



Energy Efficiency at an Affordable Price

Energy efficiency is certainly a hot topic at the moment and will continue to be as energy prices continue to rise and we see the introduction of the Carbon Tax. For the air conditioning industry we are all working to produce higher EERs and Temperzone believes the balance between cost and efficiency can only be achieved by continual development of our own products.

Energy efficiency is not a hit and miss process. It's an exact refrigeration engineering science. Temperzone understands building an energy efficient design is much more than just adding bigger coils!

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super heat



The Money or the Box?

This has been the voice mail message for Peter Boxall, Sales Engineer from Queensland for a couple years. But the message will have to change shortly as Peter is retiring at the end of the month.



Temperzone New Zealand Really Listens To Its Customers

Rarely do you hear of a company who has not only listened to the feedback but put in place a series of major changes as a result.

HITACHI Inspire the Next modular VRF



Are you ready for the new Hitachi VRF? We are!

Releasing a product as sophisticated as VRF into the Australian market takes much more than just ordering the product range and sorting out a price list.



New Range of Wall Splits from Hitachi

Temperzone is launching a new range of high efficiency Hitachi Wall Splits from mid December 2011. There are new models available in 2.4kW, 3.5kW, 5kW, 6kW, 7kW and 8kW which will replace the entire current product range.



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Its much more than just adding bigger coils.

Energy efficiency is certainly a hot topic at the moment and will continue to be as energy prices continue to rise and we see the introduction of the Carbon Tax. For the air conditioning industry we are all working to produce higher EERs and Temperzone believes the balance between cost and efficiency can only be achieved by continual development of our own products.

Shane McBride from Temperzone commented, "Energy efficiency is not a hit and miss process. It's an exact refrigeration engineering science. Temperzone understands building an energy efficient design is much more than just adding bigger coils!"

We are able to develop high efficiency equipment based on the following principles:

- Sound air conditioning engineering design

principles.

- Ensuring the optimum refrigeration system balance point is met.
- Evaporator and condenser coils are thermodynamically balanced across a wide range of operating conditions.
- Individual components are selected at the required duty points not just at nominal operating conditions and then placed into a balanced system.
- Specifically designed and circuited evaporator and condenser coils, sized to ensure the optimum system operating pressures so as not to artificially increase the electrical input.
- Ensuring the correct refrigerant distribution and velocity with the system.

Energy efficiency is a balancing act. By just increasing coil surface area, as many others do, you reach a point where the system simply becomes financially, physically and thermodynamically impractical.

balance improved efficiency with affordability. So with many of our units the base model is already well above the EER of our competitors, with a range of options that increase the energy efficiency and functionality even further.

Temperzone's approach has always been to

A good example is our new 70kW Rooftop Package Unit.

Unit	Temperzone OPA 700RKTBH
List Price	\$16,250.00 + GST
EER	3.17
Airflow	3700 l/sec @ 310 Pa External Static
Max Airflow	4650 l/sec @ 175 Pa External Static
Evaporator Fan	DWDI Evap Fan.
Condensor Fan	Vari Speed Condenser Fans
Compressors	2 X equal capacity compressors
Refrigerant	R 410A
Ambient	Tested to 50°C ambient
Refrigerant Registration	EEV
Insulation	Polyolefin Foam + Reinforced Aluminium Foil (Closed Cell Foam + Foil Facing)

Its standard specifications are listed below. In this configuration it is already the most energy efficient 70kW Package Units on the market.

Options: Plug Fan, which raises the EER to 3.25, DiGital Scroll Compressor providing 10% to 100% capacity control, Modbus, Bacnet, Lonworks control interface, Economy cycle and 32 Handling configurations. Please note for a full list of options

please refer to downloadable specification sheet [click here](http://www.temperzone.biz) or visit www.temperzone.biz

Temperzone is the Australian market leader in developing and manufacturing energy efficient rooftop package units. Our future direction is to maintain the development of Affordable Energy Efficient equipment across our entire product range.

The Money or the Box?

