

**Securities ID code:6859**



# **ESPEC CORP.**

**Results Briefings for  
Fiscal 2013 Ended March 2014**

**May 22, 2014**

**[www.espec.co.jp](http://www.espec.co.jp)**

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March 31, 2015**

**Reference**

# Company Profile

Industry-leading manufacturer of environmental test chambers;  
67th year since company was founded in Osaka

Name	ESPEC CORP.
Head Office	3-5-6, Tenjinbashi, Kita-ku, Osaka
Represented By	Masaaki Ishida
Established	July 25, 1947
Incorporated	January 13, 1954
Paid-up Capital	¥6,895 Million
Shares Issued	23,781,394 Shares
Employees	1,356 (consolidated)
Main Business	Manufacture and Sales of Environmental Test Chambers, Energy Device Equipment, Semiconductor Equipment, FPD Equipment and Plant Factory. After-sales Service, Commissioned Tests and others.



[Head office]

(As of March 31, 2014)

# Global Network

Consolidated Subsidiaries

10 companies

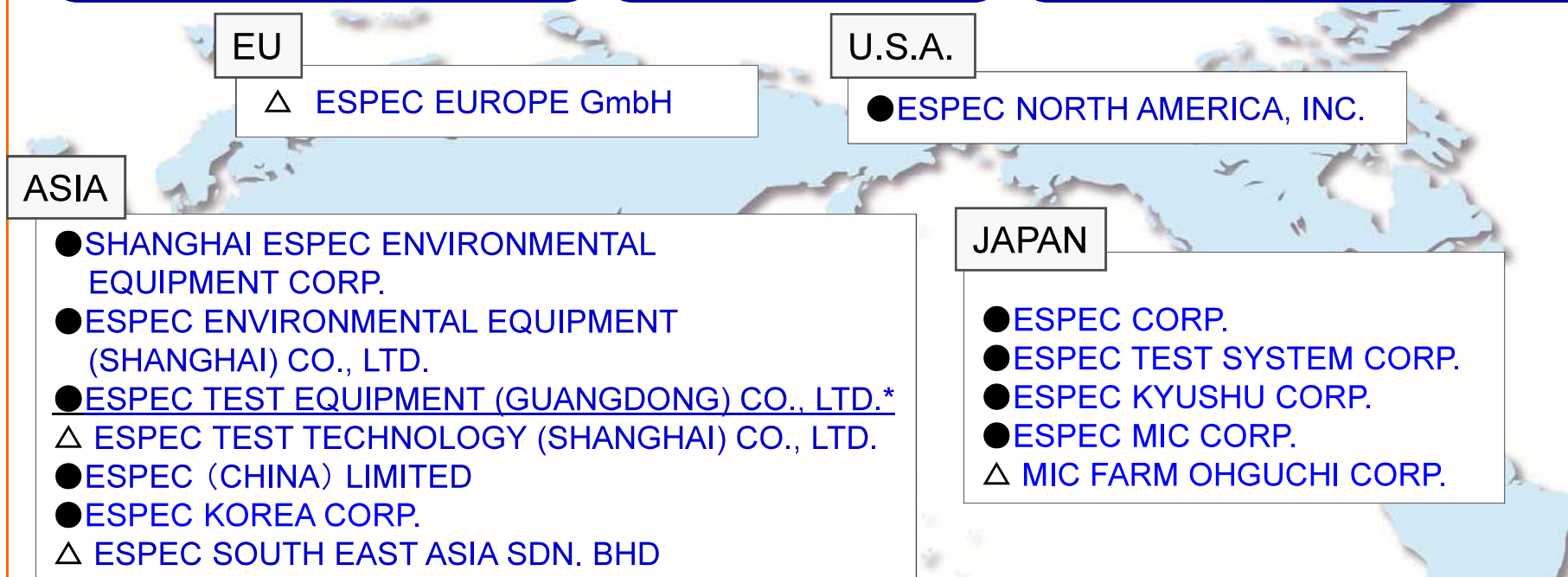
Global Network

43 countries

33 companies

Business facilities in Japan:26

Domestic agencies in Japan:48



\* In May 2013, Espec Test Equipment (Guangdong) Co., Ltd. (a wholly owned manufacturing subsidiary of Espec Corp.) was established.



●: Consolidated Subsidiaries  
 △: Non-consolidated Subsidiaries

# TOPICS

Espec included in “Global Niche Top Companies Selection 100” of the Ministry of Economy, Trade and Industry (METI)



Testimonial

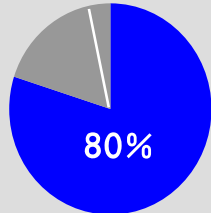
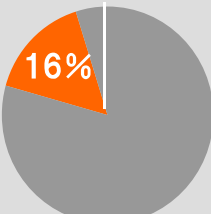
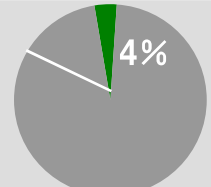
**Environmental Test Chambers**  
Global market share 30% or more



Temperature (& Humidity) Chambers  
“Platinum J series”


\* A METI initiative to support companies that excel in developing business overseas and are leading Japan's economy, so as to provide direction for other enterprises and contribute to improving the global competitiveness of Japanese enterprises.

# Summary of ESPEC Business (Per Market / Use)

		Main Products	Market	Use	Sales composition (2014/3)
Equipment Business	Environmental Test Chambers	<ul style="list-style-type: none"> <li>• Temperature &amp; humidity chamber</li> <li>• Walk-in type temperature &amp; humidity chamber</li> <li>• Thermal shock chamber</li> <li>• Vibration combined environmental test system</li> <li>• Bench-top type temperature &amp; humidity chamber</li> <li>• HAST chamber</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic component and equipment market</li> <li>• Automobile market</li> <li>• Semiconductor market</li> <li>• Medicine, Cosmetics, Foods and others</li> </ul>	<ul style="list-style-type: none"> <li>• For R &amp; D</li> <li>• For credibility and evaluation</li> <li>• For production and inspection</li> </ul>	 <p>80%</p>
	Energy Device Equipment	<ul style="list-style-type: none"> <li>• Advanced battery tester</li> <li>• LIB electrode oven</li> <li>• LIB safety evaluation system</li> <li>• Solar battery evaluation system</li> </ul>	<ul style="list-style-type: none"> <li>• Secondary batteries</li> <li>• Power semiconductors</li> <li>• Solar battery</li> <li>• Next generation automobile</li> </ul>	<ul style="list-style-type: none"> <li>• For R &amp; D</li> <li>• For credibility and evaluation</li> <li>• Safety evaluation</li> <li>• For production</li> </ul>	
	Semiconductor Equipment	<ul style="list-style-type: none"> <li>• Burn-in system</li> <li>• Semiconductor evaluation system</li> <li>• Instrumentation system</li> </ul>	<ul style="list-style-type: none"> <li>• Semiconductor market</li> <li>• Automobile market</li> </ul>	<ul style="list-style-type: none"> <li>• For production and inspection</li> <li>• For development and evaluation</li> </ul>	
	FPD Equipment	<ul style="list-style-type: none"> <li>• Single processing system vertical clean oven</li> <li>• Low Oxygen Clean Oven (Temperature Property: Maximum 500°C)</li> </ul>	<ul style="list-style-type: none"> <li>• LCD market</li> <li>• Organic Electro-Luminescence market</li> </ul>	<ul style="list-style-type: none"> <li>• For production (Annealing, baking, drying)</li> </ul>	
Service Business	After-sales Service and Engineering	<ul style="list-style-type: none"> <li>• After-sales service</li> <li>• Construction around equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic component and equipment market</li> <li>• Automobile market</li> <li>• Semiconductor market</li> </ul>	—	 <p>16%</p>
	Commissioned Tests and Facility Rentals	<ul style="list-style-type: none"> <li>• Commissioned test</li> <li>• Equipment rental</li> <li>• Resale</li> <li>• Calibration</li> </ul>		<ul style="list-style-type: none"> <li>• For R &amp; D</li> <li>• For credibility and evaluation</li> </ul>	
Other Business	Environmental Engineering Business	Reforestation (Tree planting), Waterfront biotope restoration, urban greening			 <p>4%</p>
	New Business	Plant factory, developing and creating new businesses as a major source of profit			

ESPEC

**Financial Result for the Fiscal 2013  
Ended March 31, 2014**



# Financial Highlights

Sales and profit both increased on strong performances in the domestic automobile market, and in Europe and America overseas

## Profit and Losses

- **In Japan, sales increased in the Japanese market**, reflecting a robust performance by customized products principally in the automobile market, despite a slump in performance by highly versatile standard products.
- **Overseas, sales increased in overseas markets** on the back of a favorable performance by the company's U.S. subsidiary, although the performance of subsidiaries in China was sluggish.
- **Profit also increased** due to the increase in sales.

## Balance Sheet and Cash Flow

- Total assets increased by approx. 3.3 billion yen, mainly due to the increase in notes and accounts receivable-trade, and noncurrent assets.
- Net assets also increased but the increase in total assets was greater. The shareholders' equity ratio decreased by 0.6 points to 75.6%.
- Cash decreased by approx. 0.4 billion yen, reflecting the decrease in operating cash flow and investment cash flow.

## Dividends

- **The company's annual dividend will be 20 yen per share**, with an interim dividend of 7 yen and a year-end dividend of 13 yen (scheduled), an increase of 2 yen.



