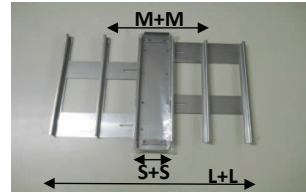
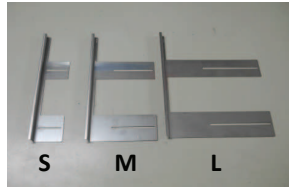


【Conveyor Attachment System】

At the time of purchase, two Adjustable Arms are included in one Conveyor Attachment System, selectable from size S, M and L according to the PC board width. (When the size is not specified, S+S are provided.)

Width Variation

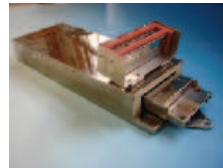
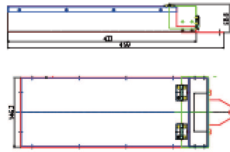
S + S:	80~140 mm
S + M:	124~205 mm
M + M:	136~270 mm
M + L:	198~340 mm
S + L:	193~275 mm
L + L:	213~410 mm



【HRJ-1 Heat Resistant Jacket】 (Option)

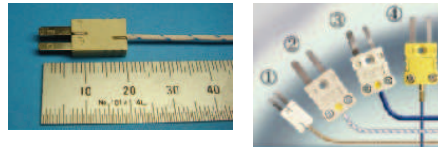
- Optional Heat-Resistant Jackets designed for high-temperature and long-term use.
- Available for a painting tunnel oven, drying oven and etc.
- Combined with RCX-S, the suitable Heat-Resistant Jacket is selectable according to the following table.

	HRJ-1 + RCX-S
100°C	60 minutes
150°C	35 minutes
250°C	20 minutes
300°C	18 minutes



【K-type Thermocouple with Connector】 (Option)

- Malcom's K-type Thermocouple and Connector match the soldering temperature range, using a lot of our know-how.
- Micro connector and Miniature connector are moist suitable for use in a reflow oven, using the material with high heat resistance at 280 °C.
- A teflon-coated thermocouple is optimal for flow soldering.



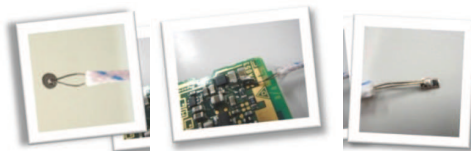
【Easy Attachment Thermocouple】 (Option)

Easy attachment thermocouple will offer simplified attachment work and enhance accuracy of temperature measurement.

Attachment by a smaller amount of solder or adhesive is possible by a small copper plate welded to the tip of thermocouple.

Everyone can attach thermocouple to PC board with ease.

* The curing time depends on the adhesive's spec.



【About the RCX series AAA Battery】

Model	Battery type	Operation time (examples)
RCX-1, RCX-S, FCX-50	Manganese battery, Alkaline battery, Ni-MH battery	Minimum 10 hours (900mAh)
RCX-O	Ni-MH battery *	Approx. 40 minutes (900mAh)
RCX-C	Ni-MH battery *	Approx. 30 minutes (900mAh)
RCX-W, RCX-SV, RCX-R	Manganese battery, Alkaline battery, Ni-MH battery	Approx. 5 hours (900mAh)
RCX-T	Manganese battery, Alkaline battery, Ni-MH battery	

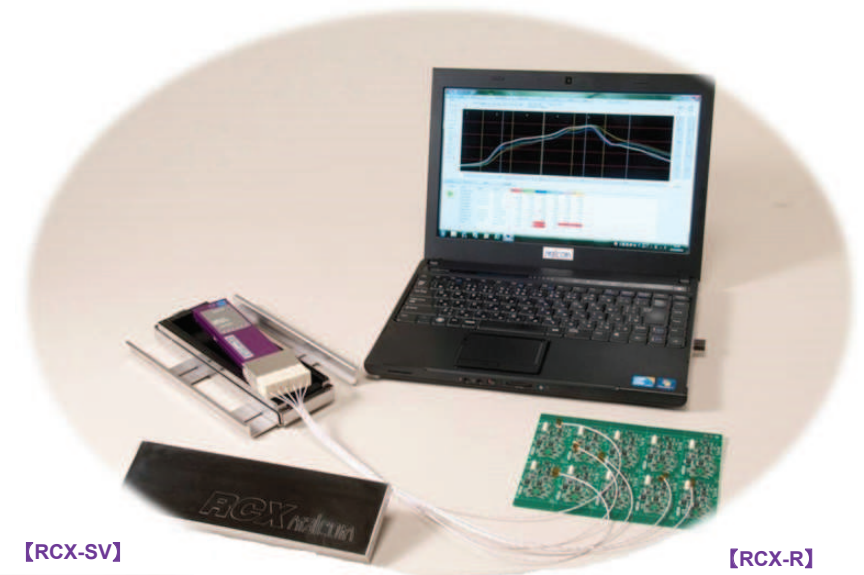
Soldering Process Devices
LED Manufacturing Devices
Bio-Technology Products

