

DEGREE CELSIUS

Issue 5 - Nov 2008

THE NEWSLETTER FROM DAIKIN REEFER

# saving power

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# Meet the Daikin European service team

Welcome to this fifth edition of Degree C. In this issue we have news on the latest Daikin Temperature Management System (DTMS2) and highlight the power savings it can bring to new and existing reefer units. We also look at some interesting technical features of the DAIKIN reefer, including our unique Automatic Pump-Down system and the container communication

*It is our goal to give immediate service and technical assistance to all of our customers and dealers.*

and diagnostic tool DCCS (Daikin Container Communication System).

Further, you will be updated about our new factory in China and an interesting test done with DAIKIN's ZEFFLE heat reflective paint which shows just how effective it is at minimising solar gain, reducing

surface temperatures and ultimately reducing power demand from cooling systems.

I joined DAIKIN in 2002, when DAIKIN opened its first service and engineering office in Rotterdam, covering the whole of Europe, including Western Russia, Middle East and Africa.

In the past few years, the service network has expanded rapidly and the Rotterdam team has grown too. Our three-strong team offers 24-hour availability for any technical assistance, together with training seminars, special technical sessions and 'Touch & Feel' (T&F) demonstrations for people who are not familiar with the Daikin reefer. You can read more about it in this issue.

It is our goal to give immediate service and technical assistance to all of our customers and dealers. We are also continuously improving and expanding our service network to ensure that enough parts are available in each region.



**Our welcome for this issue comes from Arjan Bezemer, After Sales Service Manager of the Daikin European Service Team in Rotterdam.**

## Contact

Feel free to contact us whenever you require information or assistance:

**Office telephone: +31 10 2862090**

**Arjan Bezemer**

After Sales Service Manager  
arjan.bezemer@daikinreefer.com

**Richard Boshuijer**

After Sales Service Engineer  
richard.boshuijer@daikinreefer.com

**Ronald Van Andel**

After Sales Service Engineer  
ronald.vanandel@daikinreefer.com



**The Rotterdam service team at work. From left to right Ronald Van Andel, Arjan Bezemer, Richard Boshuijer.**



# Saving power

DTMS software brings benefits to more customers

Daikin continues to develop the Daikin Temperature Management System (DTMS) software solution to reduce energy consumption and protect the environment.

Reducing energy costs remains an ongoing priority for us at Daikin and we were the first manufacturer to develop a power-saving software solution for reefer units back in 2005.

*Over 50% of Daikin units worldwide are now saving power with DTMS*

We are still the only manufacturer to have developed our own power-reducing software that can be retro-fitted across all our existing scroll machines. This shows our dedication in providing continued support to both existing and new customers.

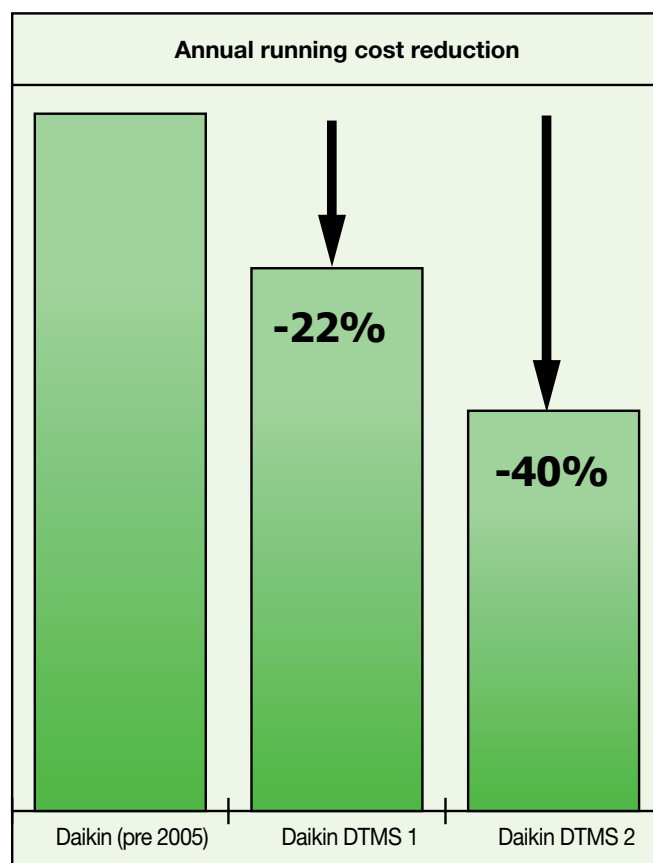
Confidence in our DTMS

products has been reflected by the successful up-take within the industry, with over 50% of Daikin units worldwide now operating with DTMS.