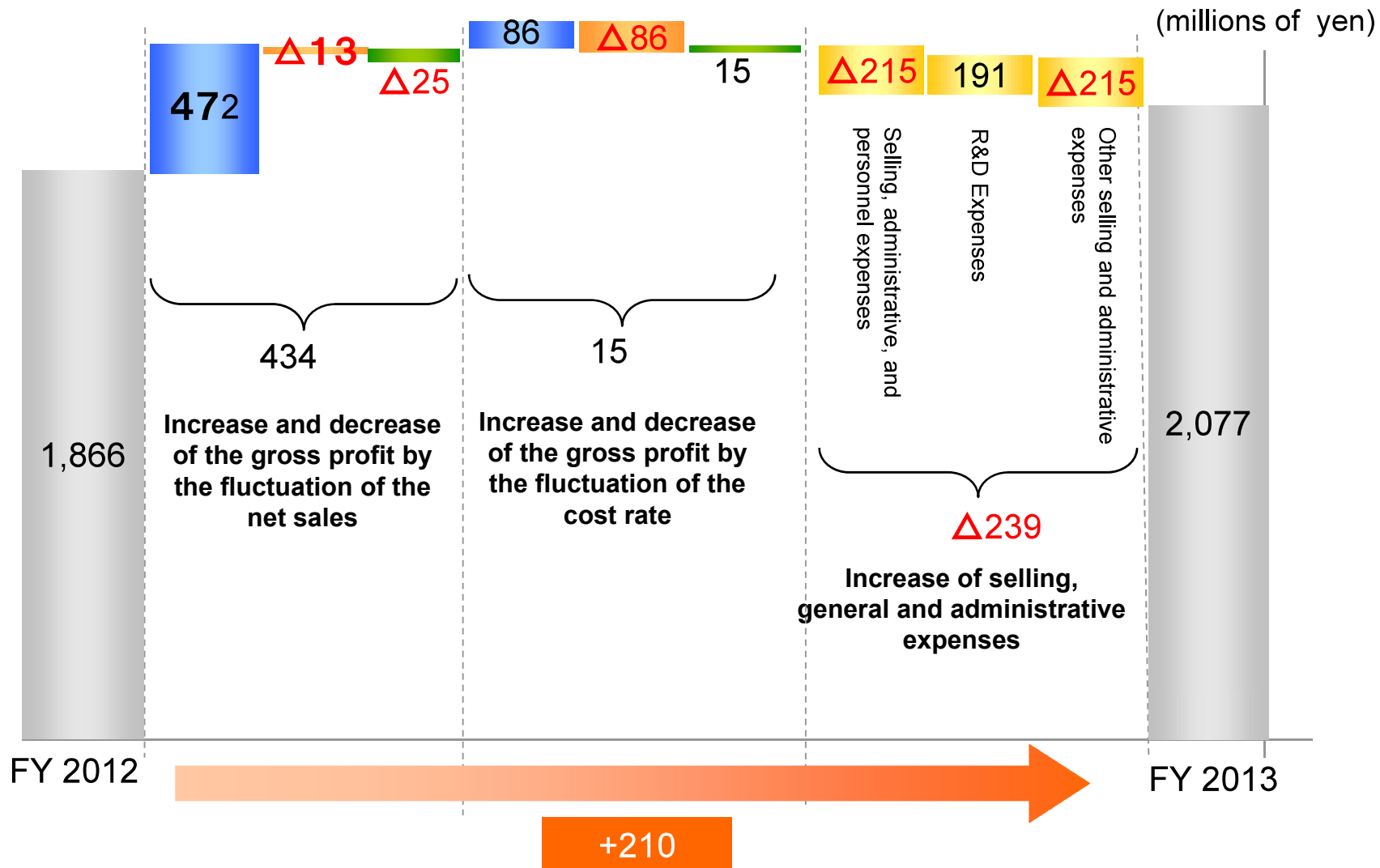
# Summary of Profits and Losses

(millions of yen)

	FY 2012	FY 2013	Rate of Change
Orders-Received	30,412	31,760	4.4%
Net sales	30,799	32,099	4.2%
Cost of Net Sales	20,518 (66.6%)	21,367 (66.6%)	4.1%
Gross profit	10,281	10,731	4.4%
SG & A	8,414	8,654	2.8%
Operating income	1,866	2,077	11.3%
Ordinary income	2,162	2,370	9.6%
Quarterly net income	1,219	1,570	28.8%

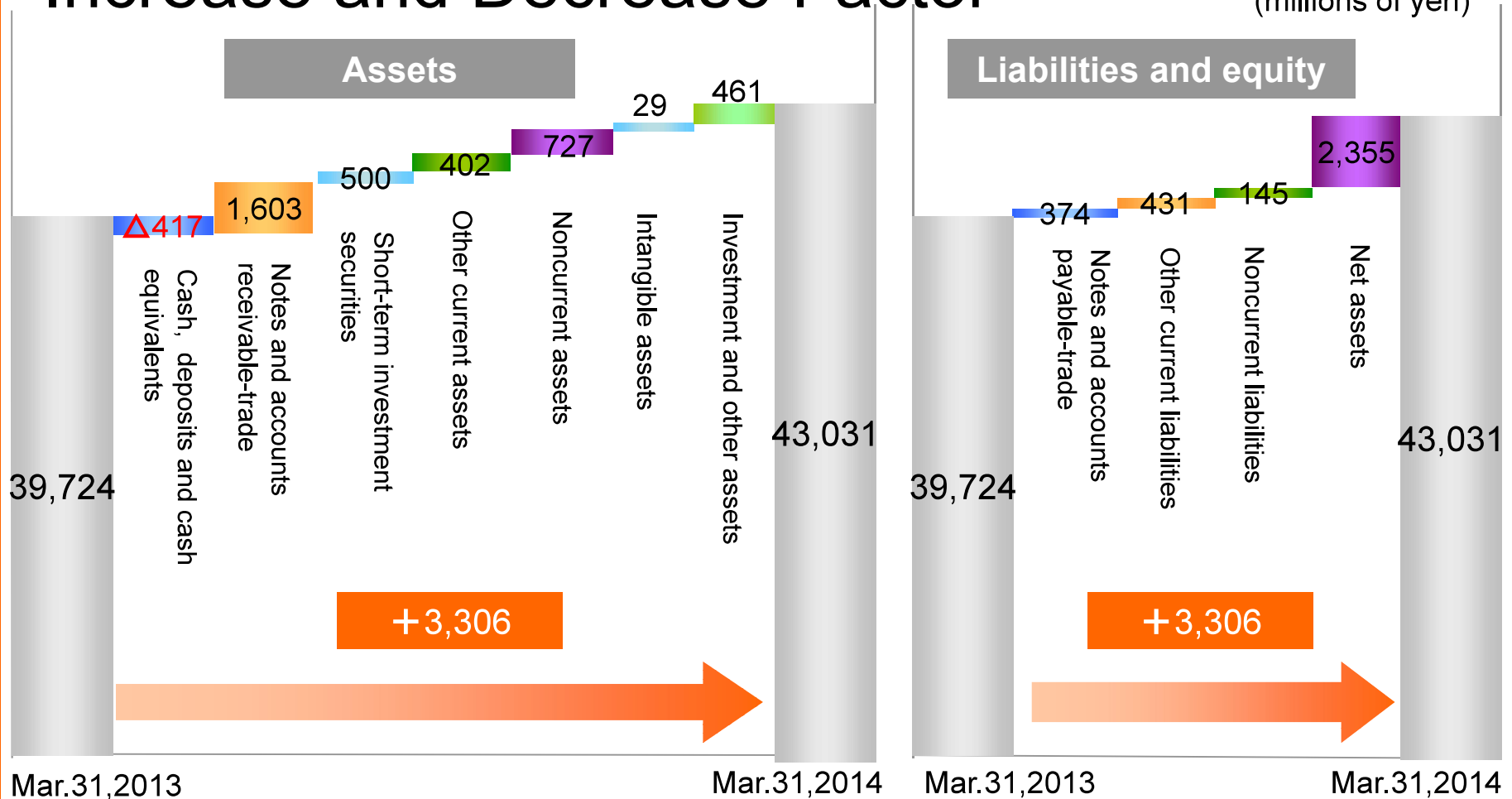
# Analysis of Operating Income Increase and Decrease Factor

- Equipment Business
- Service Business
- Other Business+Elimination



# Analysis of Assets and Liabilities Increase and Decrease Factor

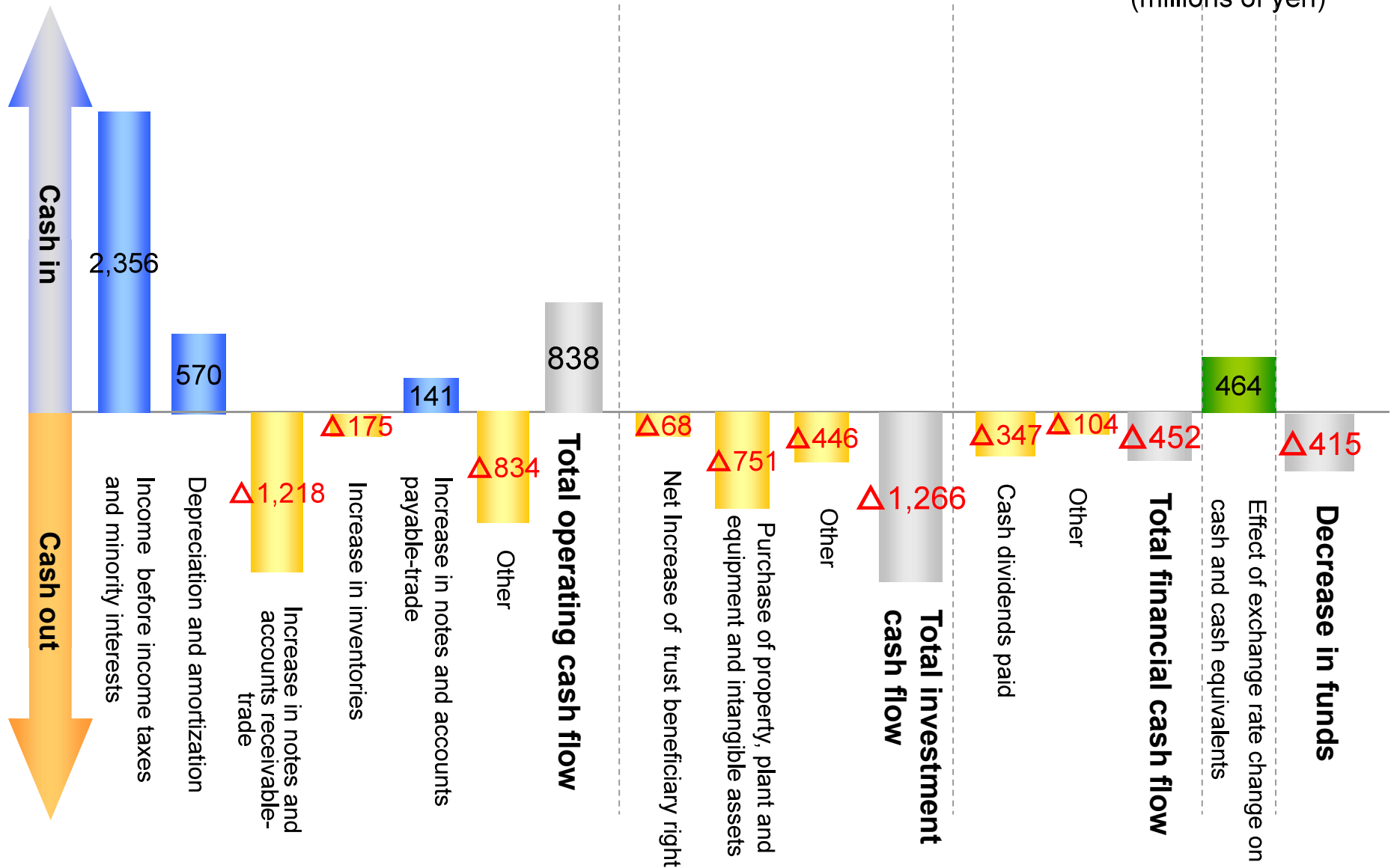
(millions of yen)



Total assets increased by approx. 3.3 billion yen, mainly due to the increase in notes and accounts receivable-trade, and noncurrent assets.

