W-180 model is used for low temperature 350°C under a kiln car. The temperature of kilns can go up to 1200°C or even more.

Application:

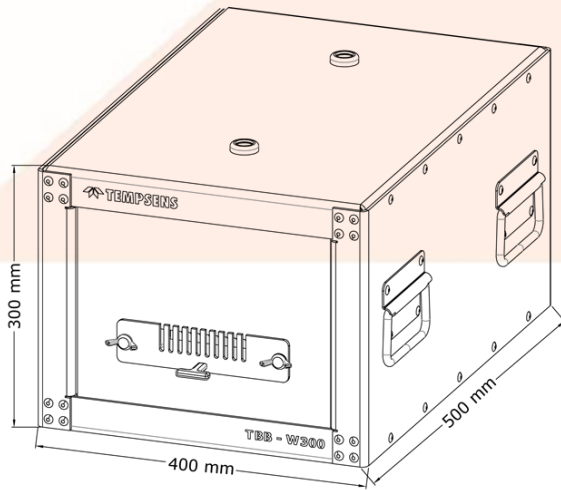
- In the mass production of Building Products (brick and tile),
- Sanitary ware (toilets and sinks),
- Tableware and high temperature kilns (plates, teapots, vases etc).
- Heat Treatment and Annealing
- Industrial Kilns and Furnaces
- Ceramics and Refractories
- Slow Cooking/Baking
- Environmental Testing and Aging
- Research and Development.



Thermal Profiling System



Thermal Barrier Box: TBB-W-300



Approx. Weight: 90 Kg

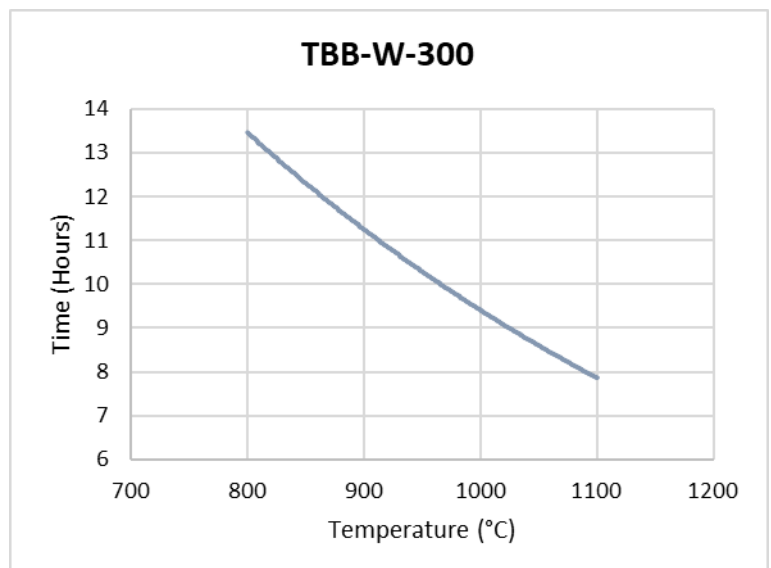
Temperature °C / °F	800 °C / 1472 °F	900 °C / 1652 °F	1000 °C / 1832 °F	1100 °C / 2012 °F
Duration	13 Hrs.	11.5 Hrs.	10 Hrs.	7.5 Hrs.

* Here water stored in a tank acts as a phase change material.

*Customized size barrier boxes are also available depends upon temperature and time duration. For further information contact us.

