



功得電子工業股份有限公司
CONQUER ELECTRONICS CO.,LTD.

規格書

Spec. No. SFA104

Specification For Approval

型號：**UBF/UBF-A** 系列

快速型瓷管保險絲

Model：**UBF/UBF-A**

Quick Acting Ceramic Tube Fuse Series

www.conquer.com.tw

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History of Change

REV.	Description	Date	Drawn	Designed	Checked	Approved
1	(1)Issue	2016.06.15	黃世宏	邱俊偉	蔡進義	蔡其湖
2	(1)新增20A/25A (2)修改內文項次9：UBF整箱包裝數量 20,000 PCS變更成10,000 PCS	2016.12.29	黃世宏	邱俊偉	蔡進義	蔡其湖
3	(1)新增內文項次11：冷阻值範圍	2017.04.28	黃世宏	邱俊偉	蔡進義	蕭煥益

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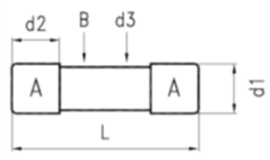
～ 筒管狀保險絲 ～

Fuses for Instrument, Power and Telephone (Non-indicating)

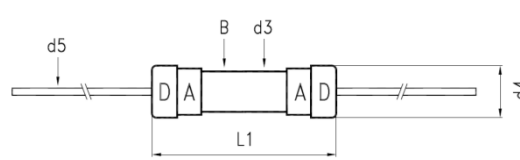
1 **適用範圍**: 本標準適用於保護儀器、電源供應器和電話機用之筒管式熔斷保險絲。
Available Range: For protecting instruments, power supplies and telephone sets.

2 **形狀及尺寸如下圖** 單位: mm

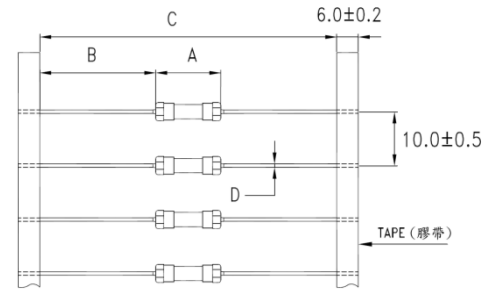
Shape & Size as following illustrations.



UBF Series



UBF-A Series



- 2.1 構造形狀 Structure & Shape : 如上圖 As shown in figure above A. 21.0 ± 0.75 **UBF-A TR Series**
 2.2 額定電壓 Rated Voltage: 420V AC / DC B. 16.0 ± 1.0
 2.3 額定電流 Rated Current: 8A~25A C. $52.0 (+2.0 -1.0)$
 3 **材料 Material:** D. (註1)

3.1 筒管本體: 不透明瓷管不可破裂或變形。

Tube (Body): Non-Transparent ceramic tube fuse. No breaking or deformation is allowed.

3.2 兩端銅蓋: 需以導電率良好之黃銅為材料。

Two brass end caps: Made of brass of good conductivity.

3.3 銅蓋處理: 銅蓋部份鍍鎳，標示最後若加 "S" 者，表示須鍍銀。

Coating of brass caps: Plating the surface with nickel. If the indication is added with "S", it needs to be plated with silver.

NO.	Part Name 部品名稱	Volume 數量
A	Brass Cap - Nickel Plating 銅帽 - 鍍鎳	2
B	Ceramic Tube - Non-Transparent Ceramic Tube 瓷管 - 不透明瓷管	1
C	Fuse Element 可熔體	1
D	Cap-on Lead-Cap - Tinned Copper Wire and Cap 銅帽附腳 - 銅蓋加鍍錫銅線	2
d1	Dia. of Cap - $5.2^{+0.1}_{-0.2}$ mm 銅頭直徑	
d2	Height of Cap - 5.25 ± 0.1 mm 銅頭高度	
d3	Dia. of Ceramic - 4.50 ± 0.2 mm 瓷管直徑	
d4	Dia. of Cap - $5.9^{+0.1}_{-0.3}$ mm 銅帽直徑	
d5	Dia. of Lead Wire - (註1) mm ± 0.05 mm 附腳直徑 Length of Lead Wire - 38 ± 2 mm 長度	
L	Body of Fuse - 20.00 ± 0.5 mm 本體尺寸	
L1	Total Length W/Cap-on on Both Ends 21.00 ± 0.75 mm	



※註1 (Note1)

安培數	腳徑
Ampere Rating	Lead Wire
8A~16A	ϕ 1.0 mm
16A(不含)以上	ϕ 1.2 mm

4 電氣特性 Electrical Characteristics:

過載熔斷: 請參照下表。Melting due to overloading: Details as follows Table.