Representative

Malcom Company Limited
15-10, Honmachi 4-Chome, Shibuya-ku,
Tokyo 151-0071 Japan
Tel: 81-3-3320-5611 Fax: 81-3-3320-5866
E-mail: whq@malcom.co.jp

malcom

RCX-1 series REFLOW CHECKER



【RCX-SV】

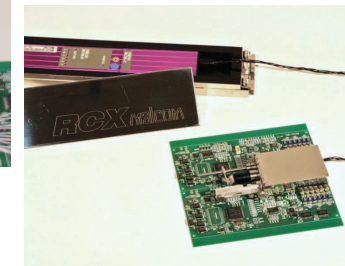
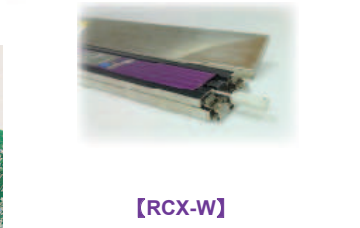
【RCX-R】

【RCX-O】

【RCX-T】

【RCX-W】

【RCX-C】



Malcom offers New concept Reflow Oven Measurement System.
Add your choice of Module to RCX-1 Memory Unit.

RCX-1 Reflow Checker

- Thermocouple check function is equipped.
- Memorize up to 20 profiles, making it possible for continuous measurement of some production lines. (Please fully cool down RCM-S memory unit before next measurement.)
- AAA batteries are available.
- Built-in Battery Monitoring function.



Specifications

Measuring temp. range	0~500 °C *1
Max. measuring time	Approx. 10 hours *1 *2
Sampling time (sec.)	0.05 · 0.1 · 0.2 · 0.5 · 1.0 · 2.0 · 4.0 · 8.0 (Arbitrary set up possible)
Temp. accuracy	± 1 °C *3
Measuring points	1~6 point
Input	Thermocouple JIS-K 1kΩ max. (φ 0.1 mm under 10m)
Cooling fan	Model: RCF-3 (100~240V) 240 (D) x 350 (W) x 160 (H) mm
Power supply	AAA batteries, Manganese batteries, Alkaline battery, Ni-MH battery
Data Transmission Method	USB
Outer dimensions	Main unit: 170 (D) x 50 (W) x 18 (H) mm Heat resistant case for RCX-1: 245 (D) x 65 (W) x 25 (H) mm
Weight	Approx. 550g (Conveyor attachment system is not included.)

* 1 It differs from the heat resistant time of memory unit.

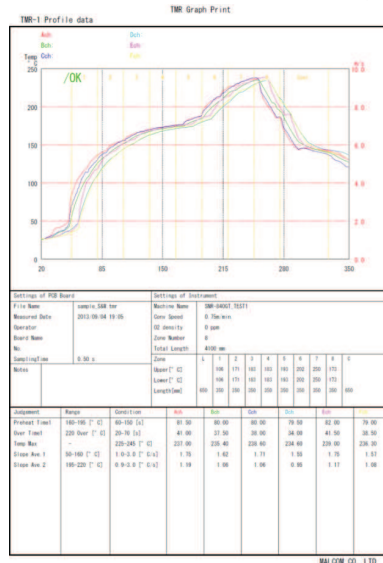
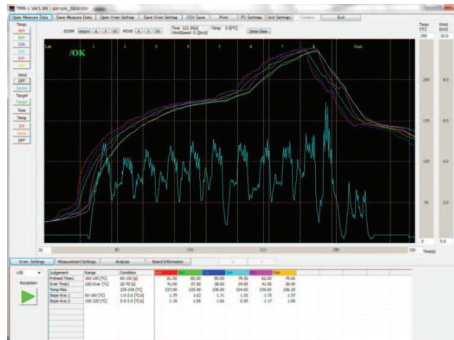
* 2 It is the experimental value by AAA battery. The max. measuring time depends on battery capacity.

* 3 The errors of thermocouple and reference junction temperature are not included in the temperature accuracy.