Due to our commitment to ongoing software development, customers using Daikin can be assured that their older machines can compete with the latest machines in the market, providing high performance and low power consumption.

**Significant power savings are possible with the latest DTMS.**

**Comparison assumes a 60% frozen and 40% chilled cargo.**



# October opening

## for new Chinese factory

Daikin's newest Chinese container refrigeration production opens next door to existing Daikin compressor factory to ensure best possible quality and delivery times

**D**aikin is proud to announce the opening in October this year of its new Chinese production facility for container refrigeration units in Suzhou, China. Located next door to the existing Daikin Device (Suzhou)

Co Ltd (DDS) compressor factory, the new company will operate under the name Daikin Refrigeration (Suzhou) Co Ltd or DRS.

As previously reported, DDS will now be creating its own dedicated

production line to manufacture and provide scroll compressors direct to DRS. The proximity of the two facilities will ensure best possible delivery times and highest quality control from in-house production.



Pilot unit with DRS Staff in front of DRS main entrance. In the front row, Mr Sawai, Executive officer of Refrigeration Division Daikin Ind (left) and Mr Murakami (right).



Mr Murakami at the new Daikin factory in China alongside the first pilot unit.

*Dear Daikin customer,*

*I am delighted to announce that our new factory has been opened and issue a warm invitation to come and visit our brand new facility in Suzhou!*

*Our slogan at DRS is “追求卓越品质 缔造世界品牌, which means “Pursue superior quality and create a world class product.” Here at DRS, we have a united effort to produce the highest quality equipment for the world container refrigeration industry.*

*Over the past months, the development process for DRS has proceeded smoothly and on schedule, including the line installation, examination, trial production and full quality audit.*

*We look forward to serving you in the months and years to come.*

**Takatoshi Murakami**  
**Representative Chairman**  
**Daikin Refrigeration Co Ltd (DRS)**

**About Takatoshi Murakami:**  
Takatoshi Murakami has worked for Daikin for 23 years, first as Production Engineer and then as Chief Engineer for industrial method production line development of container refrigeration units. Mr Murakami acted as sub leader of the Chinese production project and now works with 300 staff at Daikin Refrigeration Suzhou Co Ltd as Representative Chairman.



# Daikin welcomes visitors to **Intermodal 2008**

Visit us at **stand A48** to find out more the opening of our new factory in Suzhou and the latest version of the Daikin Temperature Management System.

Once again, Daikin is exhibiting at the Intermodal exhibition in Europe, from 2-4 December in Hamburg, Germany. We invite all customers attending the show to

*Daikin visitor numbers double at Intermodal South America this year*

come and visit us at Stand A48.

Daikin staff from around the world will be on hand to discuss your needs and highlight our latest developments, including our new factory in Suzhou, China and the latest version of the Daikin Temperature Management

System (DTMS2), that enables users of new and existing reefer machines to reduce power consumption and CO<sub>2</sub> emissions.

Pre-registration as a visitor to Intermodal is free of charge.

**Intermodal 2008 details:  
Hamburg Messe, Hamburg,  
Germany  
2-4 December 2008  
[www.intermodal-events.com](http://www.intermodal-events.com)**

## **Intermodal 2008 South America**

For the second year running, Daikin exhibited at Intermodal South America, held in Sao Paulo, Brazil in April this year. Representatives from 83 companies visited our stand including both shipping lines and leasing companies.

Visitor numbers grew by more than 100% compared with 2007, reflecting the success of Daikin's campaign to increase awareness of our role in supporting the important Latin American container trades in perishable and frozen products.

