中国检验认证集团深圳有限公司校准测量中心
China Certification & Inspection Group Shenzhen Co.,Ltd
CALIBRATION & MEASUREMENT CENTER

CNAS 校准 CNAS L3103

校 准 证 书

CALIBRATION CERTIFICATE

证书编号: (Certificate No.) 2AE2009042801001-H20090402-2

客户信息 Customer Information	客户名称: Name	岳丰电子科技（东莞）有限公司
	客户地址: Address	东莞市石碣镇涌口第一工业区
被校测量器具信息 Information of Instrument under Calibration	仪器名称: Description	换气式环境试验设备 Air-ventilated environmental test equipment
	型号规格: Model/Type	JH-HQLH-1581
	编　号: Serial No.	LH1581110
	仪器制造商: Manufacturer	东莞杰恩
	接收状态 As Received	正常

接收日期: Received Date 2009-4-23

校准日期: Cal.Date 2009-4-23 ~2009-4-28

校准: Calibrated by 张小娜

核验: Inspected by 周勇

签发: Approved by 肖永晓

证书专用章 Issued by 中国检验认证集团深圳有限公司 校准专用章

本中心地址：广东省深圳市南山区科苑北路银河风云大厦2楼　邮政编码(Post No.)：518057
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说 明

Directions

证书编号: (Certificate No.) 2AE2009042801001-H20090402-2

仪器名称: 换气式环境试验设备　　仪器编号: LH1581110
型号规格: JH-HQLH-1581　　仪器制造商: 东莞杰恩

1. 本中心经中国合格评定国家认可委员会审核，符合ISO/IEC17025《检测和校准实验室能力的通用要求》的要求，认可证书号：No. L3103 。本中心所出具的数据均可溯源至国家计量基准和国际单位制(SI)。

This laboratory is accredited to ISO/IEC 17025《Requirements for the competence of Testing and Calibration Laboratories》,CNAS Accreditation Certificate No.L3103. All the data issued by this laboratory are traceable to national primary standards and International System of Units(SI).

2. 对本次校准若有异议，委托方应于收到被校件之日起十五日内向本中心提出。
If there is any objection concerning the calibration, the Client should inform the issuing center within 15 days from the date of the device under test return to the client.

3. 未经本中心许可，不得部分复印、摘用或篡改本证书的内容。
This report may not be reproduced, except in full, without the written approval of CCIC Shenzhen Co.,Ltd Calibration&Measurement Centre.

4. 本证书校准结果只与被校准仪器有关。
The results reported herein apply only to the calibration of the item described above.

5. 本次校准的技术依据:
Procedures for the Calibration:

JJF1101-2003环境试验设备温度、湿度校准规范 JJF1101-2003 environmental testing equipments Temperature and Damp
JZM 3211J-2008换气式环境试验设备校准方法(ASTM D 5374-93（Reapproved 2005） 和ASTM D 5423-93（Reapproved 2005）） JZM 3211J-2008 Calibration method for Environmental Testing Equipments with Air Exchange(ASTM D 5374-93（Reapproved 2005） 和ASTM D 5423-93（Reapproved 2005）)

6. 本次校准所使用的主要标准器具
Standards Used in the Calibration

器具名称 Instrument Description	型 号 Model	编 号 Serial No.	证书编号 Certificate No.	有效期 Due Date	计量特性 Metrological Characteristic
电子秒表	PC393	CCIC-RG-1038	4AK20090112004	2010-1-11	Urel=0.01%
电能质量分析仪	8910C	890710205	4AK20090219004	2010-2-18	±0.2%
数据采集器	2620A	9575003	2AE20090213002	2010-2-12	U=0.3℃
热电偶测温计	54II	92940101	2AM20090113004	2010-1-12	0.4℃

7. 校准地点和环境条件
Place and environmental conditions:

地 点: Place of the Calibration　本中心热工室 Pyrology Room

相对湿度: Relative Humidity　60.0%

校 准 结 果

Results of Calibration

证书编号:
(Certificate No.) 2AE2009042801001-H20090402-2

仪器名称: 换气式环境试验设备　　仪器编号: LH1581110
型号规格: JH-HQLH-1581　　仪器制造商: 东莞杰恩

1、外观检查Exterior Check: 正常 Normal

2、换气量 Rate of Ventilation :(注: ※ 箱体容积=工作室空间+设计额外物理空间)
(Note: ※ Oven Volume=Oven Inner space+additional space based on the physical design of the oven)