※最大熔斷時限 Operating Characteristics

安培數 Rating	100% Rating		210% Rating		275% Rating		400% Rating		1000% Rating	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
8A~25A	60 min			30 min	40 ms	20 sec	10 ms	1 sec		30 ms

5 機械特性 Mechanical Properties:

5.1 拉力強度: 當施加軸拉力720g/cm(或10牛頓)於兩端附腳(或銅帽), 無鬆動或損壞現象發生。

Terminal Strength: Leads and/or caps are soldered (adhered) to withstand axial pulling force of 720g/cm(or 10N) without loosening or any harmfulness to firmly attachment.

5.2 彎折強度 Bending Strength:

(1) 銅帽附腳腳徑1.0mm(含)以下, 經過兩次反向之彎折後(彎折90度再折回原位謂之一次彎折)不發生損壞。

Diameter of lead wire \leq 1.0 mm: After two bends of opposite directions (bending through an angle of 90° and back is defined as one bend) of lead, no damage is to be visualized.

(2) 銅帽附腳腳徑1.2mm(含)以上, 距離銅帽附腳卯合處10mm以上, 作一次90度之彎折, 不發生損壞。

Diameter of lead wire \geq 1.2 mm: Only one bend of an angle of 90° without back shall be tested for each lead wire and the bending position shall be at least 10mm a way from the cap-on. After the test there shall be no damage to be visualized.

6 突波實驗 Pulse Test:

為適應電感或電容性電路所產之暫態電流, 本品於10倍額定電流的熔斷時間最少為 1ms。

In order to stand transient current caused by inductive or capacitive, the fuses are designed to have minimum clearing time of 1 millisecond at 1000% rated current.

7 遮斷能力 Breaking Capacity(Interrupting rating):

8A~16A	300 amperes at 420V AC/DC	20A~25A	300 amperes at 420V DC
	400 amperes at 450V DC		400 amperes at 450V DC
	200 amperes at 500V AC		200 amperes at 420V AC
	200 amperes at 600V AC		200 amperes at 500V AC

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8 焊錫性實驗 Solderability of terminations:(For UBF-A)

將保險絲安裝於電路板上，過錫爐試驗條件為 $250\pm 3^{\circ}\text{C}$ ，時間 $3.0\pm 0.3\text{S}$ ，浸泡深度 $2.0\pm 0.5\text{mm}$ ，經過測試後，焊接點的金屬部份必須被焊錫完全覆蓋，呈現光滑明亮。

Fix the fuse in the pcb and into soldering pot, immersion conditions: $(250\pm 3)^{\circ}\text{C}$; $(3.0\pm 0.3)\text{S}$, depth of immersion: $2.0\pm 0.5\text{mm}$. After test, the contact areas were covered with a smooth and bright solder coating.

9 包裝 Packing :

UBF 1000 PCS/盒、一箱數量：10,000 PCS

UBF-A 500 PCS/盒、一箱數量：5000 PCS

UBF-A TR 1000 PCS/卷、一箱數量：5000 PCS

內盒印明下列標示:料號、額定(電壓、電流、遮斷能力)及安規名稱。

包裝材料均符合RoHS或者HF的環保要求,且包裝材料不會和零件發生化學反應，造成不良。

UBF 1000 pcs in an inner box,Outer box Q'ty:10,000 pcs.

UBF-A 500 pcs in an inner box,Outer box Q'ty:5000 pcs.

UBF-A TR 1000 pcs in an inner reel,Outer box Q'ty:5000 pcs.

The following items indicated on the box.

Mark: Catalog number; ratings (voltage, current, interrupting capacity) and safety mark.

The packing material conforms to RoHS or the HF environmental protection request.