**Intermodal South America 2009:  
14-16 April 2009  
Transamerica Expo Center  
Sao Paulo, Brazil  
<http://intermodal.com.br>**



ZEFFLE reflective paint from Daikin achieves drops in surface temperature of up to 20°C.

# Staying cool

## with Daikin's heat shielding paint

ZEFFLE high performance coatings enable significant energy savings to be achieved, cutting running costs and reducing CO<sub>2</sub> emissions.

**Z**EFFLE is a paint developed by Daikin's Chemical Division using pigments with the highest reflection rate to sunlight. It functions as an external coating which blocks heat penetration with a highly reflective surface achieving drops in surface temperature of 10–20°C.

### *Air conditioning use was cut by nearly half*

In the shipping industry ZEFFLE is being used successfully to bring savings to shipping lines.

Recent tests were carried out by MOL (Mitsui OSK Lines) by applying ZEFFLE coating to an 800m<sup>2</sup> area

on the deck of their passenger ferry Sunflower Gold. They then monitored surface temperatures and below-deck temperatures in the accommodation quarters below and compared their findings to their sister vessel Sunflower Pearl with the standard marine deck coating.

MOL's test results showed a 5.5°C cooling effect, meaning their air conditioning use was cut by nearly half.

In addition, they said: "That translates into an annual reduction of 8.9 tonnes of CO<sub>2</sub> emissions and a saving of about 2.2 tonnes of oil, just from using heat shielding paint on 800m<sup>2</sup> of the deck covering the crew quarters."

#### **For more information contact**

Daikin Industries Ltd  
Chemical Division  
Coating Business Department

Yuusuke Hashizume  
Tel: +81 (0)6-6374-9312 (Osaka)  
Yuusuke.hashizume@daikin.co.jp

Morio Mizuguchi  
Tel: +81 (0)3-6716-0432 (Tokyo)  
morio.mizuguchi@daikin.co.jp

In a bid to reduce fuel costs further they are in discussion with Daikin to roll out the use of heat shielding paint across their ferries, cruise ships, and car carriers.

*That translates into an annual reduction of 8.9 tonnes of CO<sub>2</sub>*

The main benefits of ZEFFLE include:

- Reduce power demand for air conditioning
- Reduce CO<sub>2</sub> emission
- Avoid deterioration of painted surface

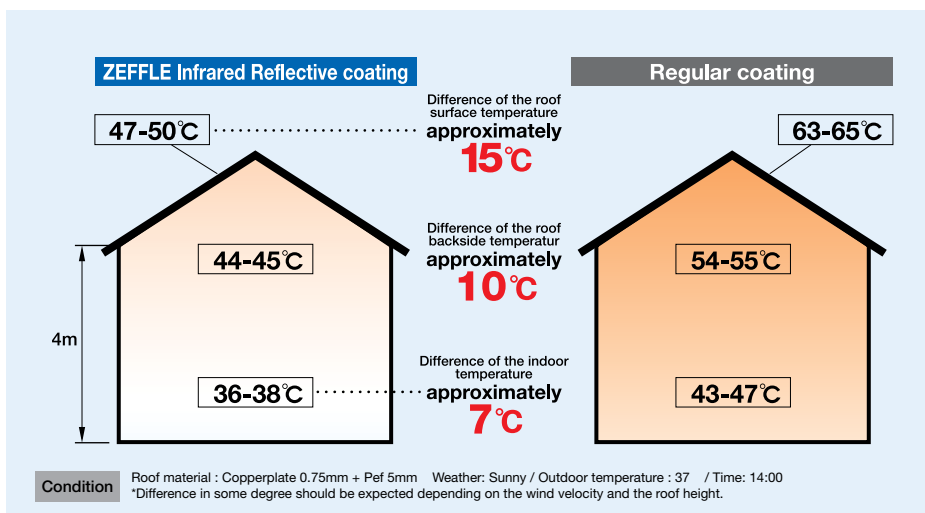
ZEFFLE has other applications, improving working and storage conditions for factories, warehouses and ships. It can also be used on tanks to reduce evaporation in oil and chemical tank and tankers and is used on roofs and walls of buildings, road surfaces, and cars etc. It also reduces heat stretch in certain materials such as aluminium etc.