This has been the voice mail message for Peter Boxall, Sales Engineer from Queensland for a couple years. But the message will have to change shortly as Peter is retiring at the end of the month. During his 37 years in the air conditioning industry Peter has held a number of senior positions for reputable brands in the industry culminating with the last 2 years at Temperzone. Wayne Cormack, fellow Queensland Sales Engineer describes Peter as the 'ultimate gentleman'. Wayne was kind enough to interview Peter for Temperzone News.

Peter first ventured into the air movement industry in April 1974 when a chance arose to join Email's MPD (motor products division) as State Sales Manager. Email was a great Australian company in the day with a vast number of different divisions. When he transferred to Email's ACD (air conditioning division) the rest, as they say, was history – Peter found his niche, prospered and became State Sales Manager. Peter stayed at Email for 25 years before a 4 year stint at Carrier, 6 years at IACS and, saving the best for last, 2 years at Temperzone.

Peter recalled that the first air conditioner he ever sold was a "Kelvinator box window rattler that we put into the Errol Stewarts Acacia Ridge Store (Kelvinator was owned by Email Ltd back then). Things have certainly changed since then."

"Temperzone's strategic alliance with Hitachi is definitely one of the key changes I have seen during my time in the industry. It enhances and compliments the Temperzone range, which is presented to contractors and the industry alike. Another aspect worth mentioning is how Temperzone engineering is continually improving its products for energy efficient solutions for the Australian market, it is really crucial."

As soon as he started, Peter said he realized that Temperzone cared about its employees and he could feel that in the culture within the company. "It puts the company in good stead for the future and I consider them to be industry leaders that are in it for the long haul. There is a mutual respect within the industry for Temperzone products and the brand attracts a positive draw."

When Wayne asked what the biggest asset Peter has learned or acquired over his 35+ years in the



industry, Peter answered easily "Friendships. Developing friendships within the air conditioning fraternity. While the fraternity is small and people move from company to company, you are able to build relationships over long periods of time. I would like to say thank you to the contractors and consultants who have helped me over the years, who have supported me and the companies I worked with. Over the years I have really come to realize that it's not what you know, it's who you know, but the what is still very important."

In terms of the future of the industry, Peter said that "Temperzone will always be there as a major Australian/NZ manufacturer for many years to come, with continual and reliable products being available. I see Temperzone as market leaders with very competitive pricing in all areas."

And in terms of his own future? Peter first plans to spend a couple months with his wife Sandra in Dubai, enjoying Christmas with family. And after that relaxing and enjoying life while exploring his handyman exploits with his family and large clientele of neighbors!!

Queensland Branch Manager, Shane McBride said, "It's amazing, Peter Boxall had the confidence in me some 15 years ago and gave me my first ever job in air conditioning sales as a trainee sales engineer and taught me a lot of what I know now, years later we at Temperzone have had the confidence in Peter Boxall to finish his outstanding career and valuable contribution to the Queensland HVAC Industry with Temperzone."

Thank you does not seem to be enough to say ... what else can you say. Thanks Pete, we all wish you the best for the future.

Temperzone New Zealand Really Listens To Its Customers



It is not unusual for companies to ask their customers to complete surveys asking questions about their customer service. That's nothing new. But rarely do you hear of a company who has not only listened to the feedback but put in place a series of major changes as a result. That is exactly what Temperzone Limited in New Zealand has done. In direct response to the feedback they received from customers, they have made some very major changes to the way they interact with customers and created a strong Customer Service Department.

The feedback Temperzone received was customers wanted to do business with Temperzone, there was high confidence in the product range but they also expressed the desire for a more collaborative relationship and to better understand customers' needs. Fairly confronting stuff, but instead of filing the information and just continuing on, the management met the feedback head on and developed a plan.

One of the first things they did was hire Joanne Iles as a Customer Service Manager. Her role is to specifically manage the service delivery of the Temperzone Customer Service Department. When Temperzone News recently spoke to Joanne, her passion and commitment to improving the customer service was very evident. Jo came on board earlier this year in February and Jo and her team have already had a very big impact.