# Statement of Cash Flow

(millions of yen)



ESPEC

# Analysis per Segment for the Fiscal 2013 Ended March 31, 2014

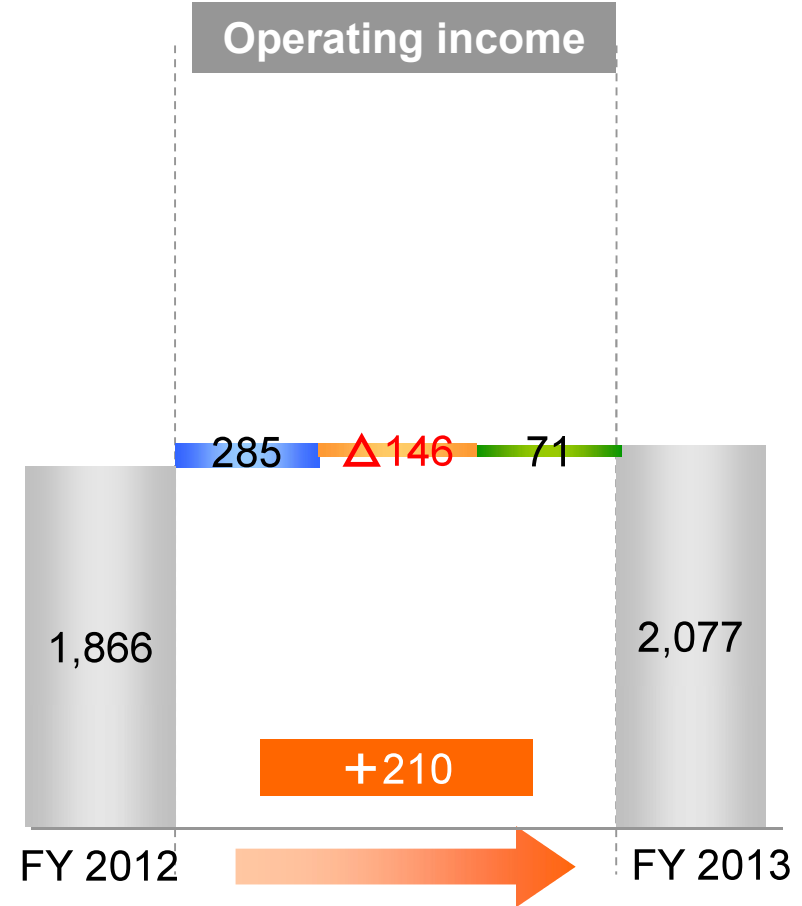
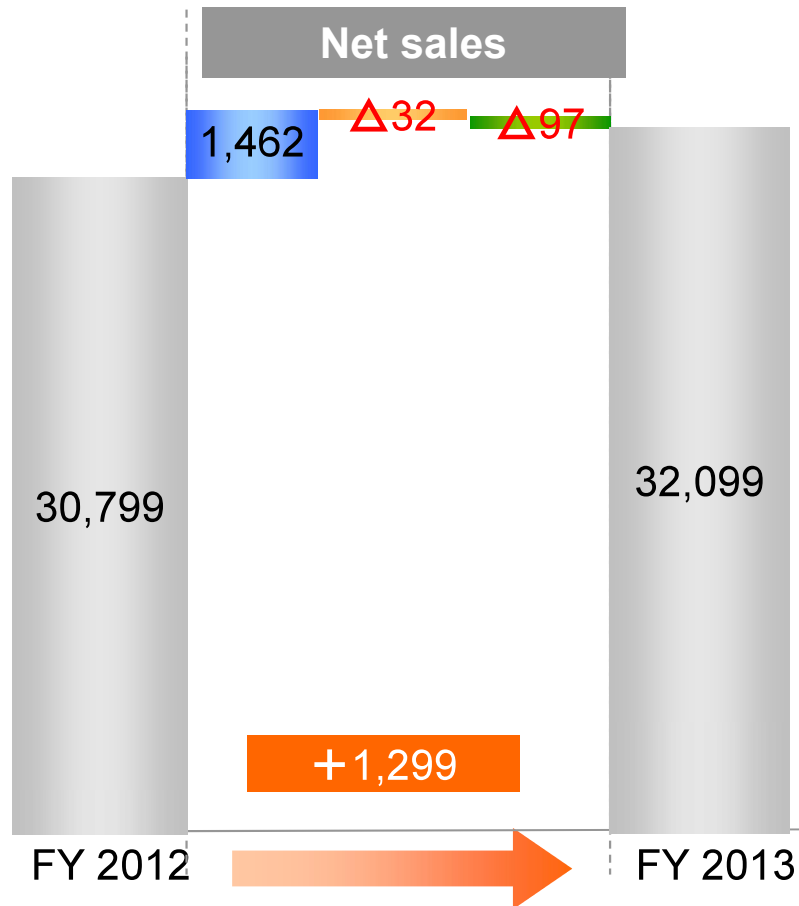
# Performance by Segment

(millions of yen)

		FY 2012	FY 2013	Rate of Change	Revision Plan
Equipment Business	Orders-Received	24,051	25,271	5.1%	26,500
	Net Sales	24,368	25,831	6.0%	25,500
	Operating Income	1,339	1,625	21.3%	1,650
Service Business	Orders-Received	5,169	5,288	2.3%	5,300
	Net Sales	5,201	5,168	Δ0.6%	5,300
	Operating Income	650	504	Δ22.5%	600
Other Business	Orders-Received	1,322	1,375	4.0%	1,300
	Net Sales	1,365	1,267	Δ7.1%	1,300
	Operating Income	Δ123	Δ52	—%	50
Elimination	Orders-Received	Δ131	Δ174	—	Δ100
	Net Sales	Δ134	Δ168	—	Δ100
	Operating Income	0	Δ0	—	0
Total	Orders-Received	30,412	31,760	4.4%	33,000
	Net Sales	30,799	32,099	4.2%	32,000
	Operating Income	1,866	2,077	11.3%	2,300

# Analysis of Variance between Previous Year and This Year

■ Equipment Business  
■ Service Business  
■ Other Business+Elimination  
 (millions of yen)



■ The equipment business posted an increase, resulting in the increase in sales.

■ Operating income increased because the decrease in the service business was covered by the equipment business.

# Equipment Business

## Environmental Test Chambers

- In the Japanese market, sales increased.
  - Sales of highly versatile standard products decreased year on year.
  - Customized products such as walk-in type temperature and humidity chambers performed favorably, especially in the automobile market.
- In overseas markets, sales increased.
  - As regards China and Asia, sales were favorable at the company's U.S. subsidiary, although sales were sluggish at the subsidiaries in China.
  - Overall, both the amount of orders received and sales increased from the previous year.

## Energy Device Equipment

- The company strove to cultivate markets centered on the field of in-vehicle secondary batteries. Even though product inquiries increased, this did not lead to an increase in orders-received.
- Overall, both the amount of orders received and sales decreased from the previous year.

## Semiconductor Equipment

- Due in part to orders from a certain semiconductor manufacturer, the amount of orders-received was on par with the previous year and net sales increased year on year.

## FPD Equipment

- Although orders-received declined year on year, deliveries to an overseas manufacturer pushed up net sales year on year.



# Equipment Business

(millions of yen)	FY 2012	FY 2013		Revision Plan
			Rate of Change	
Orders- Received	24, 051	25, 271	5. 1%	26, 500
Net Sales	24, 368	25, 831	6. 0%	25, 500
Operating Income [Profit ratio (%)]	1, 339 [5. 5%]	1, 625 [6. 3%]	21. 3%	1, 650 [6. 5%]

# Service Business

(millions of yen)	FY 2012	FY 2013		Plan (Beginning of the period)
			Rate of Change	
Orders-Received	5,169	5,288	2.3%	5,300
Net Sales	5,201	5,168	Δ0.6%	5,300
Operating Income [Profit ratio (%)]	650 [12.5%]	504 [9.8%]	Δ22.5%	600 [11.3%]

## After-sales Service and Engineering

- Orders-received slightly increased and net sales were mostly unchanged year on year, mainly due to a recovery trend as customers eased cost restraints.

## Commissioned Tests and Facility Rentals

- The mainstay test consulting business performed strongly, especially in the automobile market, but facility rentals were sluggish.
- Both the amount of orders-received and net sales were on par with the previous year.

## Other Business

(millions of yen)	FY 2012	FY 2013		Plan (Beginning of the period)
			Rate of Change	
Orders- Received	1, 322	1, 375	4. 0%	1, 300
Net Sales	1, 365	1, 267	Δ7. 1%	1, 300
Operating Income [Profit ratio (%)]	Δ123 [Δ9. 0%]	Δ52 [Δ4. 1%]	—%	50 [3. 8%]