TMR-1 System Program

Evaluate and control reflow process from different angles, not only temperature control of a reflow oven. The temperature profile prediction function helps smoothly examine a profile.

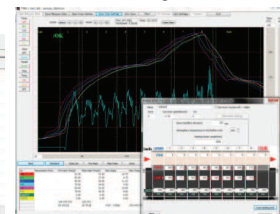
- Simultaneously display Profile & Data of Temperature, Wind Speed, O₂ Concentration on the same screen.
- Profile Support function offers easy profile creation.
- TPD files, the file format of TAM series, are viewable.



Prediction setting

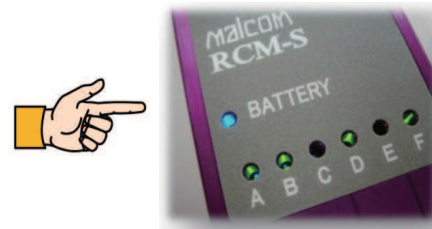
Analysis Data

USB	Judgement	Range	Condition	Ach	Bch	Cch	Dch	Ech	Fch
Reception	Preheat Time 1	160-195 [°C]	60-150 [s]	81.50	80.00	80.00	79.50	82.00	79.00
	Over Time 1	200 Over [°C]	-	41.00	37.50	38.00	34.00	41.50	38.50
	Temp Max	225-245 [°C]	-	237.00	235.40	238.60	234.60	239.00	236.30
	Slope Ave. 1	90-160 [°C/s]	1.0-3.0 [°C/s]	1.75	1.62	1.71	1.55	1.75	1.57
	Slope Ave. 2	195-220 [°C]	0.9-3.0 [°C/s]	1.19	1.06	1.06	0.95	1.17	1.08



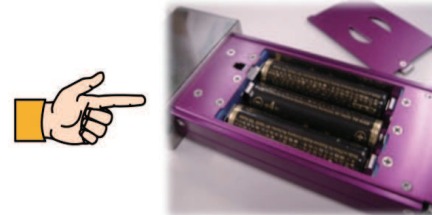
Special Feature for RCM-S Memory Unit

It often happens that we fail to measure temperature without knowing the breaking of thermocouple.



LED lights will notify a breaking of thermocouple before measurement.

Do I need to prepare special battery for this Reflow Checker?



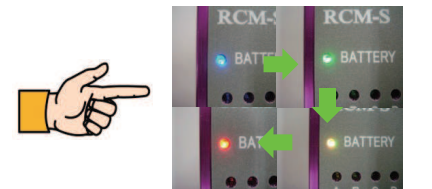
No, AAA batteries are available.

I powered off the Reflow Checker by accident before transferring test result to my PC.



Our Reflow Checker is equipped with fail-proof button. Additionally, it can store up to 20 data even after its turn-off i.e. you will be freed from the burden of data transfer to your PC after each measurement.

Don't know the level of battery charge remaining. When should I charge it?



The color of the battery lamp indicates the level of battery charge remaining. It is recommended that you change when the lamp indicates "yellow".

RCX-1 Packing List



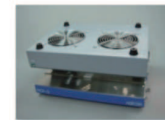
RCM-S Main Unit



Heat Resistant Case



Conveyor Attachment System S+S



Cooling Fan Model: RCF-3



TMR-1 Software



USB Cable



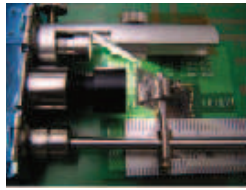
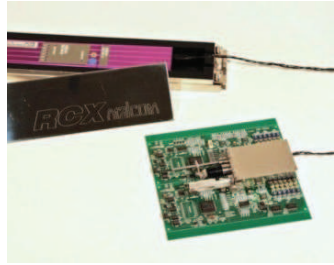
K type Thermocouple with Connector 0.2Φ x 50cm 9pcs.



Short-Pin 5pcs.

RCX-C Reflow Checker Memory Unit with Observation Monitor

- A Removal Camera is directly mounted on a PC board, which offers viewing from various points.
- Monitoring from upper, side & diagonal are also possible with a Imaging Mirror.