According to Jo, "It's no longer just about the sales, the aftersales support is also very important. So

we wanted to make sure our customers could get through to us and get a solution to any issue quickly. To be able to do this, we have increased our number of Technical Services Engineers by 50%. These guys have a total combined experience of over 40 years in the industry and they understand the issues that our customers come up against. As well as having the technical knowledge, they also understand the pressures our customers are facing trying to get units up and running quickly. We totally understand that our performance has a direct effect on our customer's performance".

"We have also moved one of the Technical Services Engineers to our One Stop Shop, which is our retail outlet here at the head office. It is a place where customers can come to collect the spare parts or equipment they need. We wanted to provide our customers with really accessible technical support. If any customers coming in have questions, he can help them right away."

And the customers are happy. Several have commented that it is 'Great to have someone here who can help, who understands the products.'

"Another recent initiative is the cross skilling all the Technical Services Engineers so they can all answer questions about any of our products and manufacturers. This will enable them to help the customers when they ring in, because that's when they need the assistance. The Technical Services Engineers handle on average 2,500 calls per month which works out to 125 calls a day! And the One

Stop Shop handles on average 1,700 calls per month which works out to another 85 calls a day, plus customers coming in the front door.”

The initial customer feedback also highlighted the fact that the Warranty process was a bit of a struggle. A core focus for Jo and the management was to change the process and make it easier for customers to work with and more timely.

So with all these changes in place, what is the feedback from their customers saying now?

According to Jo, “we have had some really positive

feedback since we have made the changes. We are being seen by our customers to be more willing to talk about the issues and allocate the required resources to achieve a rapid resolution. The Customer Service Dept has really allowed Temperzone the opportunity to have a greater focus on our Customers.”

“One of the goals is to get resolution for customers in a timely manner. It is really important for our customers to have things sorted quickly so they can get on with their business.”

We are confident it's time for you to try Hitachi VRF from Temperzone.

Releasing a product as sophisticated as VRF into the Australian market takes much more than just ordering the product range and sorting out a price list. We have spent the last 12 months working hard on several levels to ensure we can offer a great VRF product range that you can confidently choose and install in any size project.

To be confident about choosing a VRF brand you need to know the product is of the highest quality, the selection software is up to scratch, the product support is there from specification through to warranty, and that there is a full range of stock and spare parts available nationally.

Temperzone ticks all the boxes!

FEATURES	HITACHI VRF
Modular Condenser	✓
Universal Condenser (2 pipe & 3 pipe)	✓
Wide FCU Range (ducted, cassette, wall, ceiling)	✓
Multi kits & CH Box	✓
Control	✓
Stock	✓
Backup Support	✓
Competative Price	✓
Selection Application	✓

Hitachi – A global player in VRF:

Hitachi is a major corporation with a powerful network that spans the globe. Hitachi has been manufacturing premium quality VRF equipment for over 20 years and is a major VRF supplier around the world. Hitachi has a significant share of the Japanese VRF market. Hitachi manufactures VRF units in Japan, China, Spain and Brazil. The Australian market is supplied from a plant in Shimazu, Japan

that manufacturers thousands of units each year. Temperzone carries the 3rd generation Hitachi Set Free VRF which was launched in Japan less than 12 months ago.

Selection Application:

Temperzone, in partnership with Hitachi, have developed an online selection application specifically for the Australia/NZ market. The sophisticated

selection application has been developed from scratch in Australia and provides a comprehensive basis to select and configure VRF systems of any size. The selection application is web based to allow for continuous product updates and eliminates the need to update software from a CD or download.

The selection application is currently available through the Temperzone Sales team. If you have a VRF project that you would like to run through the application, speak to your Temperzone rep and they will be able to model your project and produce a full report in either word or excel formats.

