



The Quantum heating system provides low-cost, low-carbon, electric heating on demand. In fact, the system offers unrivalled running costs, will actually use decreasing amounts of carbon over its lifetime, and has a 10 year warranty!†

Cost savings

With Quantum, up to 90% of your heating is provided using low-cost, off-peak energy. Quantum also uses insulation material with almost the lowest theoretically possible thermal conductivity – even lower than that of still air. This means heat barely passes through the material, minimising heat loss.

Quantum is recognised using SAP 2012 (the government-recommended system for measuring a home’s energy performance) as being up to 27% cheaper to run and using up to 22% less energy than a standard storage heater system.* This means that if a Quantum system replaces a manual static storage system, certain properties could expect annual running cost savings of up to £418 every year.* With these savings, the extra upfront cost could be repaid in just over two years.†

Quantum is also up to 47% cheaper to run than an electric convector or radiator system.* Depending on the property type, annual running cost savings could be up to £975 when replacing an electric convector or radiator system on standard tariff with a Quantum system on Economy 7.* See page 14 for a closer look at running costs figures.

What’s more, Quantum is the only product available in the UK† which meets the SAP 2012’s specification criteria for classification as a ‘high heat retention storage heater’. As a result, Quantum has been accepted as a ‘Green Deal Measure’ by the Department of Energy & Climate Change. The ‘golden rule’ of the Green Deal states that the expected energy savings must be greater than the costs of the improvements.

For more information on the Green Deal, visit www.gov.uk/greendeal

*Calculated using SAP 2012 – the only Government approved energy performance assessment method. †As at time of printing. ‡Based on a one bedroom flat.

Heat on demand

Its exceptional levels of insulation mean Quantum can store energy during periods of low demand, turning it into efficient heat only when needed. The Quantum iQ controller‡ uses a sophisticated self-learning algorithm to take just the right amount of heat to match your lifestyle and climate conditions, intuitively and precisely. So you can relax knowing there is sufficient heat available.

A soft-start fan ensures the heat is released into the room unobtrusively, quickly and efficiently. In fact, Quantum can heat a room faster than just about any other central heating system. Furthermore, because the heat outlet is positioned at the base of the heater, the room is heated from floor level, ensuring maximum comfort and efficiency.

10 YEAR Peace of mind

Quantum delivers high reliability, plus it’s virtually maintenance free. And for added confidence, every Quantum comes with our 10-year warranty†.

Furthermore, Quantum is BEAB Approved. Recognised across the UK and Europe, the BEAB Approved Mark from Intertek demonstrates the safety pedigree of a product: our commitment to best practice, to producing quality goods and to customer safety. It’s the highest safety standard achievable in the UK.



†10-year warranty is a standard 2 years, plus additional eight years on registration. ‡Patent applied for.



I think the Dimplex Quantum is marvellous, you can alter them really easily. My sitting room gets lots of sun in the day so it gets really warm and I don’t need any heating. As a result I just put the heater on its ‘out all day’ setting and then when I need heat in the evening, it’s there and that’s lovely. You just press a button and the job is done, very simple to use.

Resident, Kent.