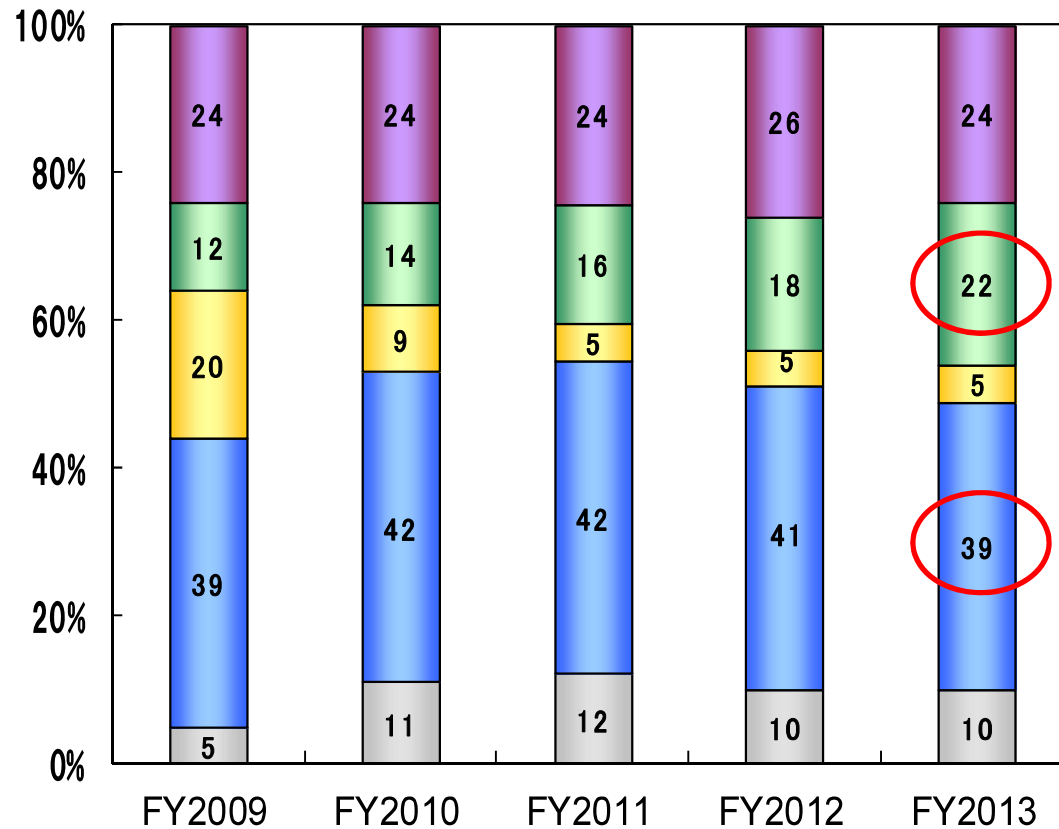
### Environmental Engineering and Plant Factory

- In the environmental engineering business, the reforestation (tree planting) and waterside project businesses performed favorably.
- In the plant factory business, a large order was received at the end of the fiscal year, but receipt of other large orders was postponed.
- The amount of orders-received increased, and net sales decreased.

# Breakdown of Sales by Market

## Non-consolidated (Equipment business)

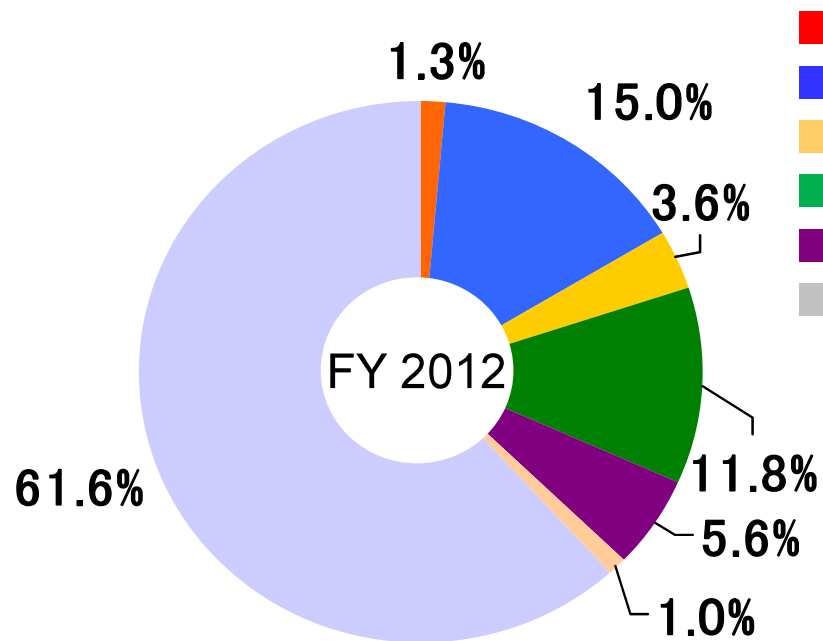
- Other markets
- Automobile market
- Flat panel display market
- Electronic device and equipment market
- Semiconductor market



# Sales by Region

FY 2012

Overseas sales ratio: 38.4%



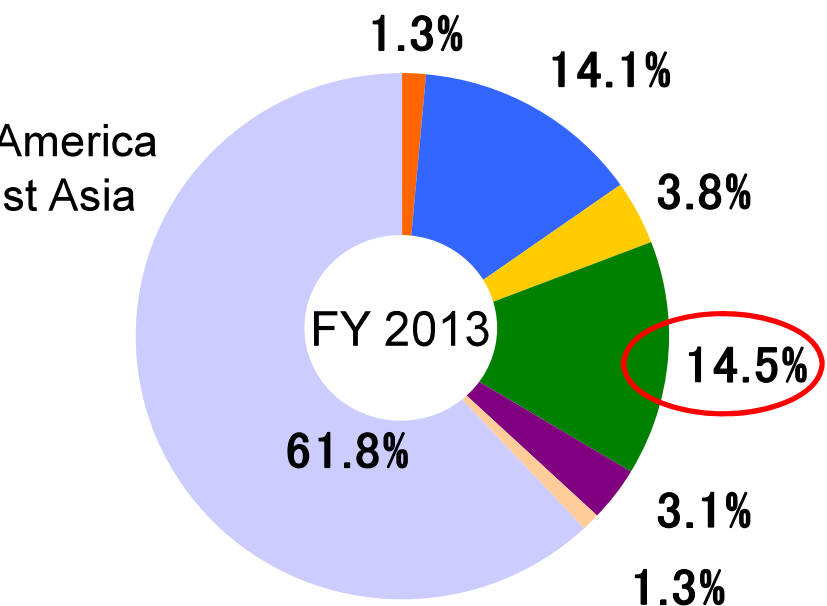
Total: 30,799 million yen

(Overseas sales: 11,819 million yen)

FY 2013

Overseas sales ratio: 38.2%

- Taiwan
- China
- Korea
- Europe/America
- Southeast Asia
- Japan



Total: 32,099 million yen

(Overseas sales: 12,252 million yen)



# Management Plan for the Fiscal 2014 Ending March 31, 2015

# Targets for Consolidated Revenues and Earnings

	FY 2013	FY 2014 Target
Net Sales	¥32,099million	¥33,000 million or more
Operating Income	¥2,077million	¥2,300 million or more
Operating Income Ratio	6.5%	7% or more

# Full-term Plan for the Fiscal 2014

(millions of yen)	FY 2013 (Results)		FY 2014(Plan)			
	Second Quarter	Fiscal	Second Quarter		Fiscal	
				2Q on 2Q ratio		Year on year ratio
<b>Orders-received</b>	<b>15,551</b>	<b>31,760</b>	<b>16,500</b>	<b>6.1%</b>	<b>34,000</b>	<b>7.1%</b>
<b>Net sales</b>	<b>14,039</b>	<b>32,099</b>	<b>15,000</b>	<b>6.8%</b>	<b>33,000</b>	<b>2.8%</b>
<b>Gross profit</b> [Profit ratio (%)]	<b>4,788</b> [34.1%]	<b>10,731</b> [33.4%]	<b>5,050</b> [33.7%]	<b>5.5%</b>	<b>11,430</b> [34.6%]	<b>6.5%</b>
<b>Operating income</b> [Profit ratio (%)]	<b>680</b> [4.8%]	<b>2,077</b> [6.5%]	<b>700</b> [4.7%]	<b>2.9%</b>	<b>2,300</b> [7.0%]	<b>10.7%</b>
<b>Ordinary income</b> [Profit ratio (%)]	<b>811</b> [5.8%]	<b>2,370</b> [7.4%]	<b>750</b> [5.0%]	<b>Δ7.5%</b>	<b>2,400</b> [7.3%]	<b>1.3%</b>
<b>Net Income</b> [Profit ratio (%)]	<b>503</b> [3.6%]	<b>1,570</b> [4.9%]	<b>400</b> [2.7%]	<b>Δ20.6%</b>	<b>1,600</b> [4.8%]	<b>1.9%</b>
<b>Capital expenditures</b>	<b>276</b>	<b>1,115</b>	<b>640</b>	<b>131.9%</b>	<b>800</b>	<b>Δ28.3%</b>
<b>Depreciation expenses</b>	<b>267</b>	<b>562</b>	<b>343</b>	<b>28.5%</b>	<b>695</b>	<b>23.7%</b>
<b>R&amp;D expenditures</b>	<b>487</b>	<b>951</b>	<b>645</b>	<b>32.4%</b>	<b>1,210</b>	<b>27.2%</b>
<b>Profit Per Share (yen)</b>	<b>21.65</b>	<b>67.52</b>	<b>17.20</b>	<b>Δ20.6%</b>	<b>68.79</b>	<b>1.9%</b>



# Equipment Business

(millions of yen)	FY 2013 (Result)		FY 2014 (Plan)			
	Second Quarter	Fiscal	Second Quarter	Fiscal		
				2Q on 2Q ratio	Year on year ratio	
<b>Orders-Received</b>	<b>12,682</b>	<b>25,271</b>	<b>13,500</b>	<b>6.4%</b>	<b>27,400</b>	<b>8.4%</b>
<b>Net sales</b>	<b>11,320</b>	<b>25,831</b>	<b>12,150</b>	<b>7.3%</b>	<b>26,600</b>	<b>3.0%</b>
<b>Operating income</b> [Profit ratio (%)]	<b>575</b> [5.1%]	<b>1,625</b> [6.3%]	<b>550</b> [4.5%]	<b>Δ4.4%</b>	<b>1,800</b> [6.8%]	<b>10.8%</b>

# Service Business

(millions of yen)	FY 2013 (Result)		FY 2014 (Plan)			
	Second Quarter	Fiscal	Second Quarter		Fiscal	
				2Q on 2Q ratio		Year on year ratio
<b>Orders-Received</b>	<b>2,493</b>	<b>5,288</b>	<b>2,600</b>	<b>4.3%</b>	<b>5,400</b>	<b>2.1%</b>
<b>Net sales</b>	<b>2,306</b>	<b>5,168</b>	<b>2,450</b>	<b>6.2%</b>	<b>5,300</b>	<b>2.5%</b>
<b>Operating income</b> [Profit ratio (%)]	<b>177</b> [7.7%]	<b>504</b> [9.8%]	<b>200</b> [8.2%]	<b>12.6%</b>	<b>500</b> [9.4%]	<b>Δ0.9%</b>