Training:

Before Temperzone released the VRF product to the wider market, we undertook extensive training of Sales, Service, Support and Warranty staff with the new product range. This process saw Temperzone staff spending time in Japan to train at their facilities as well as Hitachi Technical staff coming

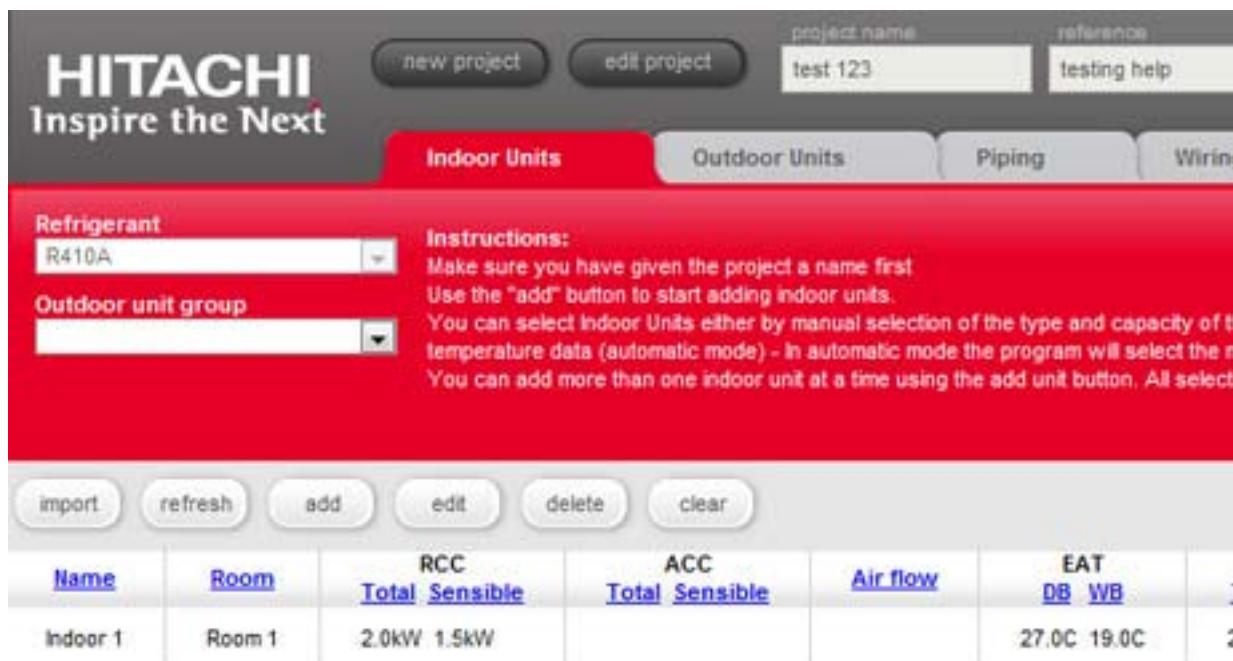
from Japan to run training programs locally.

Stock and Spare Parts:

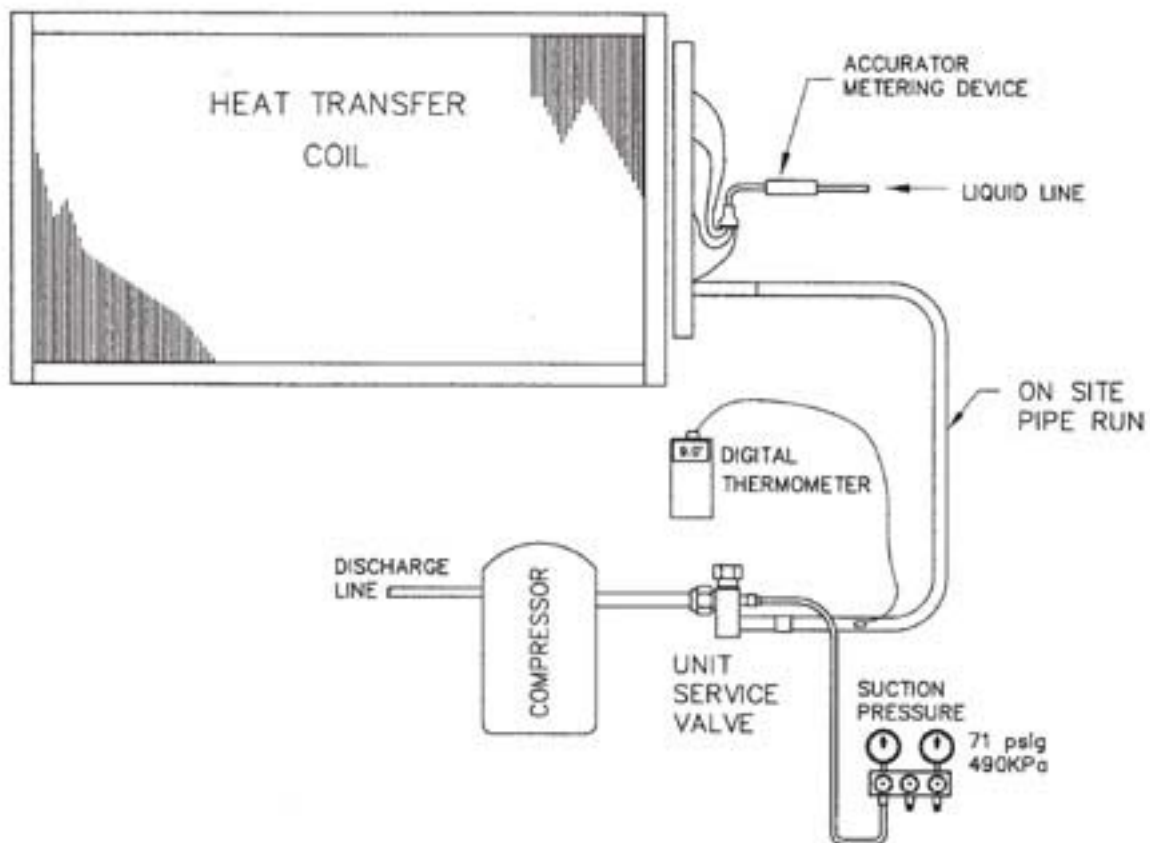
Temperzone has established a comprehensive inventory of both VRF product as well as spare parts which is available through our national warehouse and supply network. We have brought in the entire product range of 40 indoor units and modular condenser units from 8 HP to 54HP, all with appropriate spare parts to match. Product is available in a day or two and spare parts are available next day anywhere in Australia

It's the Temperzone way of doing business:

Temperzone has built its business and reputation on quality product, quality people and quality service. That's why we have taken nearly 12 months to develop the VRF product offering for the Australian market. We have ticked all the boxes and can confidently say it's time for you to try Hitachi VRF.



Understanding Superheat



Ever walked past an old Temperzone unit purring away that was built when Muldoon and Fraser were PM's and thought...they don't make em like that anymore? Truth is nowadays the technology is far superior to that of old. The issue could be to do with setup and understanding of the refrigeration cycle, particularly when it comes to superheat. This article is to help technicians to better understand what superheat is and how simple it is to check, but most importantly, to understand its purpose.

Checking superheat is as easy as adjusting superheat which should be done on all refrigeration systems.

Why is correct superheat so important?

The compressors lifespan!! If the superheat is set right then there is no reason why the compressor won't run for twenty or more years. If it's not set right and is flooding or starving excessively, then expect as little as a year or two before failure.

The compressor needs the correct amount of returning refrigerant to keep its motor windings at the correct temperature and most importantly its oil at an optimum.

High Superheat: (starving)

In this scenario, the compressor will get too hot causing its sump oil to overheat, slowly break down and lose its viscosity (lubricating effect). If you don't have the correct lubricating effect, the compressor bearing will wear and eventually seize.