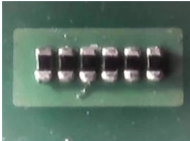
Camera Set Up



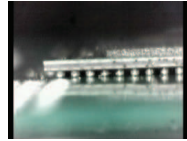
1608 image example



POP image example



0402 image example from upper face



0.5mm pitch CSP image example

Specifications

Max. measuring time	Video recording for approx. 10 minutes *1
Camera number of pixels	300 thousand pixels
Camera field size	Approx. 4 (W) x 3 (H) mm (WD10 ± 2mm) ~ Approx. 55 (W) x 41 (H) mm (WD300 ± 2mm)
Lighting	LED
Power supply	Supplied from RCM-S main unit , Ni-MH battery (AAA battery x 3pcs.)
Outer dimensions	Heat resistant case for main unit: 360 (D) x 65 (W) x 25 (H) mm Heat resistant case for camera unit: 84 (D) x 44 (W) x 17.5 (H) mm
Data transmission method	Video: USB
Weight	RCM-S main unit + Camera unit: Approx 800g (Conveyor attachment system is not included.) Camera unit: Approx. 150g (Conveyor attachment system is not included.)

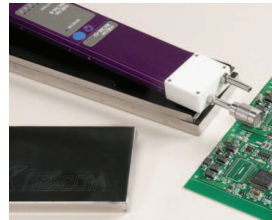
* The measuring temperature range and the maximum measuring time are time in which heat resistance is not considered, and they cannot be measured in the reflow oven.

* Manganese batteries and alkaline batteries are not available.

RCX-O Reflow Checker Memory Unit with O₂ Concentration Monitor

A module to measure O₂ Concentration.

- Measure O₂ Concentration of the important point on a PC board.
- Take measurement in the same reflow conditions as that of during production.
- The measurement range is selectable.
(50 ppm~5,000 ppm or 1,000 ppm~10,000 ppm)



Specifications

Max. measuring time	Ni-MH battery Approx. 40 minutes *1
Sampling time (sec.)	0.05, 0.1, 0.2, 0.5, 1.0, 2.0, 4.0, 8.0 Arbitrary setup possible Synchronized with RCM-S main unit.
Oxygen measuring principle	Zirconia limiting current method
Oxygen measuring range	50ppm~5000ppm or 1000ppm~10000ppm
Oxygen measurement accuracy	50 ppm ~ 1000 ppm±5%FS / 1000 ppm ~ 5000 ppm±10%FS 1000 ppm ~ 5000 ppm±5%FS
Power supply	Supplied from RCM-S main unit, Ni-MH battery (AAA battery x 3pcs.)
Outer dimensions	Main unit: 336 (D) x 50 (W) x 18 (H) mm (with RCM-S main unit) Heat resistant case: 370 (D) x 65 (W) x 25 (H) mm
Weight	Approx. 950g (Conveyor attachment system is not included.)

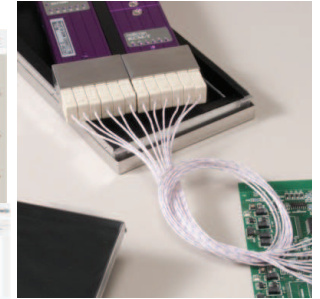
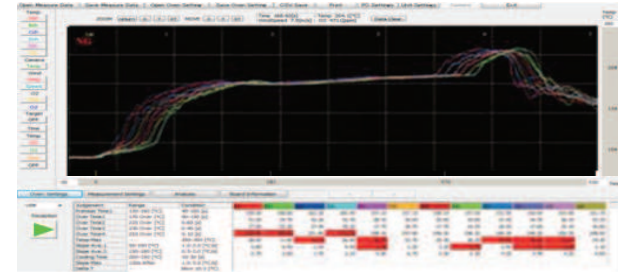
* The measuring temperature range and the maximum measuring time are time in which heat resistance is not considered, and they cannot be measured in the reflow oven.

* Manganese batteries and alkaline batteries are not available.

RCX-T Reflow Checker Memory Unit with additional 6 channels

- Add RCX-T Reflow Checker Memory Unit to RCX-S Reflow Checker Memory Unit providing 12 points measurement.
- Can be used as 12 channels to study profiles, trial production and evaluation, for normal production, employed as 6 channels.

TMR-1 RCX-T Measurement Data



Specifications

Measuring temp. range	0~500°C * 1
Max. measuring time	Approx. 5 hours * 1 * 2
Sampling time (sec)	0.05, 0.1, 0.2, 0.5, 1.0, 2.0, 4.0, 8.0 Arbitrary setup possible, Synchronized with RCM-S main unit.
Temp. accuracy	±1°C *3
Measuring points	1~12 points
Input	Thermocouple JIS-K 1kΩ max. (φ 0.1 mm under 10m)
Power supply	Supplied from RCM-S main unit AAA batteries, Manganese batteries, Alkaline battery, Ni-MH battery
Outer dimensions	Main unit: 180 (D) x 100 (W) x 18 (H) mm (with RCM-S main unit) Heat resistant case: 250 (D) x 114 (W) x 25 (H) mm
Weight	Approx. 1000g (Conveyor attachment system is not included.)