	General Coating	White Zeffle Reflective Coating
Roof Surface Temperature	Maximum: 74.6 °C	Maximum: 44.4 °C
Room Temperature	Maximum: 40.5 °C	Maximum: 35.7 °C

#### Temperature reduction effect

	Estimated Reduction of Environmental Load
Area: 800m <sup>2</sup> Term: 6/18 ~ 8/20	Energy cut for air conditioners: 47.7% Yearly CO <sub>2</sub> emission reduction: 8.9t/year (Bunker C conversion: Approx.2.2t/year)

#### Energy saving effect



Performance comparison between ZEFFLE coating and regular coating.

## QUEST for energy savings

To provide a full range of power saving options to our customers, Daikin are now licensed to supply QUEST for reefer containers.

QUEST (Quality and Energy Efficiency in Storage and Transport of Agro-materials) was developed by A&F Technology between 1998 and 2005. This project was led by Wageningen University supported by a grant from the Dutch Economy Ecology, Technology Programme (EET).

According to A&F Technology extensive product quality research was performed to find and check the QUEST settings. Tests have shown energy savings of up to 50% are possible.

Daikin will be developing, under license, new software to provide this and will be available in 2009 for both their new and existing machines.

There will be more news of when QUEST will be made available in the next issue of *Degree Celsius*.





DCCS provides easy data transfer between the reefer unit and a computer to view trip data and detailed operational information.

# Spotlight on

## Daikin Container Communication System (DCCS)

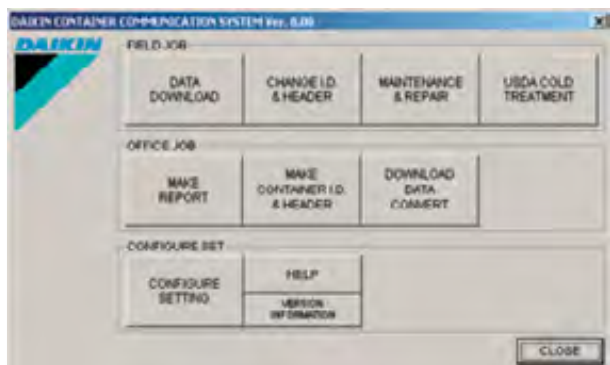
In the first of our spotlight features, we take a look at the Daikin Container Communication System (DCCS) for the Daikin LXE10E scroll compressor unit.

**D**aikin Container Communication System (DCCS) is the software that provides communication between the reefer unit and a PC or laptop computer. Service engineers or anyone authorized by our customer can simply download the software from the Daikin website for free.

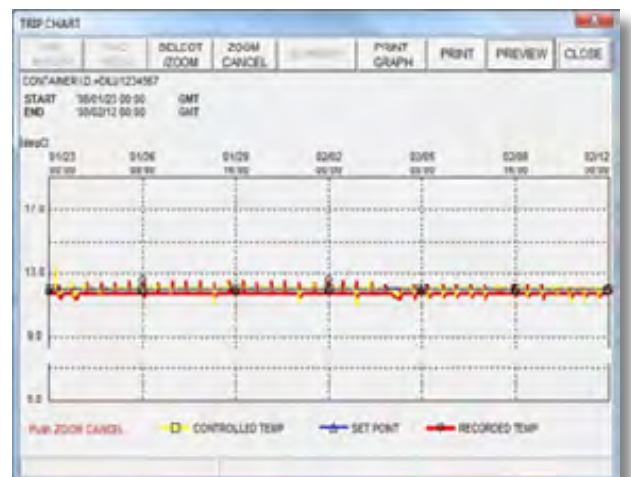
Once installed, DCCS enables users to hook their laptop up to the Daikin reefer Unit to easily view and download trip data, create trip data charts and view detailed live reefer unit operating conditions.

### Start-up

The start-up screen is your main menu where you can choose which function of DCCS you want to use. The two most commonly accessed features from here are Data Download, Make a Report, or Maintenance and Repair for a live diagnostic check.



Access commonly used functions from start-up.