# Other Business

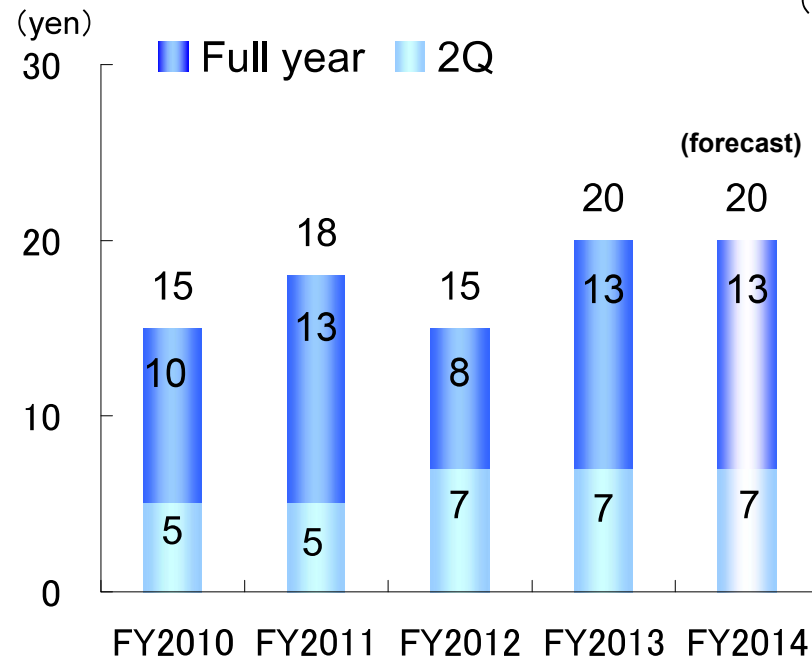
(millions of yen)	FY 2013(Result)		FY 2014 (Plan)			
	Second Quarter	Fiscal	Second Quarter		Fiscal	
				2Q on 2Q ratio		Year on year ratio
Orders-Received	464	1,375	500	7.6%	1,400	1.8%
Net sales	496	1,267	500	0.6%	1,300	2.6%
Operating income (loss) [Profit ratio (%)]	Δ72 [Δ14.6%]	Δ52 [Δ4.1%]	Δ50 [Δ10.0%]	—	0 [0.0%]	—

# Dividends

## Dividend policy

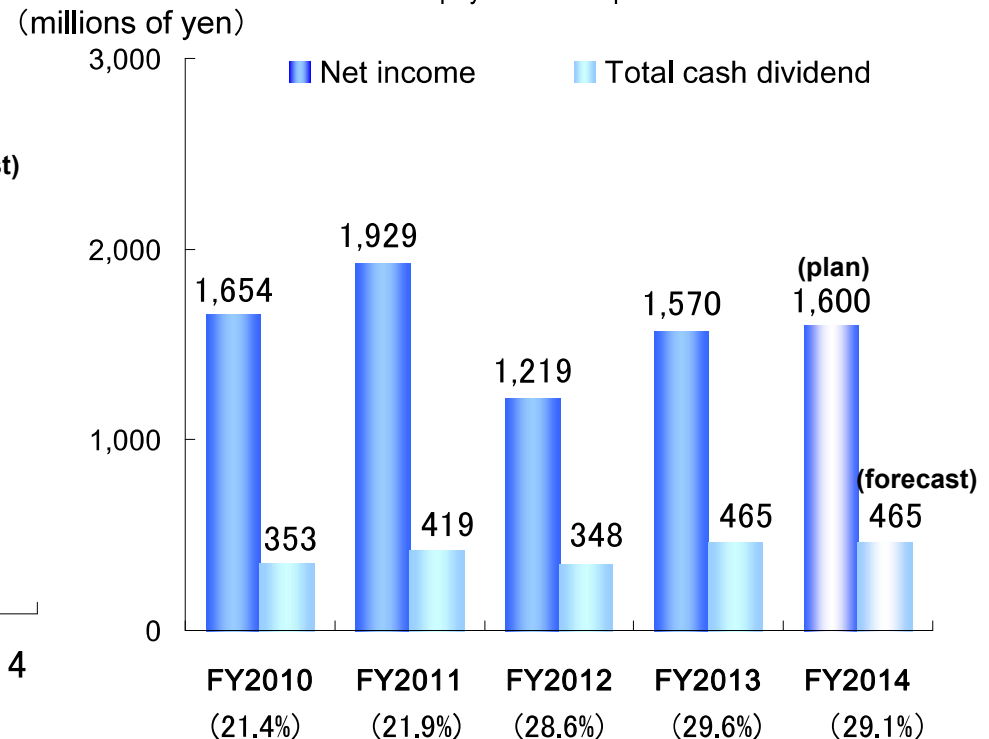
Recognizing that passing on profits to our shareholders is a key priority and that raising corporate value on a lasting basis is fundamental to raising shareholder value, dividends are decided taking into account sustainability and the dividend payout ratio.

## Dividend per share



## Net income and total cash dividend

\*Consolidated dividend payout ratio in parentheses.





# Basic Policy and Priority Strategies for the Fiscal 2014 Ending March 31, 2015

# Basic Policy for the Fiscal 2014

1. Pursue growth strategies “faster” and “more dynamically”
2. Achieve “expansion in the scope of business” and “efficiency enhancements” in order to survive in the Japanese market

# Priority Strategies for the Fiscal 2014

## Priority Strategy 1

Cultivate and capture markets in Asia and China by enhancing Group collaboration

## Priority Strategy 2

Expand the scope of business by making full entry into the “Food and Drug markets” in addition to the green technology market

## Priority Strategy 3

Investment of management resource

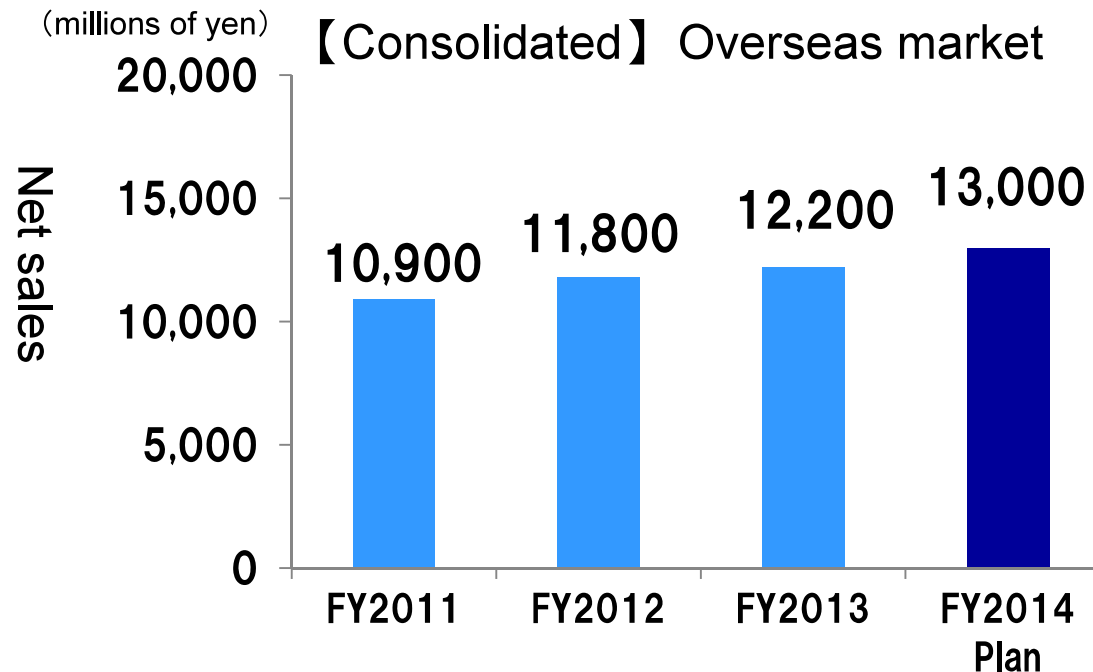
Win to survive in the domestic environmental testing business

# 1. Cultivate and capture markets in Asia and China by enhancing Group collaboration

## Status of the markets in Asia and China

In China, firm growth is forecast despite concerns about the slowdown of growth.

- Strengthening capabilities of overseas bases
- Strengthening Group alliances





# 1. Cultivate and capture markets in Asia and China by enhancing Group collaboration



## China

- Establish production systems of “ESPEC TEST EQUIPMENT (GUANGDONG) CO.,LTD”
- Rebuild marketing and service systems

## ASEAN

Strengthen service support systems by leveraging “the ASEAN support desks”

## South Korea

Strengthen production capabilities of ESPEC KOREA CORP.

# TOPICS

An opening ceremony for the new production subsidiary  
“ESPEC TEST EQUIPMENT(GUANGDONG) CO.,LTD”  
was held in March 2014



New products suiting China’s needs



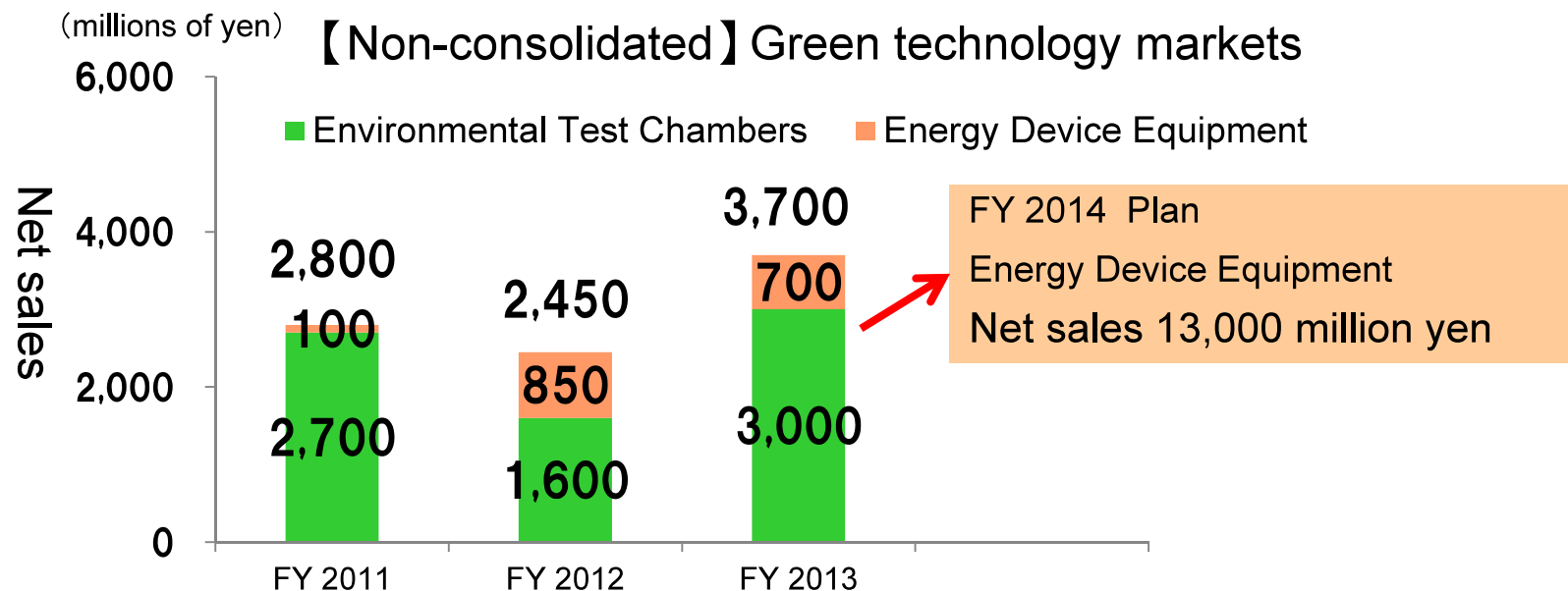
Automation using state-of-the-art  
production facilities and production  
technology