Low Superheat (flooding)

In this scenario, there is too much refrigerant coming back. Some say that these new scroll compressors can withstand liquid flooding which they can, but it's the oil that can't. What happens is the sump oil becomes diluted with the refrigerant and loses its viscosity (lubricating effect).

If you don't have the correct lubricating effect, the compressor bearing will wear and eventually seize.

Points to note:

1: Bearing failure often gets reported as a winding failure because the resulting locked rotors high current draw can cause the winding to short out. Its not until the compressor is cut open for inspection that you realize the seized bearing caused the winding to blow.

2: Superheat should be checked after the compressor has run continually for at least ten minutes to allow the system refrigerant and oil to settle.

3: The indoor units return air temperature and air-flow should be as close to normal operating conditions as possible as well as the outdoor ambient.

Setting superheat

There is an article on this topic that you can view on our website www.temperzone.biz

If you haven't been onto this site before there is a wealth of information available once you have registered by simply filling out your email address etc. For superheat click on "Technical" then "Application Notices" and then scroll down to "02/02".

Checking and Setting Superheat

It is preferred to set superheat in cooling cycle when the indoor return air temperature is just above set point e.g 23°C plus or minus a couple of degrees. But sometimes this is not possible due to the variable temperatures and conditions during the winter months. So you may have no choice but to set the superheat during a heat cycle (Make sure you revisit the system again in early summer to re-check).

The target superheat temperature is generally 3°C to 6°C (4°C to 6°C for EEV's)

1: Fit your LP gauge to the common suction line port situated between the compressor and the reversing valve.

2: Convert this Low Pressure to temperature using a pressure/temperature conversion chart or the relevant refrigerant temperature scale on your manifold gauge.

3: Measure the same pipes external temperature with an "accurate" digital thermometer.

4: Subtract the converted pressures temperature away from the pipe surface temperature and that's the superheat.

Example 1: If the R410A units low pressure was 110psi (755kpa) and the suction pipe temperature was 12°C then:

110psi (755kpa) converted to temperature is 2°C so we then subtract 2 from the 12° pipe temperature which results in a superheat of 10°C. Indicating in this case it's a little high and requires lowering.

Example 2: If the R22 units low pressure was 55psi (380kpa) and the suction pipe temperature was 4°C then:

55psi (380kpa) converted to temperature is -1°C so the difference between this -1 and the 4° pipe temperature is a superheat of 5°C. Indicating in this case it is OK.

Adjusting superheat

TX Valve

Wind the valve stem OUT to increase or wind it IN to decrease, then wait approx ten minutes for it to settle before rechecking.

Accurators

ADD refrigerant to increase or remove refrigerant to decrease then wait approx ten minutes for the system to settle before rechecking.

EEV

Electronic expansion valves can only be adjusted by changing their internal program parameters which are usually factory set and chances are the problem is lack of system refrigerant or a fault elsewhere.

There are many influences associated with superheat like evaporator airflow, evaporator return & supply air temperatures and condensing temperature. So if you're unsure, don't hesitate to contact your Technical Service Engineers.

Compressor Discharge pipe temperature (hot gas)

The compressor discharge pipe temperature is in direct relationship to the superheat. A ball park figure that I have found (cross reference only) is that

this temperature on a scroll compressor is usually 60°C to mid 70's when the superheat is acceptable and the operating conditions are normal.

As a crude rule of thumb, you will find that if the discharge pipe is cool enough to hold your hand on then you can almost guarantee that the refrigerant is flooding back (0°C superheat). If it's too hot to touch then its superheat is probably too high (starving).

You should be able to touch the compressor discharge pipe for about half a second before the heat is unbearable. Next time you set the superheat, measure the discharge temperature and after a few settings you should see a pattern emerge.

Before closing I have a tip on another subject that could save you a lot of time: When you're about to start the process of changing a single phase compressor that has been diagnosed to have a locked rotor, change the capacitor and give it another try! You'll be surprised how many compressors miraculously burst back into life.

One of the great things about learning is that you never stop, so if you're not quite sure about anything written above or have any questions then contact your Technical Service Engineers at Temperzone where we'll be only too happy to help you out.