Download trip data for any chosen date range.



# Spotlight on

## Automatic Pump-Down

In this second spotlight feature, we look at the unique Automatic Pump-Down Function of the Daikin LXE10E scroll compressor unit.

The Daikin unit is the only reefer machine currently on the market to provide an automatic Pump-Down function.

### What is Pump-Down?

We developed Automatic Pump-Down to isolate the refrigerant in one part of the system. The purpose of this is to allow repairs and maintenance to be carried out on the system without loss of refrigerant, for example, when replacing components such as the dryer.

### How does Automatic Pump-Down work?

The user can just select the option via the controller. When this is selected, the refrigerant is pumped down and held in this safe area as illustrated in the diagram below so that repairs can be carried out on the rest of the system:

### Automatic Pump-Down benefits

**It's Automatic** – meaning that no extra equipment is needed and the engineer does not have to fit and monitor manifold gauges.

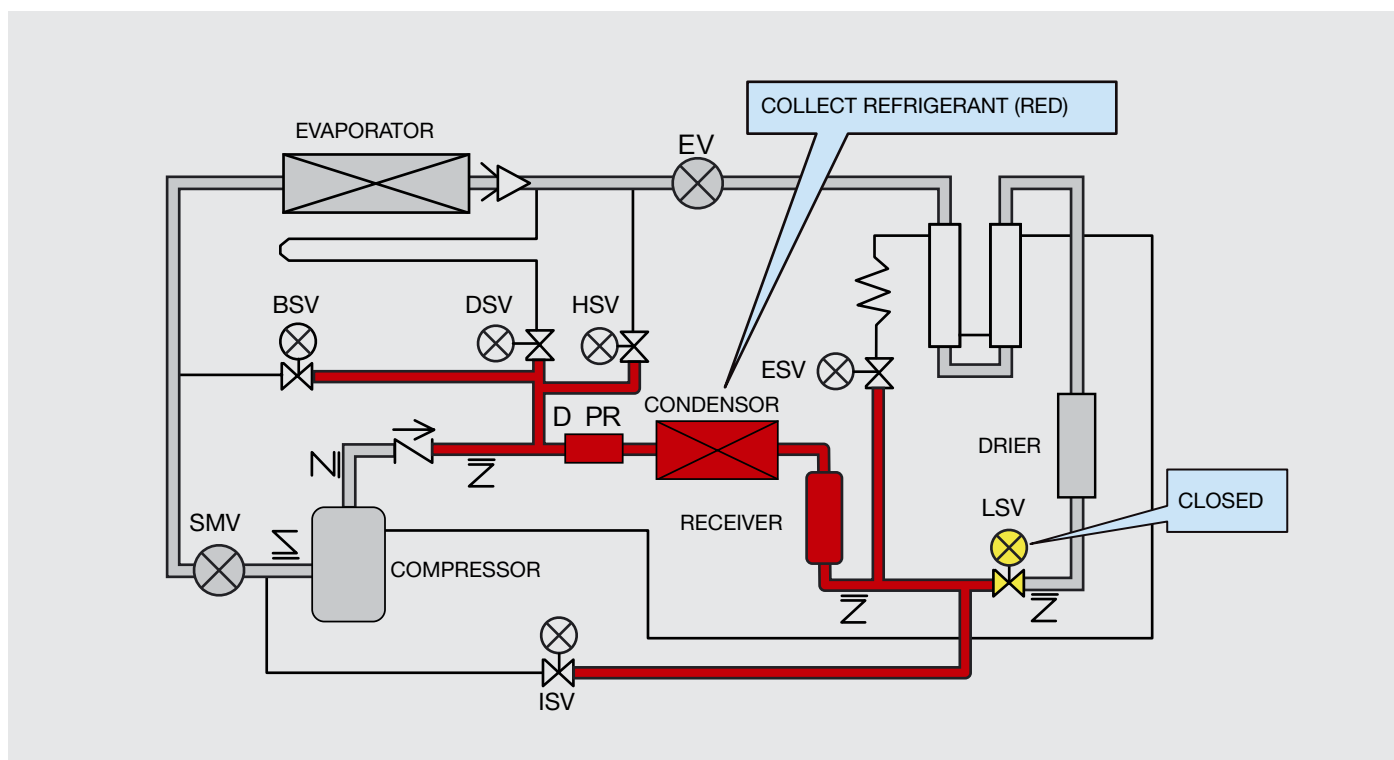
**It's Convenient** – especially on-board vessels where conditions make it difficult for the engineer to use extra tools and equipment.