And the packing material can't have the chemical reaction with the components.

10 其他 Other:

10.1 除非另有指定，上述機械、電器特性，係於常溫，標準狀況下測試之。

Unless otherwise, specified, all tests to be performed at $25\pm 5^{\circ}\text{C}$ and 35-75% RH.

10.2 於標準狀況下儲放一年，本品乃確保上述機械與電氣之特性。

After one year's storage under normal condition, this item is guaranteed to meet the requirements mentioned above.

11 標記/安規認證 Mark/ Safety certification:

Mark Approvals			Nominal Resistance Cold Ohms	Nominal Melting I^2t A ² Sec
8 A	**	**	0.01002~0.01860	62.00
10 A	**	**	0.00723~0.01343	128.0
12.5 A	**	**	0.00599~0.01113	169.0
15 A	**	**	0.00465~0.00863	195.0
16 A	**	**	0.00430~0.00800	260.0
20 A	**	**	0.00292~0.00542	395.0
25 A	**	**	0.00172~0.00320	1250.0

** : 有安規認證及銅帽上有安規印字標記 Have safety certify and safety mark on the cap

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12 產品描述 Product Description:

描述 Description	安培數 Ampere Rating
UBF ___A 420V (PF) UBF-A ___A 420V(PF) UBF-A___A 420V TR(PF)	8A~25A

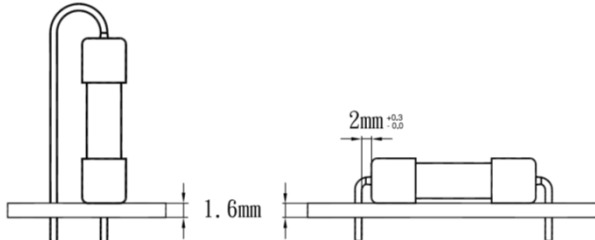
例: UBF-A A 420V (PF)
 1 2 3 4 5

- 1 系列品名 Series Model : UBF/UBF-A
- 2 安培數 Ampere Rating : 8A~25A
- 3 伏特數 Voltage : 420V
- 4 包裝規範 Packaging Code :

包裝規範 Packaging Code	說明 Description
TR	1000 pcs:打帶卷裝 1000 pcs:Tape in Reel

- 5 無鉛標示 Pb Free : (PF)