* 1 It differs from the heat resistant time of memory unit.

* 2 It is the experimental value by AAA battery. The max. measuring time depends on battery capacity.

* 3 The errors of thermocouple and reference junction temperature are not included in the temperature accuracy.

RCX-R Reflow Checker Memory Unit With Wireless LAN Connection

Wireless LAN makes it possible to show you the temperature profile in real time.

- You can change the device settings while checking the temperature profile.
- Check the temperature profile in real time on a PC.
- Increase efficiency of studying temperature profiles.
- The built-in memory function avoids losing data.
- Complies with wireless LAN standards.



Specifications

Wireless LAN	Protocol: 802.11b/g/n / Security: WPA/WPA2 / Encryption: WEP/TKIP/AES
Power supply	Supplied from RCM-S main unit
Outer dimensions	Main unit: 195 (D) x 40 (W) x 13 (H) mm Heat resistant case: 370 (D) x 65 (W) x 25 (H) mm
Weight	Approx. 100g (RCM-S main unit is not included.)

RCX-SV Reflow Checker Memory Unit with Substrate Vibration Monitor

Two Vibration modules on a PC board, measuring in a reflow oven.

- Check the status of a PC board when moving from machine to machine.
- Analyze defective soldering due to Vibration.
- Measure the vibration from the entrance to exit of a reflow oven.
- How variances in wind speed affects Vibration.



Specifications

Max. measuring time	Approx. 3 hours (Ni-MH battery)
Sampling time (sec.)	0.05, 0.1, 0.2, 0.5, 1.0, 2.0, 4.0, 8.0 Arbitrarily set up possible (synchronized to RCM-S)
Measuring points	2 points
Measuring range / Resolution / Accuracy	±2.0g (1.0 g = 9.806 65 m/s ²) / 0.001g (1.0 g = 9.806 65 m/s ²)
Measurement accuracy	±0.005g (1.0 g = 9.806 65 m/s ²)
Power supply	Supplied from RCM-S main unit, AAA batteries x 3pcs.
Outer dimensions	Main unit: 221 (D) x 50 (W) x 18 (H) mm (with RCM-S main unit, Sensors are not included) Sensor: 45 (D) x 35 (W) x 19 (H) mm Heat resistant case: 360 (D) x 65 (W) x 25 (H) mm
Weight	Approx. 800g including RCM-S main unit & batteries, Conveyor attachment system is not included.

The specifications are subject to change without notice.

* 1 It differs from the heat resistant time of memory unit.

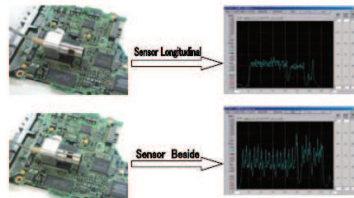
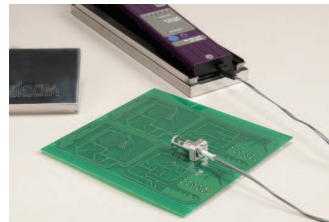
* 2 It is the experimental value by AAA battery. The max. measuring time depends on battery capacity.

* 3 It does not include thermocouple error and reference junction temperature error.

RCX-W Reflow Checker Memory Unit with Air Velocity Monitor

A module for Wind Speed measurement.

- A wind speed sensor mounted on a PC board measures wind speed of the important point.
- Take measurement in the same reflow conditions as that of during production.
- Measure wind speed from upper or side directions.



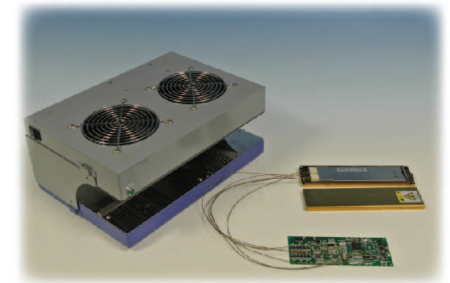
Back	Standard	Data List	Pre-heat	Main-heat	Zone	Channel	Wind speed	CO Density	Revision			
Under	Time(s)	Min	Lab	Zone1	Zone2	Zone3	Zone4	Zone5	Zone6	Zone7	Zone8	Cooling
Under	Min	0.2	0.2	2.1	2.0	2.0	0.9	2.1	2.0	1.0	0.2	
Under	Max	0.1	0.1	2.1	2.4	2.4	1.1	2.4	2.4	1.1	0.2	
Under	Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Under	Upper level	Lower	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Under	2.0	Upper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Under	4.0	Ave.Lower	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Under	Start/Time	Ave.Upper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Under	0	Judge	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Specifications