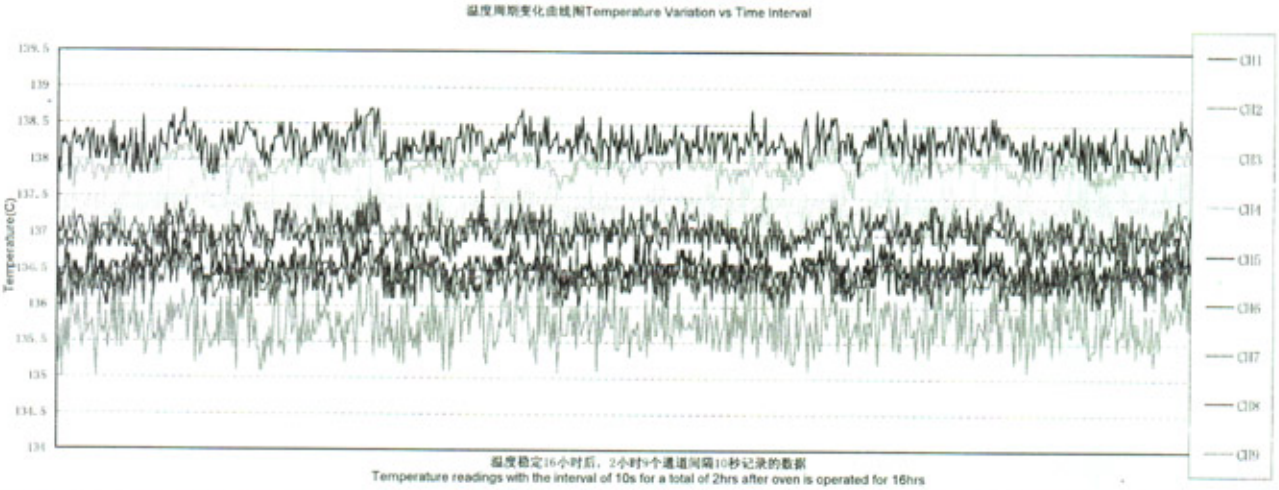
箱体容积 (m^3) Oven Volume	炉温(℃) Oven Temperature	环境温度(℃) Ambient Temperature	空气密度 Density of Air(kg/m^3)	P_2 (W)	P_1 (W)	风口位置 Vent and Damper Mark		测量值 Measurement (air ventilation per hour)	要求 Requirement (air change per hour)	结论 Conclusion
						进风口 Inlet	出风口 Outlet			
0.195	100	28	1.1603	1034.46	277.14	opened	7.00	167	100~200	Pass
	136	28	1.1603	1510.83	375.12	opened	7.00	167	100~200	Pass
工作室空间 Oven Interior space			0.091m³	设计额外物理空间 Additional physically designed space						0.104m³

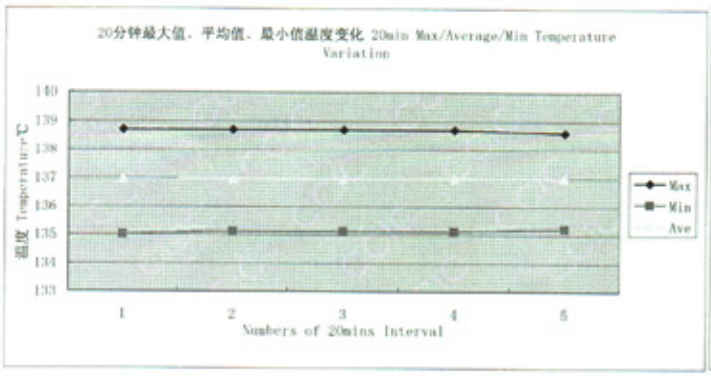
3、温度变化 Temperature Variation:

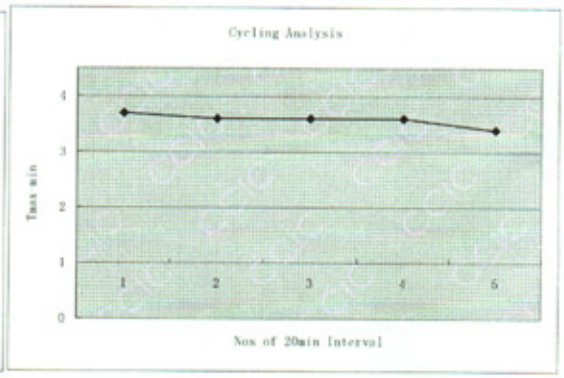
设定温度(℃) Set Temperature	136		最大 Max	最小 Min
		环境温度(℃) Ambient Temperature	27.8	24.3
		工作电压(V) Supply Voltage	225	221

A、温度变化周期:根据数学模型计算,一个完整周期为20分钟

One complete cycle of temperature variation is determined when successive readings, taken in 2 hours , indicate no significant changes in Max/Min/Average Temperatures at 20 minutes intervals. One complete cycle is determined as 20 minutes.







根据ASTM 要求: Tmax-Tmin<5℃, 设定Tmax, Tmin, Tave在所记录的连续周期内的变化小于1℃, 如上图所示20分钟为完整的温度变化周期。According to the requirement of ASTM:Tmax-Tmin<5℃, set the variatiopns of Tmax,Tmin,Tave are less than 1℃ in the consecutive cycles. 20 minutes is determined as the complete temperature variation cycle since the conditions are met.

校 准 结 果

Results of Calibration

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B、炉温稳定16小时后的数据 (℃)
Temperature readings after operating for 16hrs

Time (min)	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9
0	136.3	136.8	137.3	137.6	136.7	136.4	135.8	138.1	135.4
5	136.4	137.0	137.3	137.8	136.7	136.5	136.3	138.1	135.6
10	135.7	136.6	137.2	137.7	136.7	136.0	136.1	138.1	135.6
15	136.5	136.9	137.3	137.7	136.7	136.5	135.9	138.2	135.4
20	136.6	137.3	137.4	138.1	136.9	136.5	136.2	138.5	136.0

实测设定温度℃ Average Set Temperature	温度梯度℃ Temperature Gradient	温度变差℃ Temperature Variation	温度波动℃ Temperature Fluctuation	允许最大温差(±℃) Req't	结论 Conclusion
136.8	2.8	3.1	0.9	5	Pass

C、炉温稳定40小时后的数据 (℃)
Temperature readings after operating for 40hrs

Time (min)	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9
0	135.7	136.6	136.9	137.6	136.7	136.2	135.9	138.1	136.0
5	136.2	136.8	136.7	137.5	136.8	136.2	136.3	137.7	135.2
10	136.2	136.7	137.0	137.7	137.0	136.3	136.2	138.0	135.6
15	136.5	136.6	136.8	137.7	136.7	136.4	136.3	137.9	134.9
20	136.2	136.8	137.1	137.4	136.4	136.2	136.1	137.8	135.2

实测设定温度℃ Average Set Temperature	温度梯度℃ Temperature Gradient	温度变差℃ Temperature Variation	温度波动℃ Temperature Fluctuation	允许最大温差(±℃) Req't	结论 Conclusion
136.6	3.0	3.2	1.1	5	Pass

D、炉温稳定64小时后的数据 (℃)
Temperature readings after operating for 64hrs

Time (min)	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9
0	135.7	136.9	137.0	137.7	136.5	136.2	135.9	137.8	135.7
5	136.0	136.8	137.5	137.8	136.7	136.2	136.1	138.3	135.5
10	136.2	136.6	137.0	137.5	136.6	135.9	135.9	137.5	135.5
15	136.5	136.6	137.2	137.7	136.7	136.2	135.9	138.1	135.7
20	136.5	136.9	137.1	137.8	136.7	136.4	136.5	137.7	135.1

实测设定温度℃ Average Set Temperature	温度梯度℃ Temperature Gradient	温度变差℃ Temperature Variation	温度波动℃ Temperature Fluctuation	允许最大温差(±℃) Req't	结论 Conclusion
136.7	2.8	3.2	0.8	5	Pass