## 2. Expand the scope of business by making full entry into the “Food and Drug markets” in addition to the green technology market

### Status of the green technology markets

- R&D investments continue in Japan and overseas
- Environmental test chambers are performing strongly, but specialized energy devices equipment are struggling

Focus on increasing sales of energy devices equipment



## 2. Expand the scope of business by making full entry into the “Food and Drug markets” in addition to the green technology market

### Green technology market

- Increase sales of energy devices equipment
  - Expand product range for secondary batteries for automobiles
  - Develop lineup of safety testing equipment
  - Utilize Energy Device Environmental Test Center

**NEW**



**External short-circuit testing equipment**

**NEW, First in the world !**

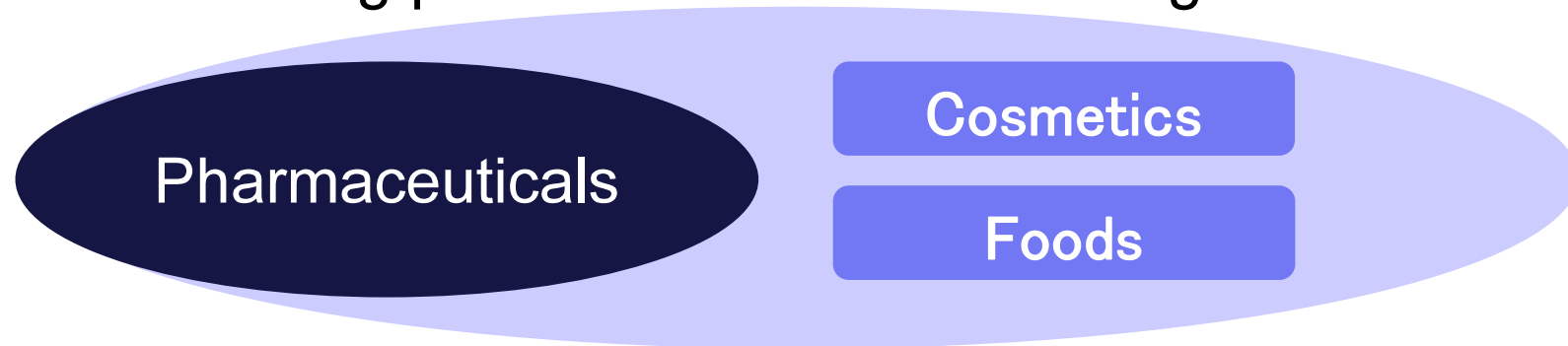


**Energy Device Environmental Test Center**

## 2. Expand the scope of business by making full entry into the “Food and Drug markets” in addition to the green technology market

### Food and Drug markets

Expand sales as a result of new products and develop existing products for “Food and Drug markets”



**Stability Test Chamber  
(800L)**

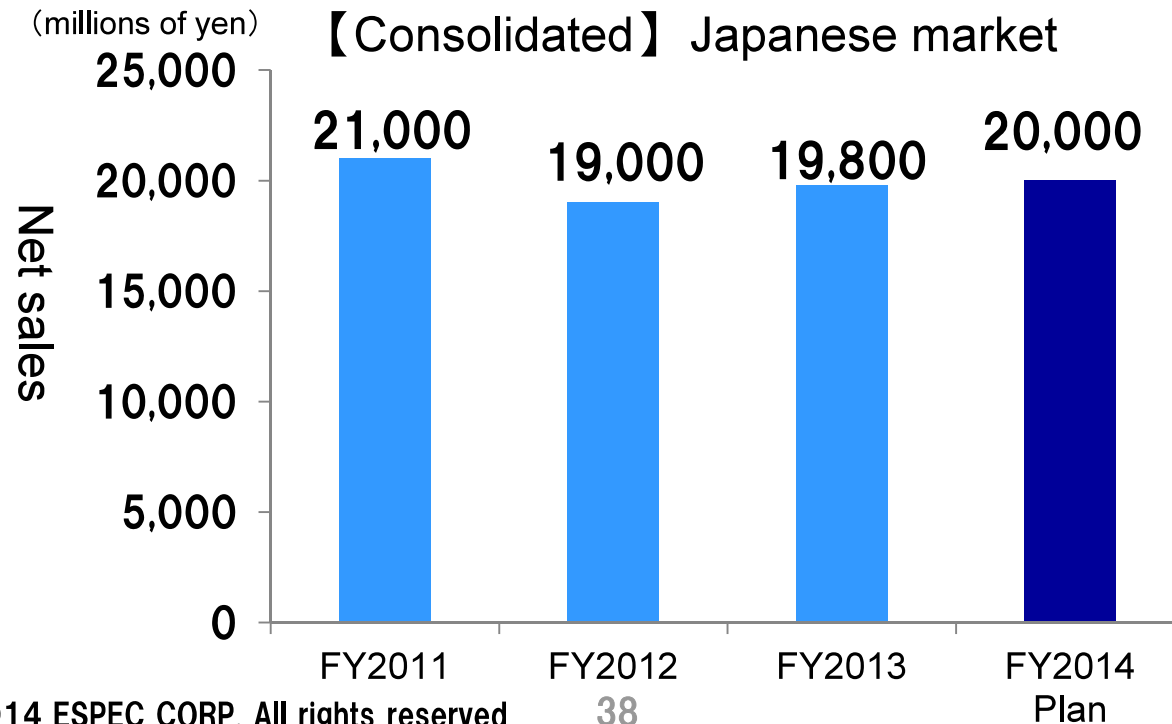


**Walk-in Stability Test Chamber**

### 3. Win to survive in the domestic environmental testing business

#### Status of the Japanese market

- A cautious approach to investment remains even though capital investment is forecast to pick up
- Expansion of demand for customized products supported by state-of-the-art technological development such as eco cars
- Original service proposals
- Expand sales of customized products



### 3. Win to survive in the domestic environmental testing business

Strengthen competitiveness through original service proposals

**NEW**

**ESPEC ONLINE SUPPORT**

Increase sales of standard products and expand scope of customized products

**NEW**



Bench-Top Type Temperature & Humidity Chamber



Temperature & Humidity Chamber "Platinous J series"



Customized products (Walk-In Type Temperature & Humidity Chamber)

Quality is more than a word

ESPEC



These materials contain forward-looking statements, including the Company's present plans and forecasts of performance, that reflect the Company's plans and forecasts based on the information presently available. These forward-looking statements are not guarantees of future performance, and plans, forecasts, and performance are subject to change depending on future conditions and various other factors.

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Corporate Communication Department

Natsuko Okawa

Corporate Communication Department

ESPEC

Reference



# History of Environmental Test


## What is Environmental Test

Test to analyze and evaluate effects of environmental factors such as temperature, humidity, pressure, and light on various industrial products like electronic components in order to ensure product quality.


<1950s>  
The environmental test was JIS-standardized in Japan for consumer products.



<1970s–1990s>  
“Reliability” and “quality control” became important issues in product development. Demand increased dramatically due to a rapid shift toward computerization and the use of electronic components.



<Today>  
Demand has been growing in new energy sectors such as secondary batteries and solar batteries.

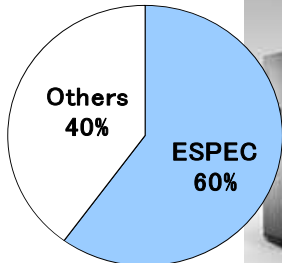


Japan's First Environmental Test Chamber



Low temperature & humidity chamber "Lucifer" (1961)

To Domestic Market Share No.1



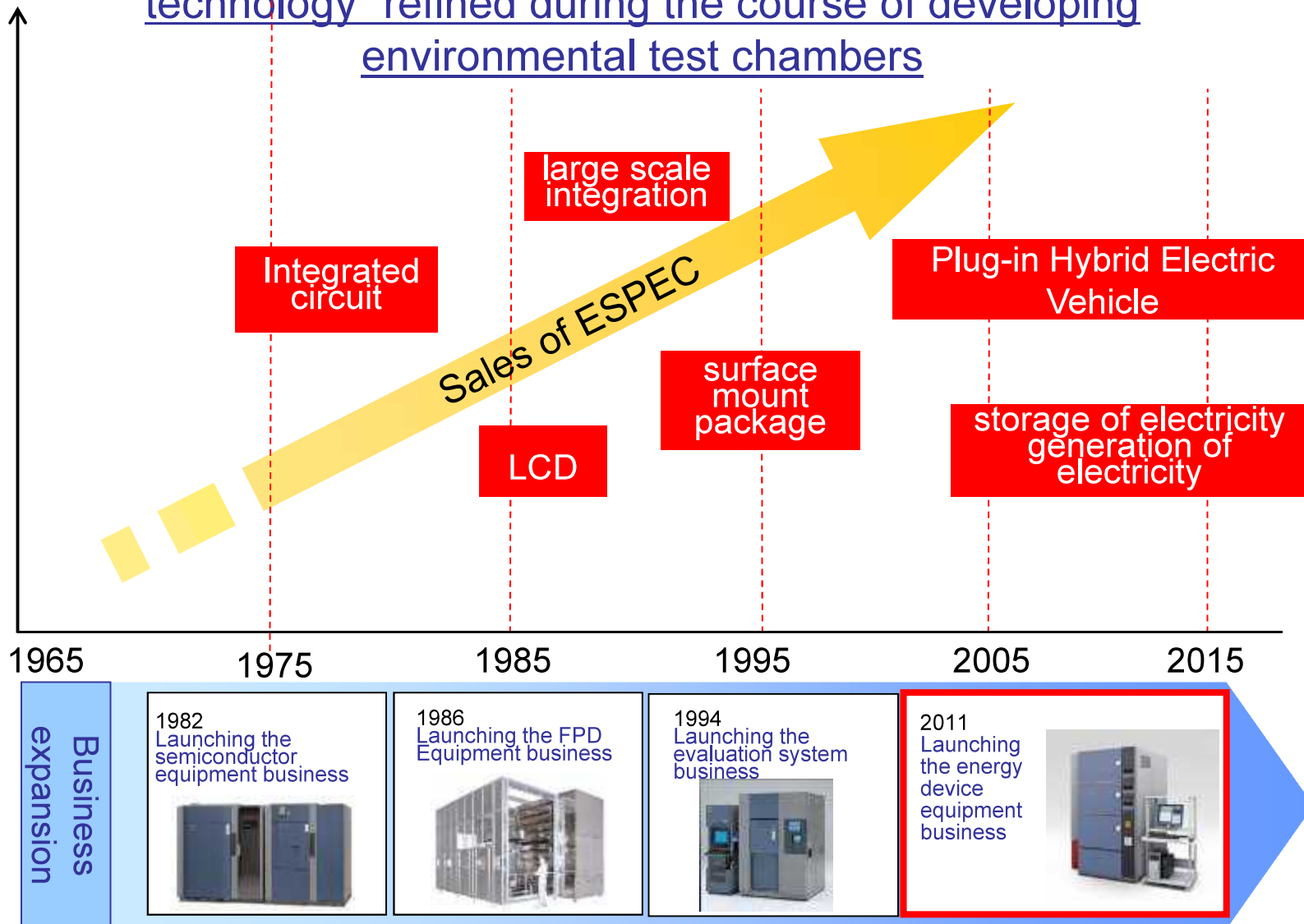
※Our presumption (2012)