13 安裝方式及條件 Installation way and parameters



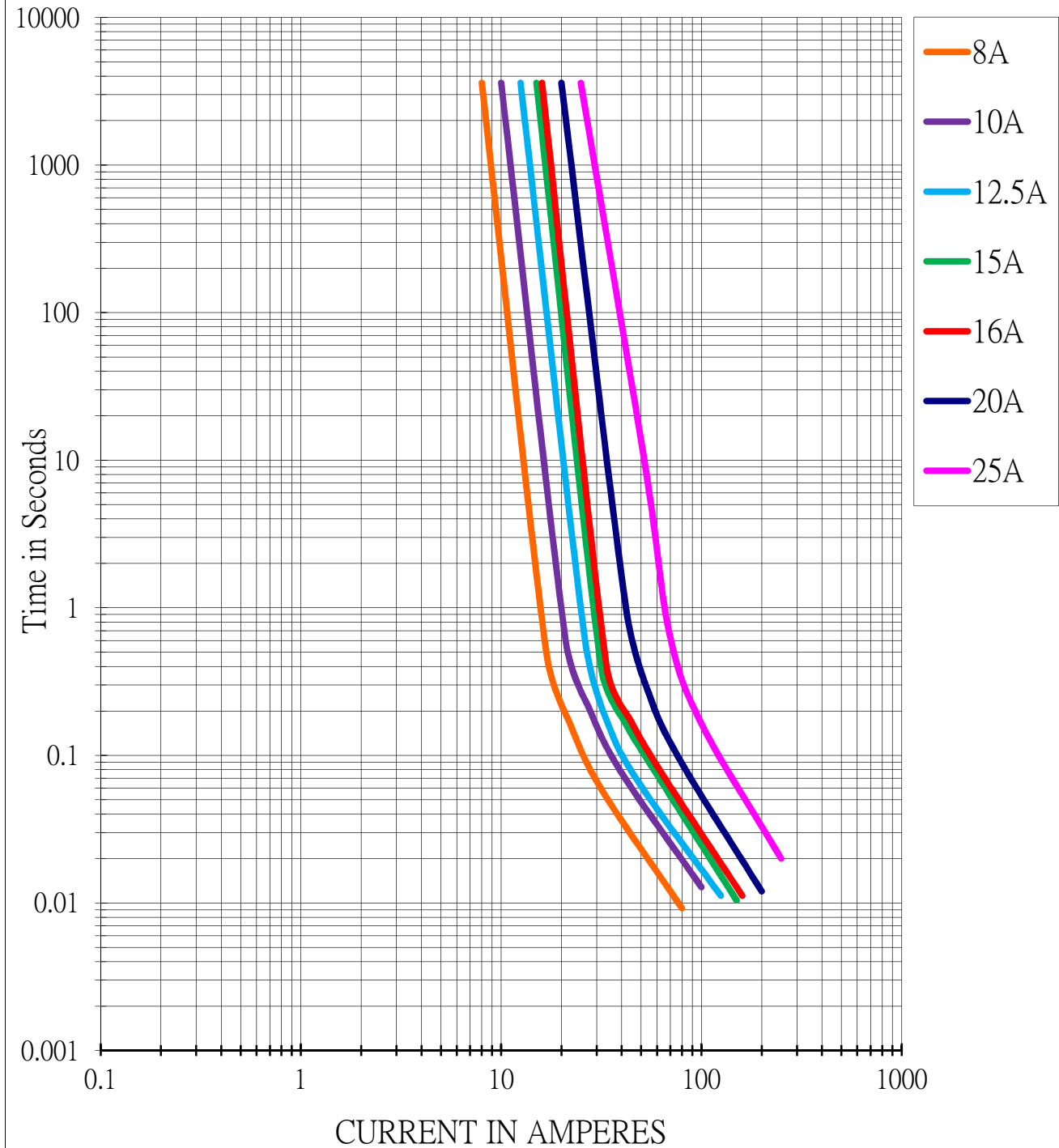
14 建議生產參數(無鉛焊錫使用) :

Recommended Process Parameters(for the action to Lead-free solder alloy) :

14.1 波峰參數 Wave Parameter	預熱溫度 Preheat temperature 最低溫度：100度 Temperature Minimum : 100℃ 最高溫度：150度 Temperature Maximum : 150℃	錫槽溫度 Solder Pot Temperature 260度 Maximum 260℃ Maximum 焊接時間 2~5 seconds Solder Dwell Time: 2~5 seconds
14.2 建議手持烙鐵焊接參數 Recommended Hand-Solder Parameters	烙鐵溫度：350℃ +/-5℃ Solder Iron Temperature : 350℃ +/-5℃ 加熱時間：5 seconds max. Heating Time : 5 seconds max.	