A unique concept in electric heating

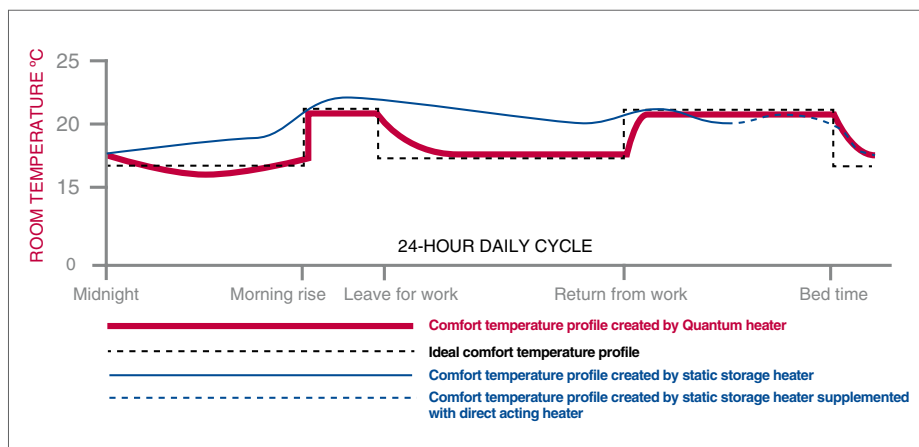
iQ Highly controllable

The Quantum iQ controller[†] monitors the weather and responds to changing climate conditions automatically. It follows target room temperature closely, adjusting settings to maintain the required temperature to within $\pm 0.3^{\circ}\text{C}$.

The iQ controller[†] is always monitoring and learning your heating habits. It anticipates your needs, adapting and delivering just the right amount of heat for complete comfort. Whether you are at home all day, or only morning and evening, Quantum matches the heating requirements of your lifestyle (see graph below).

Of course, if you want to adjust the heat levels manually, you can. The easy-to-use electronic interface with clear LCD display puts you in control. There's a seven-day programmer with three adjustable pre-set timer profiles, a 'Holiday' mode, landlord setting, child lock and more. So sit back and let Quantum take control. We take a closer look at 'Using Quantum' overleaf.

Quantum matches the heating requirements of your lifestyle



See page 15 for test details of this comparative test.

[†]Patent applied for.

Quantum at a glance

- Uses off-peak tariffs for low running costs – on a room-by-room basis, it's expected that 90% of the heating requirement will be met by off-peak energy.
- Automatically adjusts to the user's needs through its dynamic storage capacity.
- Comes fitted with our revolutionary iQ controller[†] which enables heating requirements to be preset.
- Matches the user's chosen heating profile precisely.
- Has an easy-to-use, electronic user interface with LCD display, complete with:
 - Room temperature setting.
 - Seven-day programmer.
 - Installer settings.
- Is designed to operate on any off-peak tariff.
- Has a fan-assisted output for extremely rapid heat-up time.
- Has a soft-start, ultra-quiet fan to heat the room unobtrusively and efficiently.
- Features a 'Boost' element, ensuring heat is always available, even with unexpected demand.
- Boasts an attractive, state-of-the-art design.
- Has a compact design (no deeper than a double wet radiator) with flexible mounting options and adjustable feet positions.
- Covers previous 'fixing marks' of most comparably sized traditional storage heaters.



Model QM100

Using Quantum

Whilst it's technologically advanced, the Quantum Heating System is incredibly easy to use.

We have seen how the system responds to user lifestyle and climate conditions intuitively and precisely, delivering just the right amount of heat. Here's a reminder of what it can do for you.

The Quantum heating system will:

- Monitor weather and usage patterns intelligently, learning from and adapting to them, delivering heat accordingly.
- Work seamlessly with the grid, using off-peak tariffs to minimise user costs and maximise efficiency.
- Follow target room temperature closely, adjusting settings intuitively using a thermostat that is accurate to within a fraction of a degree (°C).
- Respond quickly to changing climate and room temperature conditions, and alter configurations automatically.

For those times when users want to adjust heat levels manually, the built-in, state-of-the-art controls let them do just that.

End-users can:

- Adjust heat levels manually via the easy-to-use, electronic interface with LCD display.
- Choose and adjust preset programmes, such as 'Home all day', then sit back and relax as the Quantum Heating System takes control.

A closer look at the control panel



For the visually impaired, Quantum's target temperature display is colour coded.

The low torque rotary control – specifically designed for arthritic users – adjusts target temperature, and allows for easy menu scrolling and selection.



The seven-day programmer has three adjustable pre-set timer profiles, a 'Holiday' mode with frost protection, landlord setting, child lock setting and many more features.

Whether you're specifying, installing, living or working with Quantum, you'll quickly realise the benefits that this dynamic heating system has to offer.