[NEW ] Temperature & humidity chamber "Platinous J series"

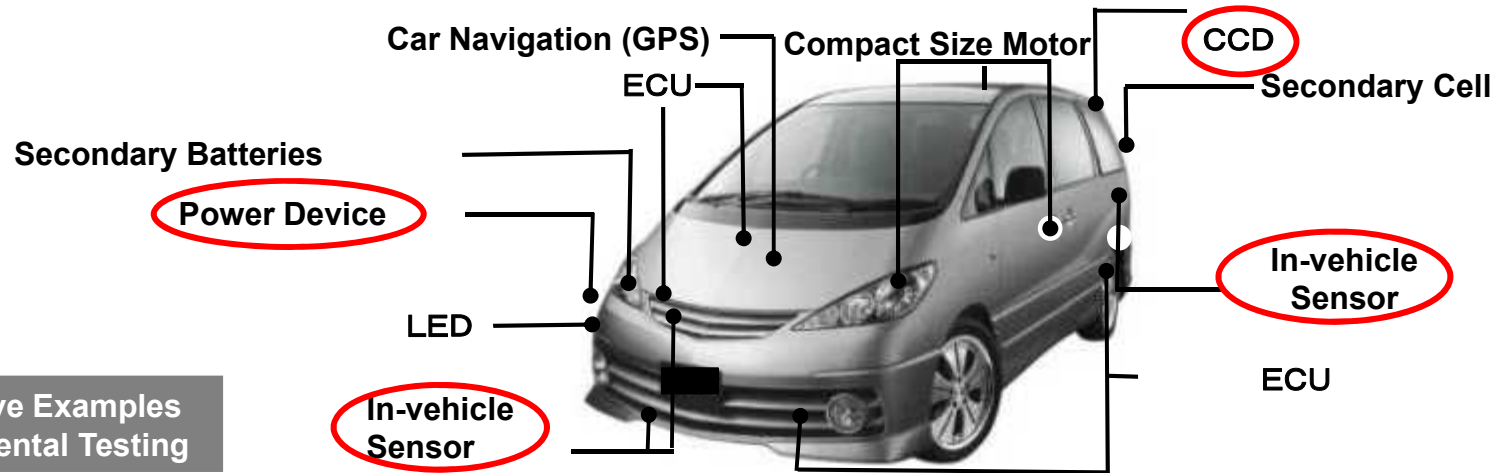
# Transition in Business

Expanding business based on the “environmental creation technology” refined during the course of developing environmental test chambers






# [Equipment Business]

## Usage Case with Environmental Test Chambers



Representative Examples for Environmental Testing

Device	Process/Test Condition		Our Products
<b>【Power Device】</b> 	Inspection	■ Thermal shock test: $-40^{\circ}\text{C} \leftrightarrow +125^{\circ}\text{C}$	Thermal shock chamber
		■ High temperature exposure: $+175^{\circ}\text{C}$ 、 $+85^{\circ}\text{C}$	(Compact size) Oven
		■ Burn-in test	Burn-in chamber
<b>【In-vehicle Sensor】</b> 	Inspection	■ Temperature cycle test of printed circuit board: $-40^{\circ}\text{C} \leftrightarrow +110^{\circ}\text{C}$	Temperature & humidity chamber (Platinous) /Oven
		■ Temperature characteristic test after soldering: Linear change between $-30^{\circ}\text{C}$ and $+85^{\circ}\text{C}$	Burn-in chamber, Rapid-rate thermal cycle chamber
	Evaluation	■ Thermal shock test : $-30^{\circ}\text{C} \leftrightarrow \text{RT} \leftrightarrow +80^{\circ}\text{C}$ 、 $-55^{\circ}\text{C} \leftrightarrow +155^{\circ}\text{C}$	Thermal shock chamber
<b>【CCD/CMOS】</b> 	Production	■ Diffusion Test: $+150^{\circ}\text{C}$	Compact size Oven
		■ Drying after cleaning: $+85^{\circ}\text{C}$	Clean Oven
	Evaluation	■ Screening: $+85^{\circ}\text{C}$	Temperature chamber (Platinous) / Burn-in chamber
	Inspection	■ Temperature and humidity test: $+85^{\circ}\text{C} / +85\% \text{rh}$ 、 $+60^{\circ}\text{C} / 90\% \text{rh}$	Temperature & humidity chamber (Platinous)
		■ Acceleration test : $+120^{\circ}\text{C} / 100\% \text{rh}$	HAST chamber
	■ Thermal shock test : $-40^{\circ}\text{C} \leftrightarrow +125^{\circ}\text{C}$ 、 $-20^{\circ}\text{C} \leftrightarrow +85^{\circ}\text{C}$	Thermal shock chamber	

# [Equipment Business] Introduction of New Products

Release Date	Name of product	Features
2013/11	Bench-Top Type Temperature (& Humidity) Chamber	<ul style="list-style-type: none"> <li>• Ease of system configuration</li> <li>• Enhanced network-based functions</li> </ul>
2012/12	Advanced Battery Tester Enhance the product lineup	<ul style="list-style-type: none"> <li>• Charge-discharge evaluation systems for Secondary batteries</li> <li>• Increasing test processing volume and test current</li> </ul>
2012/5	Vacuum Oven	<ul style="list-style-type: none"> <li>• Saving energy up to 40%</li> <li>• Ease of customization</li> </ul>
2012/5	Stability test chamber	<ul style="list-style-type: none"> <li>• (First in the industry) <math>\pm 2^{\circ} \text{C} \pm 5\%</math> guarantee for the temperature/humidity settings</li> </ul>
2012/3	Temperature ( & Humidity ) Chamber Platinous J Series Addition of 6 type	<ul style="list-style-type: none"> <li>• Full lineup</li> </ul>
2011/11	Thermal Shock Chamber TSA Series EH Type	<ul style="list-style-type: none"> <li>• Saving energy up to 50%</li> <li>• Increasing the reliability of refrigeration circuits</li> </ul>
2011/10	Temperature ( & Humidity ) Chamber Platinous J Series	<ul style="list-style-type: none"> <li>• Saving energy up to 70%</li> <li>• Ease of customization</li> <li>• Extensibility of functions (e.g., telecommunications networks)</li> </ul>
2010/11	Walk in Type Temperature ( & Humidity ) Chamber E Series	<ul style="list-style-type: none"> <li>• Saving energy up to 60%</li> </ul>
2010/9	Thermal Shock Chamber TSA Series E Type	<ul style="list-style-type: none"> <li>• Saving energy up to 37%</li> </ul>

## [Equipment Business] TOPICS

The Platinous J series temperature (& humidity) chambers won the 33rd Superior Energy Conserving Machinery Award, following the Good Design Award 2012!

The J series won the Japan Machinery Federation's President Award for Superior Energy Conserving Machinery Award at the 33rd Awards Ceremony, following the Good Design Award 2012.

The J series was highly evaluated for its various environmental features, including energy conservation, CFC-free design, and low-noise and low-vibration capability.



Superior Energy Conserving Machinery

**Japan Machinery Federation's  
President Award**

Fiscal year 2012,  
Japan Machinery Federation

\* Superior Energy Conserving Machinery Award

Organized by the Japan Machinery Federation, this annual event has been held since fiscal year 1980.