15 IT 曲線圖 IT Curve :

Average Melting IT Curves



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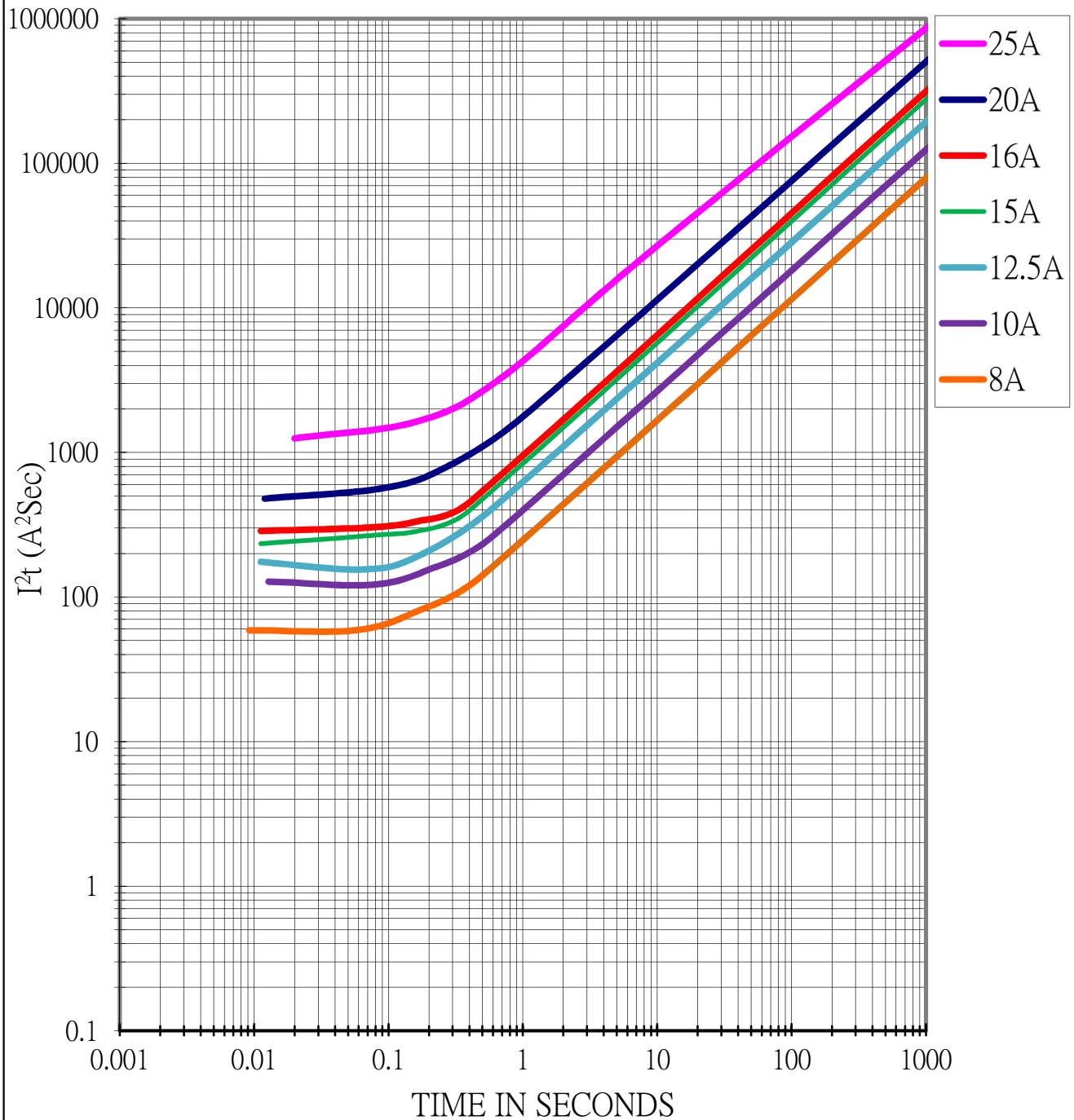
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16 I²t 曲線圖 I²t Curve :

Average Melting I²t Curves



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17 信賴性作業規定 Product Characteristics & Reliability Tests :

Test item	Test Description & Reference
Humidity unload test	MIL-STD-202G · Method 103B · Test Condition A Heat (40±0.5°C) & High Humidity (95±1% RH), 240 hours, ΔR<15%
Thermal shock test	MIL-STD-202G, Method 107g · Test Condition B Temperature setup : 25°C ~ -65°C ~ 25°C ~ 125°C Time setup : -65°C(30min)~25°C(5min)~125°C(30min)~ 25°C(5min) 5 cycles, ΔR<15%
Vibration test	MIL-STD-202G · Method 201A Frequency setup : 10 ~ 55 ~ 10 Hz Time setup : 1 Minutes/cycle (X-Y-Z,120 Cycles) 6hrs, ΔR<15%
Salt spray Test	MIL-STD-202G · Method 101E · Test Condition A Salt spray concentration : 5 ± 1% Test liquid temperature : 35 ± 0.5°C 96hrs, ΔR<15%
Solderability test	Reference IEC 60068-2-20 Temperature setup : 250 ± 3°C, 3 ± 0.3 sec After test terminal electrode wetting area must be greater than 95%
Resistance to Solder Heat Test	Reference IEC 60068-2-20 Temperature setup : 260± 3°C, 10± 1 sec ΔR<15%