For the specifier, Quantum:

- Uses low-cost, low-carbon, future-proofed technology.
- Is easy to specify within SAP 2012.
- Is available in a range of heater sizes for greater flexibility in project specification.
- Is virtually maintenance free.
- Is compact with adjustable feet positions.
- Covers previous 'fixing marks' of most comparably sized traditional storage heaters.
- Has easy-to-use controls to avoid user confusion.
- Features a low torque rotary knob designed for arthritic users and the visually impaired.

For the end user, Quantum:

- Is completely automatic once set up.
- Is economical to run, helping to alleviate the increasing problem of fuel poverty.
- Offers improved comfort levels, heating only when required.
- Is virtually maintenance free.
- Provides accurate room temperature control using a thermostat accurate to $\pm 0.3^{\circ}\text{C}$.
- Is responsive to changes in external temperature.
- Features a low torque rotary control designed for arthritic users and the visually impaired.
- Delivers high reliability and very low maintenance.
- Is accepted as a Green Deal 'measure' – see page 10 for more details.

For the installer, Quantum:

- Is simple to install – with separate instructions for both installer and user.
- Includes an electronic controller preloaded with time/date and commissioning programme.
- Features reversible cable entry points and adjustable feet to ensure the chassis covers previous 'fixing marks' of most comparably sized storage heaters.
- Has easy-to-use controls to avoid user confusion.

“

Our residents are very pleased and are getting used to the controls quite easily as the thermostat is easy to see on top of the heater and it can be turned up or down, giving virtually instantaneous results.

Specifier

”

“

"I've been renovating the house and definitely didn't want the hassle of running gas in, not to mention the cost. When my friend who is an installer said always go for Dimplex, they are the best, the whole process was easy from there on.

Homeowner

”

“

I find the Quantum heater brilliant to install; very straightforward and easy. We're installing them all the time now.

Installer

”

A closer look at running costs

The running costs of electric heating systems in this case study are calculated using energy consumptions derived from SAP2012 energy use estimation methods. This energy use is combined with a standard electric heating tariff for electric radiators and an Economy 7 tariff for storage heaters and Quantum. The kWh unit rates are as stated in SAP2012 Table 12 (BRE – published on behalf of DECC) ‘SAP2012 – the Government’s Standard Assessment Procedure for Energy Rating of Dwellings’, 2012 edition, February 2014.

With these assumptions SAP2012 has been used to calculate the space heating running costs for 3 property types with two different levels of insulation. The first level of insulation is based on 1960s building regulations and air tightness, whilst the second level of insulation is based on 1990s standards. The annual space heating energy requirements are based on average regional weather conditions for Northern Ireland.

The results show that certain properties with a Quantum heating system using an E7 tariff can reduce, on average, running costs by between 44-47% when compared with direct acting systems such as electric radiators using a standard tariff. Quantum can also achieve savings of up to 27% if used in a property to displace conventional manual storage heaters on an E7 tariff.

Quantum offers significant running cost savings compared to other electric heating systems.

40m² 1-Bed Flat

	Built with typical 1960s Building Regulations. Annual space heating energy requirement – 6,840kWh	Refurbished with typical 1990s Building Regulations.
Heating System	Running Cost	Running Cost
Direct acting electric radiators	£902 (Standard Tariff)	£523 (Standard Tariff)
Manual charge storage heating and panel convector heaters	£664 (E7 Tariff)	£371 (E7 Tariff)
Quantum and panel convector heaters	£494 (E7 Tariff)	£291 (E7 Tariff)

65m² 2-Bed Flat

	Built with typical 1960s Building Regulations. Annual space heating energy requirement – 10,610kWh	Refurbished with typical 1990s Building Regulations.
Heating System	Running Cost	Running Cost
Direct acting electric radiators	£1,399 (Standard Tariff)	£849 (Standard Tariff)
Manual charge storage heating and panel convector heaters	£985 (E7 Tariff)	£575 (E7 Tariff)
Quantum and panel convector heaters	£745 (E7 Tariff)	£455 (E7 Tariff)