Application:

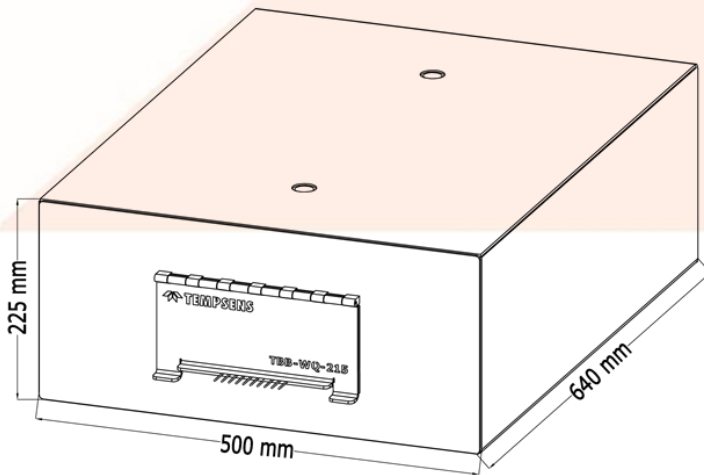
- Annealing furnaces with air quenching.
- High temperature annealing furnaces without quenching.
- Slab and billet reheat process
- Heat Treatment and Annealing
- Industrial Furnaces
- Aging and Aging Simulation: Assessing material performance and durability.



Thermal Profiling System



Thermal Barrier Box: TBB-WQ-215



Temperature °C / °F	500 °C / 932°F	600 °C / 1112°F	700°C / 1292°F	800°C / 1472°F
Duration	16 Hrs.	13 Hrs.	11 Hrs.	9 Hrs.

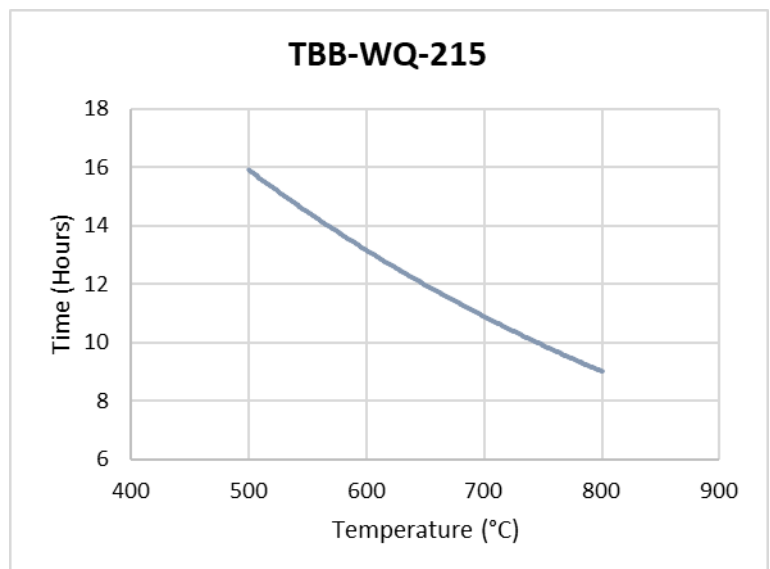
* Here water stored in a tank acts as a phase change material.

*After water quenching 8 hour duration is possible in age hardening furnaces at 200°C.

*High temperature can also be achieved on expense of less duration. For further information contact us.

Application:

- High temperature annealing furnaces with quenching.
- Heat Treatment
- Metal Alloy Processing
- Martensitic Transformation
- Surface Hardening
- Rapid Cooling and Phase Transformation
- Heat Sink Manufacturing.
- Aluminum heat treatment Process with age hardening processes.



Thermal Profiling System



Thermocouples Probes



Magnetic Clamp Thermocouple Probe (TCP.01)



Sheet Clamp Thermocouple Probe (TCP.02)



Magnetic Surface Thermocouple Probe (TCP.03)



Magnetic Air Thermocouple Probe (TCP.04)



Mini mag Thermocouple Probe (TCP.05)



Exposed Junction Thermocouple (TCP.06)



Mineral Insulated Thermocouple (TCP.07)



Thin Thermocouple (TCP.08)

Standard Cable Length: 3 meter.

Cable and their temperature range:

1. Teflon Insulated Thermocouple Cable (250°C / 482°F)
2. Fiberglass insulated Thermocouple Cables (400°C / 752°F)
3. MI (Mineral Insulated) Thermocouple Cables (1200°C / 2192°F).



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