**It's Quick** – Pump-Down is complete within a matter of minutes and doesn't require supervision.

**It's Easy** – It activates at the touch of a key

**It's Safer** – less chance of refrigerant loss compared to manual process.

**It's Consistent** - same quality of Pump-Down is delivered time after time, avoiding the potential for human error.



Daikin Automatic Pump-Down Function. The refrigerant can be pumped down and held in a safe area so that repairs can be carried out on the rest of the system.



# DAIKIN people



**Mike Shipley – North American Sales Agent**

Tel: +1-650-619-2676  
Fax +1-650-591-2420  
mikeshipley@daikinreefer.com  
1210 Avon Street, Belmont  
CA 94002, USA

Mike Shipley joined the Daikin Team in early 2007 as the North American Sales Agent. He brings 17 years of experience in the marine container industry, most recently as Director of Global Operation for Gateway Container Corporation. "I am very pleased to be working with this growing international team that has forged strong relationships and has aggressively penetrated the market, especially during the last 5 years," says Mike. "I look forward to learning from, and working with, our customers and the Daikin team as we progress forward."



**Arnel Nuñez – After Sales Service Engineer for South & Central America**

Tel: +598 94 251 012  
Juncal 1378 Of. 406  
Montevideo, 11000  
Uruguay

Arnel Nuñez joined Daikin's After Sales department in Montevideo, Uruguay in September 2007. He previously worked for the local Maersk repair company for more than 6 years, acting first as a reefer technician and later as reefer operations supervisor. For the last 3 years, Arnel was based within the port area in Montevideo, supervising reefer operations, including PTI, repairs, plugging on board and monitoring of reefer units.

Arnel, who studied industrial electrical engineering at the University of Uruguay has very good experience with all brands of reefer machinery, including Daikin units.

At Daikin, his main responsibilities are to assist with service activities, including training seminars, to administer warranties and to provide technical assistance and back up to service agents and customers within South & Central America.



**Ronald van Anandel  
After Sales Service Engineer for Europe, Middle East, and Africa**

Tel : +31(0)10 2862090  
Fax: +31(0)10 2862099  
Mobile: +31(0)6 20648872  
ronald.vanandel@daikinreefer.com

Ronald van Anandel joined Daikin in December 2007 following a 20-year career in the reefer service industry. After finishing his professional education in 1986 Ronald began working in the reefer service sector Smith Holland. He worked for over 10 years in the field repairing all types of units, rising to the position of senior engineer. He then moved to the company's service centre, where he worked for more than 10 years. In this role, he gave instructions to all the outside engineers and advised customers and contacted suppliers.

Ronald says, "After almost a year with Daikin, I am very proud to be working for them. During all these years in refrigeration, I can honestly say that Daikin has high-quality products and now I can work with these products every day. Refrigeration is also a branch with a lot of developments so my job has a great variety. Giving service to our customers and keeping them satisfied is my top priority."



**Mike Ma – After Sales Service Manager, China**

Tel: 86-21-62897118 ext 2102  
Fax: 86-21-62894810  
ma.wei@daikin.net.cn  
1P United Plaza  
1468 Nanjing Road(W)  
Shanghai, China

At the beginning of March 2008, Mike Ma joined the Daikin After-Sale Service team for mainland China. Mike has a master's degree in refrigeration engineering and over 11 years' experience in the container industry. He previously worked for leading reefer container lessor GE Seaco as regional operation and M&R manager, covering mainland China, Hong Kong and Korea. Mike was also involved in establishing GE Seaco's domestic reefer business in China.

Mike says "After sale service is an extremely important element of reefer marketing. Both I and our service contractors in the area will share our customers' sense of urgency and provide quality service!"