校 准 结 果

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E、炉温稳定88小时后的数据 (℃)
Temperature readings after operating for 88hrs

Time (min)	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9
0	136.4	136.7	136.7	137.7	136.5	136.2	136.1	138.0	135.5
5	135.8	136.6	136.7	137.2	136.6	135.7	135.9	137.6	135.1
10	136.2	136.6	137.0	137.5	136.6	136.2	136.1	137.8	135.6
15	136.3	136.7	137.0	137.7	136.5	136.3	136.2	137.8	134.8
20	136.3	136.5	136.9	137.2	136.5	136.0	135.9	137.5	134.8

实测设定温度℃ Average Set Temperature	温度梯度℃ Temperature Gradient	温度变差℃ Temperature Variation	温度波动℃ Temperature Fluctuation	允许最大温差(±℃) Req't	结论 Conclusion
136.5	3.0	3.2	0.8	5	Pass

F、炉温稳定112小时后的数据 (℃)
Temperature readings after 112hrs oven operating

Time (min)	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9
0	136.3	137.0	137.1	137.7	136.4	136.4	136.0	138.1	135.4
5	136.1	136.7	137.0	137.5	136.3	136.2	136.1	137.5	135.4
10	136.2	136.5	137.4	137.5	136.2	136.1	136.0	137.7	135.2
15	135.7	136.9	136.9	137.4	136.3	136.1	136.0	137.6	135.1
20	135.9	136.7	137.0	137.5	136.5	136.1	135.9	137.9	135.6

实测设定温度℃ Average Set Temperature	温度梯度℃ Temperature Gradient	温度变差℃ Temperature Variation	温度波动℃ Temperature Fluctuation	允许最大温差(±℃) Req't	结论 Conclusion
136.6	2.7	3.0	0.6	5	Pass

实测设定温度变差±℃ Variation in Set Temperature	0.3	允许最大温差(±℃) Requirement	2.5	结论 Conclusion	Pass

4、热滞时间 Thermal Lag Time

环境温度(℃) Ambient Temperature	23.1	温差(℃) Temperature difference	时间(s) Time to Reach
最大温差(T) Max Temperature Difference		125.4	10
10%最大温差(T_{10}) 10% Max Temperature Difference		12.5	483

设定温度(℃) Adjusted Temperature	热滞时间(T-T10) Thermal Lag Time	要求 Requirement at 200±5℃	结论 Conclusion
200	473	≤660s	Pass