90m² 3-Bed Flat

	Built with typical 1960s Building Regulations. Annual space heating energy requirement – 15,910kWh	Refurbished with typical 1990s Building Regulations.
Heating System	Running Cost	Running Cost
Direct acting electric radiators	£2,099 (Standard Tariff)	£1,248 (Standard Tariff)
Manual charge storage heating and panel convector heaters	£1,542 (E7 Tariff)	£857 (E7 Tariff)
Quantum and panel convector heaters	£1,124 (E7 Tariff)	£663 (E7 Tariff)

Model No.	Height	Depth	Width	Installed Weight	Energy Cell Packs Req (packaged separately)
QM050*	730mm (28.75")	185mm (7.3")	580mm (22.7")	66kg	4
QM070	730mm (28.75")	185mm (7.3")	703mm (27.7")	83kg	6
QM100	730mm (28.75")	185mm (7.3")	865mm (34.1")	107kg	8
QM125	730mm (28.75")	185mm (7.3")	1069mm (42.1")	135kg	10
QM150	730mm (28.75")	185mm (7.3")	1069mm (42.1")	155kg	12

Model No.	Output Rating	Input Rating	Max. Storage Capacity	Boost Element Rating
QM050*	0.5kW	1.1kW	7.7kWh	0.40kW
QM070	0.7kW	1.56kW	10.9kWh	0.63kW
QM100	1.0kW	2.2kW	15.4kWh	0.88kW
QM125	1.25kW	2.76kW	19.3kWh	1.13kW
QM150	1.5kW	3.3kW	23.1kWh	1.3kW

For fixing dimensions and minimum clearances please refer to instructions – available at www.dimplex.co.uk/quantum

*QM050 available Autumn 2015

Controls	Electronic user interface with LCD display offering room temperature setting, seven-day programmer, installer settings, three pre-set timer profiles, holiday setting and more.
Charge controller	Fully automatic charge controller incorporates self-learning algorithms to optimise daily energy storage, using multiple sensors to automatically adjust the charge taken based on recent energy use patterns and future programmed requirements.
Thermostat	Electronic – accurate to +/-0.3°C.
Safety devices	Electromechanical – limit thermostat (self resetting); cut-out (manual reset); over temperature thermostat for fan; over temperature limit thermostat for fan.
Fan	Low rev/low noise heat circulation fan with variable speed and soft start.
Storage core	High density bonded magnetite energy cells.
Thermal insulation	Front, rear top and ends – microporous silica. Base – calcium silicate slab.
Colour/finish	White.
Battery backup	3.3V coin cell battery to backup real time clock. Battery life > 5 years.
Supply	230-240V/50Hz. Off-peak + 24-hour supply required.
Approvals	BEAB/EN60335/EMC/CE.
Warranty	Two years standard, plus additional eight years on registration. Terms and conditions apply. See www.dimplex.co.uk/quantumregistration for full details.

Comparative test details (relates to graph on page 11)

Climate room test chamber

A climate room was built to accurately replicate a room from typical UK housing stock. It has two external walls and two internal walls, and the temperatures outside all walls, ceiling and floor are accurately controlled. Room dimensions – **4m x 3m x 2.4m**. U values:

- Double layer solid brick outer walls **2.0**
- Insulated internal walls and ceiling **0.34**
- Insulated floor **0.25**
- UPVC double glazed window **3.3**
- UPVC double glazed door **3.0**
- Air change rate **1 A/C per hour**

The test

A daily temperature profile was set up outside the two external walls to simulate an average heating day in a property based in Sheffield, England.

Minimum outside temperature – **+4°C** Maximum outside temperature – **+11°C**

The heating periods were set at 07:00 to 09:00 and 16:00 to 23:00. The target room thermal comfort temperature was 21°C. The following heater was tested under these conditions:

- 3.4kW (input) static storage heater with manual charge control – supplemented with a direct acting heater.
- 2.8kW (input) Quantum heater (QM125).