New Hitachi Wall Splits

We have increased the Efficiency not the Price!

Temperzone is launching a new range of high efficiency Hitachi Wall Splits from mid December 2011. There are new models available in 2.4kW, 3.5kW, 5kW, 6kW, 7kW and 8kW which will replace the entire current product range.

The new units have higher EER and COP's compared to their predecessors and all now have an H2 rating. We are able to provide AEER and ACOP ratings for all units.

As with our previous Splits they have Nano Titanium air purifying filters and stainless steel pre filters are available for all models and are standard on the 5kW and above range. All units have anti corrosion treatment on the outdoor unit and units 5kw and above have PAM controls as standard.



The working ambient range for the 5-8kw products has been increased from 43 degrees to 46 degrees. All models have demand response capability. The specifications for each unit are included in the table below.

INDOOR UNIT		RAS-25YHA3	RAS-35YHA4	RAS-50YHA3	RAS-60YHA3	RAS-70YHA3	RAS-80YHA3
OUTDOOR UNIT		RAC-25YHA3	RAC-35YHA4	RAC-50YHA3	RAC-60YHA3	RAC-70YHA3	RAC-80YHA3
Cooling Capacity	(kW)	2.5 (0.9-3.1)	3.5 (1.1-4.2)	5.0 (0.9-5.8)	6.0 (0.9-6.8)	7.0 (1.5-8.3)	8.0 (1.5-8.5)
Heating Capacity	(kW)	3.4 (0.9-4.4)	4.5 (1.1-5.6)	6.1 (0.9-6.8)	7.0 (0.9-7.5)	8.3 (1.5-9.7)	9.0 (1.5-9.7)
Heating Capacity H2	(kW)	3.2	4.0	5.55	6.00	6.55	7.3
EER	Cool	3.73	3.72	3.38	3.33	3.41	3.27
COP	Heat	4.00	4.09	3.67	3.52	3.52	3.27
COP H2	Heat	3.10	2.93	2.92	2.93	2.94	2.92
Compressor Type		Rotary	Rotary	2-Cylinder Rotary	2-Cylinder Rotary	2-Cylinder Rotary	2-Cylinder Rotary
Dimensions (mm)							
In door unit	H	280	280	295	295	333	333
	W	780	780	1,030	1,030	1,150	1,150
	D	220	220	207	207	245	245
Working range							
Ambient temp (cool)	C	-10 ~ +43	-10 ~ +43	-10 ~ +46	-10 ~ +46	-10 ~ +46	-10 ~ +46
Ambient temp (heat)	C	-15 ~ +21	-15 ~ +21	-15 ~ +21	-15 ~ +21	-15 ~ +21	-15 ~ +21

The new range of Hitachi wall splits combine high efficiency with excellent built quality, making them excellent value for money.

For more information on specifications availability and pricing contact your Temperzone rep.

Temperzone New Zealand Wins Business Award

Temperzone NZ Export Award **WINNER!**



The finalists of the inaugural Auckland Central Business Awards were announced 10 November at a glittering black tie Gala Dinner at the Langham Hotel. These awards were arranged by the Auckland Chamber of Commerce. Temperzone Ltd was the winner of the 'Excellence in Exporting' Award. There were three other worthy finalists. This award is great recognition for the 55 years Temperzone has lead the local industry and supported the local economy by exporting large quantities of its air conditioners.

According to Les Kendall, Governing Director and CEO Temperzone Group, "We put our success down to consistent export performance and growth over

many decades. Despite tough economic conditions in recent years, the company has consolidated and strengthened its international position, and now exports to more than 16 countries. While other companies have withdrawn, from Australasia, we've stayed and been able to increase our market share. The export award is a confirmation for management and staff that we're on the right track." To be confident about choosing a VRF brand you need to know the product is of the highest quality, the selection software is up to scratch, the product support is there from specification through to warranty, and that there is a full range of stock and spare parts available nationally.