校 准 结 果

Results of Calibration

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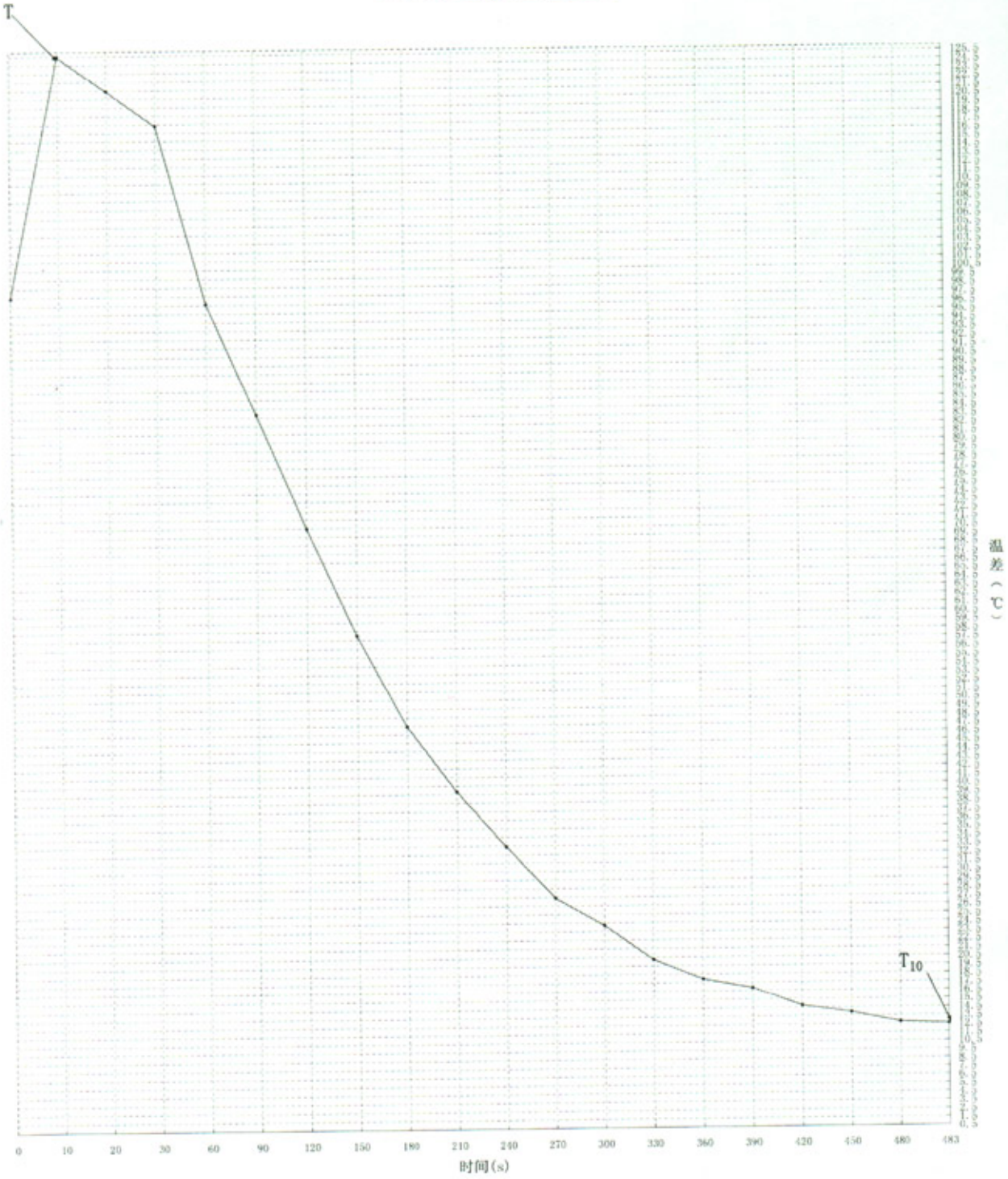
老化箱热滞时间曲线图
Thermal Lag Time Curve



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说明(Notes)

1、测量结果的扩展不确定度评定依据JJF1059-1999测量不确定度评定与表示。
The expanded uncertainty of the measurement results are accessed according to JJF1059-1999 Evaluation and Expression of Uncertainty in Measurement.

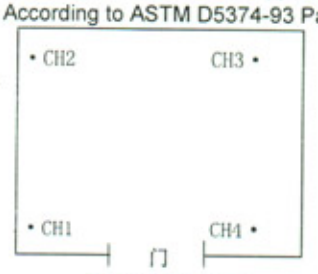
Temperature温度: U= 1.5 ℃　　Rate of ventilation换气量: U=4 times per hour

Time时间: U= 0.5 s　　Temperature variation温差: U= 1.5℃　　(k=2)

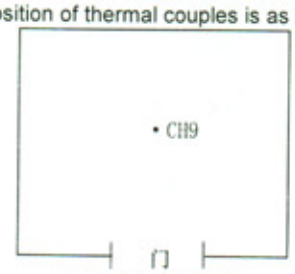
2、当炉体的风口位置设定在本证书标定的位置，校准结果符合ASTM D 5423-93（Reapproved 2005）相关技术指标要求。改变风口位置，结果需重新测定。

The calibration results conform to ASTM D 5423-93（Reapproved 2005) when the vent and damper of the oven is adjusted to the marked location. The oven need to be recalibrated if the vent and damper mark is changed.

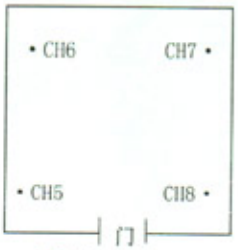
3、根据ASTM D 5374-93（Reapproved 2005）第6.2.3项，测量温度变化的热电偶分布图如下:
According to ASTM D5374-93 Par.6.2.3, position of thermal couples is as below:



上层 Upper layer



中层 Middle layer



下层 Lower layer

4、建议下次校准日期: 2010-4-27
Suggested date for the next cal:

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