# [Equipment Business]

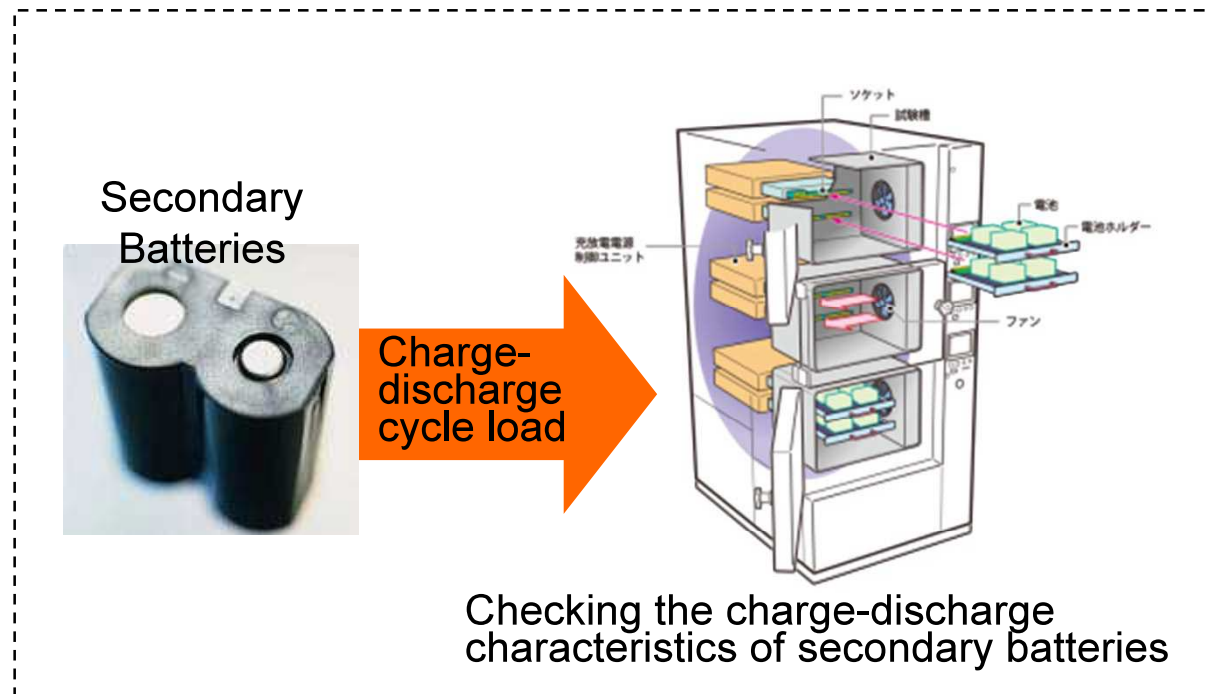
## Usage Case with Energy Device Equipment

### Charge-discharge Cycle Evaluation Equipment

Equipment for ensuring the reliability and safety of lithium-ion secondary batteries for next-generation vehicles (e.g., hybrid and electric vehicles)



Charge-discharge Cycle Evaluation Equipment



Evaluating the performance and life of secondary batteries



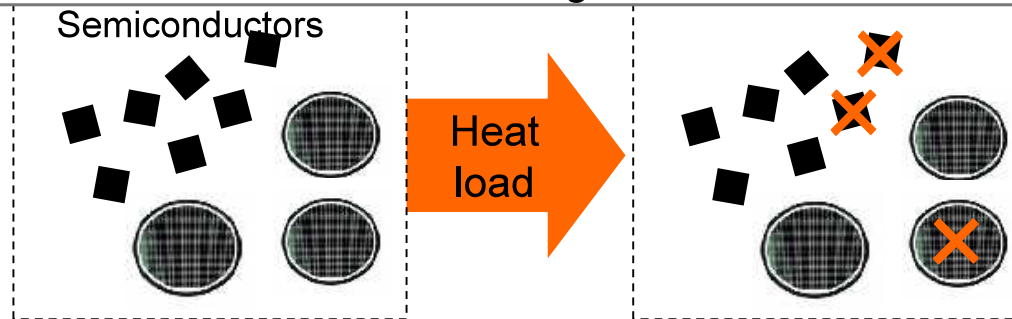
# [Equipment Business] Usage Case with Semiconductor Equipment

## Screening

Eliminate defective products to maintain initial-period quality at the final inspection stage of semiconductor device manufacturing



Burn-in chamber



Elimination of latent early failures

## Reliability Evaluation

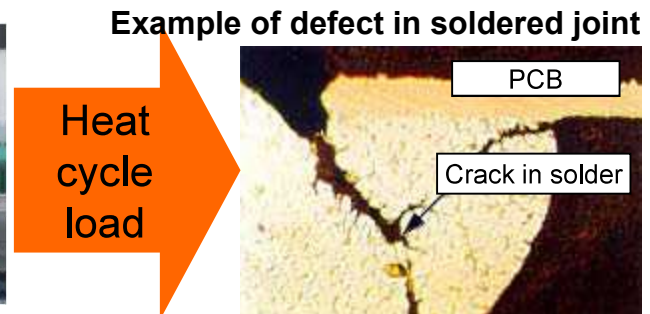
Used to evaluate basic failure patterns to ensure reliability in the development of new technologies



Conductor resistance evaluation system

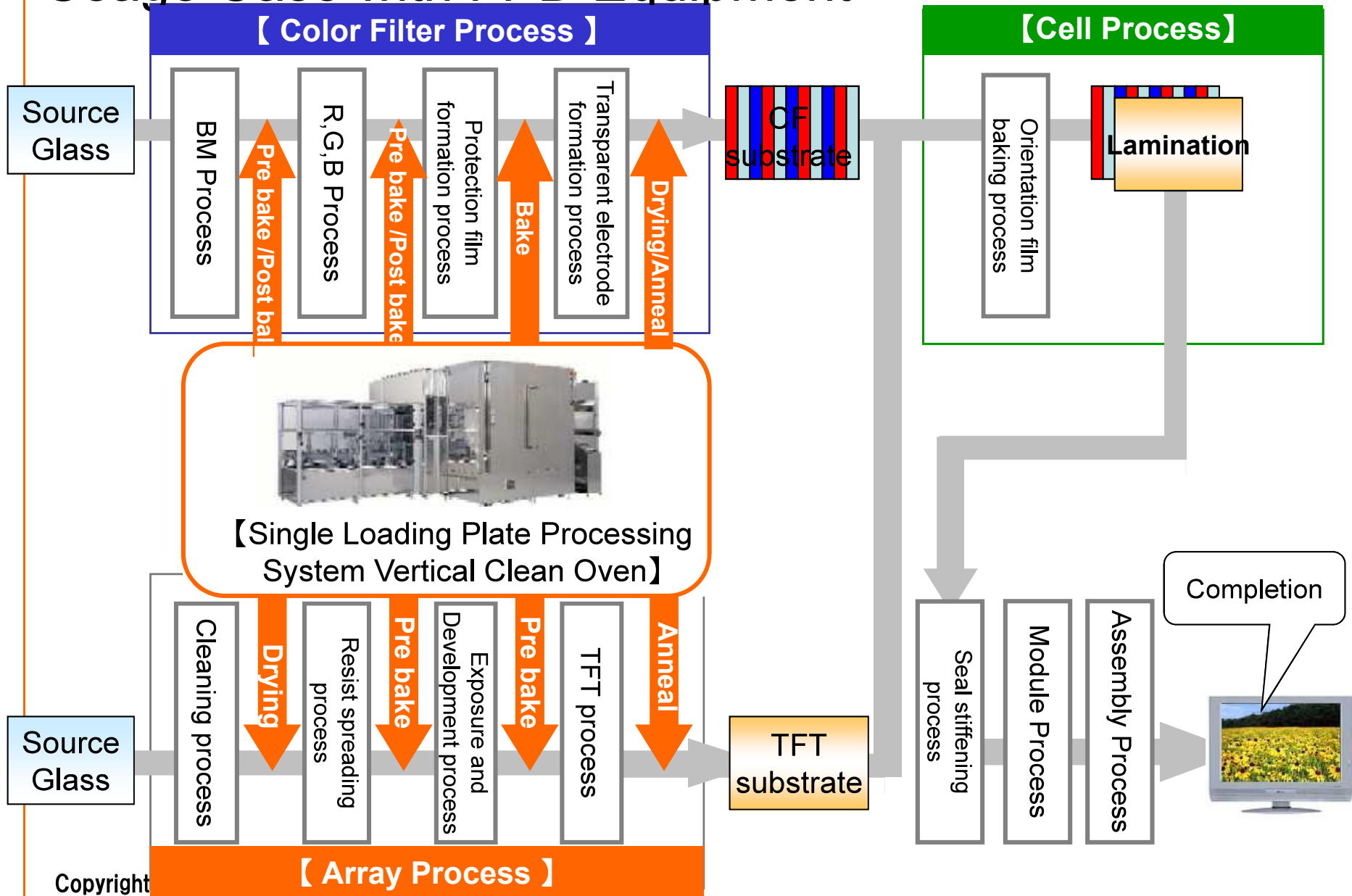


Electrical evaluation of reliability of joints in electronic parts



Example of defect in soldered joint

# [Equipment Business] Usage Case with FPD Equipment



# [Service Business]

## After-sales Service and Engineering

Preventive maintenance of products, maintenance service, and the upgrading/improvement and installation/relocation of products

- Speedy response via one of the most extensive networks in Japan
- Launching new services by utilizing the network function mounted in the equipment
- Extending support through a full-fledged global framework, with distributors located in many countries

## Commissioned Tests and Facility Rentals

Commissioning of testing, analysis, and evaluation; consulting; equipment rental; sales of used products; calibration of test equipment, etc.

- Meeting new test needs whenever they arise
  - Newly built the industry-first Energy Device Environmental Test Center (Exclusively for secondary batteries, power semiconductors, and solar batteries)
  - Introducing new products (e.g., energy-saving models) on an ongoing basis
- The company has four commissioned test centers in Japan (Utsunomiya, Toyota, Kariya and Kobe).
  - These centers are IECQ-approved independent testing laboratories that meet ISO/IEC17025 standards.
  - The centers are also recognized as official calibration facilities under the Japan Calibration Service System (JCSS).



**Energy Device  
Environmental Test Center**

# [Service Business] TOPICS

The first service of this kind in the world!  
ESPEC ONLINE SUPPORT started in November 2013.

After-sales service calls:

from customers to the  
manufacturer



breaking conventional wisdom

from the manufacturer to  
customers



Customers



ESPEC

# [Service Business] TOPICS

The Energy Device Environmental Test Center was established with the latest “first-in-the-world” equipment developed in-house.

In November 2013, the test center was established at the Utsunomiya Test Center. This commissioned test center specializes in reliability and safety testing of energy devices. (energy devices: secondary batteries, power semiconductors, and solar batteries)

## Examples of equipment introduced



**External short-circuit testing equipment**

Capable of handling up to 24 kA current  
(the first in the world)



**Nail penetration/crush testing equipment**

Capable of handling cells and battery packs

# [Other Business]

## Environmental Engineering Business

### Environmental Engineering Business

#### ■ Reforestation (Tree planting)

Recovery of local forest by selecting species and planting out seedlings using potential natural vegetation data.



#### ■ Waterfront biotope restoration

Reconstruction of natural environment, development of vegetative revetments, and water quality improvement using aquatic plants.



#### ■ Urban greening

Provision of roof and wall greening systems that use moss to effectively alleviate heat island effect.

### Plant factory

Provision of various cultivation environments employing advanced environmental control technologies to control light, temperature, humidity, carbon dioxide, etc.



Container plant factory



Phyto-toron

## [Other Business] TOPICS

Toward the reconstruction of areas affected by the earthquake, Kawauchi Highlands Agricultural Plant Growth Facility started operation in Kawauchi Village, Fukushima Prefecture.

The plant growth facility (100% artificial lighting type) was delivered by ESPEC MIC CORP. in collaboration with other manufacturers. Production of vegetables started to revitalize agriculture and create jobs in the disaster-stricken area.