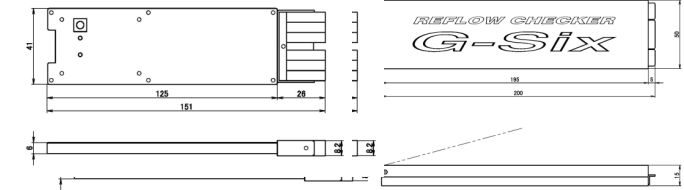
Sampling Time (sec.)	0.05, 0.1, 0.2, 0.5, 1.0, 2.0, 4.0, 8.0 * Arbitrarily set up possible
Wind speed measuring range	0.1~5m/s
Wind speed measurement accuracy	±(5% + 0.1m/s) of the indicated value
Power supply	Supplied from RCM-S main unit, AAA batteries, Manganese batteries, Alkaline battery, Ni-MH battery
Outer dimensions	Main unit (w/o Heat resistant case) 220 (D) x 50 (W) x 18 (H) mm (with RCM-S main unit) Heat resistant case: 370 (D) x 65 (W) x 25 (H) mm
Data transmission method	USB
Weight	Approx. 800g (Conveyor Attachment System is not included.)

RCP-200 Reflow Checker

- High Heat Resistance, Excellent Performance and Directly Transfer Data to a PC.
- The GOLD color surface reduces radiant heat, increasing heat resistance.
- Exclusive Cooling Unit effectively cools down a memory unit and Convenient Storage Case available.
- Proprietary Heat Resistant Micro Connector makes it possible to measure at 6 points.



Memory Unit Model : G-Six



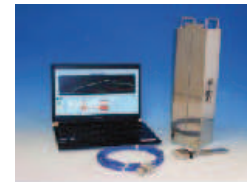
Measuring temp. range	0°C~300°C	Input	Thermocouple JIS-K 110Ω max.
Max. measuring time	Approx. 90 minutes (sampling time: 0.5 sec.) Approx. 15 minutes (sampling time: 0.05 sec.)	Power supply	Lithium ion battery
Sampling time (sec.)	0.05, 0.1, 0.2, 0.5, 1.0, 2.0, 4.0, 8.0 (Arbitrary setup possible)	Data transmission method	USB
Temp. accuracy	±2°C	Outer dimensions	200 (D) x 50 (W) x 15 (H) mm
Measuring points	1~6 point	Weight	Approx. 400g

* The measuring accuracy does not include the error of thermocouple.

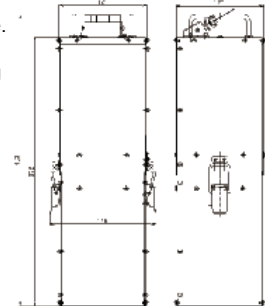
* The maximum measuring time does not consider the thermal resistance, and this is not the time allowed for measurement inside the reflow furnace.

TL-12X Thermo Logger

- Optional Heat-Resistant Jackets designed for high-temperature and long-term use.
- Available for a painting tunnel oven, drying oven and etc.
- Combined with RCM-S, the suitable Heat-Resistant Jacket is selectable according to the following table.



	Heat Resistant Jacket for TL-12X + RCM-S
100°C	350 minutes
150°C	200 minutes
200°C	160 minutes
250°C	120 minutes
300°C	100 minutes



Specifications

Memory unit	RCM-S
Measuring temp. range	0~500 °C *1
Max. measuring time	Approx. 10 hours *1 *2
Sampling time (sec.)	0.05 · 0.1 · 0.2 · 0.5 · 1.0 · 2.0 · 4.0 · 8.0 (Arbitrary set up possible)
Temp. accuracy	± 1 °C *3
Measuring points	1~6 point
Input	Thermocouple JIS-K 1kΩ max. (φ 0.1 mm under 10m)
Power supply	AAA batteries, Manganese batteries, Alkaline battery, Ni-MH battery
Data Transmission Method	USB
Outer dimensions	Main unit: 170 (D) x 50 (W) x 18 (H) mm