# Touch & feel

## seminars going from strength to strength

Launched in 2007, Daikin's 'Touch & Feel' (T&F) seminars have proved to be an outstanding success. Designed for those who are not familiar with Daikin's reefer technology, the T&F seminars give attendees a chance to see a unit up close, learn about key equipment features and discuss practicalities with trained Daikin service staff.

From April-October 2008, Daikin hosted 14 T&F seminars in Asia, Europe and the Americas. We are delighted at the response and thank all those individuals and companies who have so far participated.

Further T&F seminars are planned soon in Turkey and Belgium. Please check the Daikin Reefer website at [www.daikinreefer.com](http://www.daikinreefer.com) for forthcoming dates and locations.

Upcoming T&F Events in:  
Turkey, Antwerp-Belgium, Lisbon-Portugal, Cape Town-South Africa, Barcelona-Spain, Incheon-Korea, Taoyuan-Taiwan and Guayaquil-Ecuador.

Location	Date	Companies attending
<b>Europe</b>		
Lisbon, Portugal	April 2008	3 companies , 6 people
Hamburg, Germany	May 2008	3 companies, 5 people
Rotterdam, Netherlands	May 2008	2 companies, 10 people
Genoa, Italy	May 2008	3 companies, 5 people
Felixstowe, UK	June 2008	7 companies, 25 people
Copenhagen, Denmark	July 2008	5 companies, 6 people
Riga, Latvia	July 2008	1 companies, 1 person
Dublin, Ireland	Sep 2008	3 companies, 4 people
<b>South America</b>		
Sao Paulo, Brazil	April 2008	11 companies, 14 people
Santiago, Chile	July 2008	2 companies, 17 people
San Jose, Costa Rica	July 2008	2 companies, 3 people
Buenos Aires, Argentina	Sep 2008	1 company, 8 people
<b>North America</b>		
Miami, USA	Oct 2008	6 companies, 11 people
Oakland, USA	Sep 2008	3 companies, 7 people
Oakland, USA	Nov 2008	2 companies, 3 people
<b>Russia</b>		
Moscow, Russia	June 2008	2 companies, 2 people
St Petersburg, Russia	June 2008	2 companies, 2 people
<b>Middle East</b>		
Dubai, UAE	Aug 2008	1 company, 9 people
<b>Asia</b>		
Singapore	Apr 2008	6 companies, 12 people
Pusan, South Korea	May 2008	8 companies, 13 people
Tokyo, Japan	Sep 2008	6 companies, 12 people
Hong Kong, China	Oct 2008	12 companies, 16 people
Shanghai, China	Nov 2008	18 companies, 33 people

**Touch & Feel seminar locations and attendees, April-November 2008**

## DAIKIN SALES CONTACTS

### Japan, Taiwan & Korea

Takahisa Kodama  
Tel: +81 (0)3 6716 0420  
[takahisa.kodama@daikin.co.jp](mailto:takahisa.kodama@daikin.co.jp)

### China

Li Bing "Simon"  
Tel: +86 21 628 971 18 ext. 2102  
[li.bing@grp.daikin.co.jp](mailto:li.bing@grp.daikin.co.jp)

### For all other sales in Asia and leasing companies:

Nobuko Fukuda  
Tel: +81(0)3 3497 3961  
[n-fukuda@itochu-metals.co.jp](mailto:n-fukuda@itochu-metals.co.jp)

### For all other enquires:

Eiji Nonaka  
Tel: +81 (0)3 3497 3986  
[e-nonaka@itochu-metals.co.jp](mailto:e-nonaka@itochu-metals.co.jp)

### Latin America & Miami Area

Robert Ferreyra  
Tel: + 598 94 314 476  
[robert.ferreyra@daikinreefer.com](mailto:robert.ferreyra@daikinreefer.com)

### West Coast USA & East Coast USA

Mike Shipley  
Tel: +1 650 619 2676  
[mikeshipley@daikinreefer.com](mailto:mikeshipley@daikinreefer.com)

### Europe, Middle East & Africa

Philip Eastell  
Tel: +44 (0)20 7827 0763  
[eastellp@itochu.co.uk](mailto:eastellp@itochu.co.uk)

