Key Homeowner Benefits

1. **Lower Heating Bills and a Quick Return on Investment**
   Lower heating costs through the use of less-expensive Off-Peak electricity rates for space and water heating.
   - Typical Off-Peak rates are in the 4¢ to 5¢ per kWh range.
   - Standard electricity rates are in the 8¢ to 12¢ per kWh range.
   - Potential savings of approximately 50% for electric space and water heating.

2. **Greater Comfort & Aesthetics**
   Combines (1) thermostat-controlled forced convection heat, with (2) radiant heating that directly heats people and objects in the room. Attractive cabinet design stores 20% more heat energy than competitive brands.

3. **Environmentally Friendly**
   Renewable energy like wind power generates electricity around the clock but not always when it’s needed. Storage heating stores extra capacity “Off-Peak” energy, allowing more efficient overall generation. To meet this challenge, Dimplex has been manufacturing storage heating since 1965.

4. **Ease of Installation**
   No need to add duct work or piping. Most installations can be completed in a single day.
What is Storage Heating and How Does it Work?

Storage heating uses less expensive Off-Peak electricity to store heat energy at night and then release this heat as required to keep homeowners warm on even the coldest days.

The Dimplex DCP2010 automatic charge control system includes an outdoor temperature sensor to determine how much heat to store for the next day and can be customized to meet each user’s comfort needs while maximizing savings.

The Importance of Accurate Heat Loss Calculations

It is critical to do an accurate heat loss calculation on the area including all other energy efficiency initiatives being considered to the area’s building envelope. The lower the room’s heat loss:

- the smaller the physical size of the storage heater
- the smaller the element amperage, wiring, breaker and impact on the home’s service capacity
- the better chance of using existing electrical wiring and the less expensive the installation

An online heat loss calculator can be found at http://www.dimplexheating.com/heat_loss_calculator.

Do I Need to Control my Electric Water Heating?

It depends on your utility’s program.

- Under a whole-house Time-Of-Use rate, you will be penalized if you do not control the water heater and spend more money. Why? Even if you take your showers at 6:30, your water heater will do the vast majority of its heating after 7am when the more expensive Peak rate period typically starts.
- If your home has a second Off-Peak meter. The downside is that you will noy be able to take advantage of the less-expensive Off-Peak power rates.

**NOTE.** Space and Water Heating account for about 75% of your energy bills and water heating accounts for about 25% of that, so controlling your water heating will save you money every month. When changing your next water heater, we recommend an 80 gallon version so you have plenty of low-cost hot water.

Installation Clearances & Maintenance

- Keep all materials off the heater at least 4” away from the top and sides, 12” from the front of the heater to allow the heat to properly circulate.
- We recommend that the area near the unit is cleaned periodically to reduce dust, dirt and pet hair entering the heater.
Ordering Information

<table>
<thead>
<tr>
<th>Complete Kit</th>
<th>Separate Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Heater</td>
<td>Element Kit</td>
</tr>
<tr>
<td>Storage Heater</td>
<td>Kit</td>
</tr>
<tr>
<td>VFMQ20-220</td>
<td>1 x VFMQ20</td>
</tr>
<tr>
<td>VFMQ30-330</td>
<td>1 x VFMQ30</td>
</tr>
<tr>
<td>VFMQ40-440</td>
<td>1 x VFMQ40</td>
</tr>
<tr>
<td>VFMQ50-550</td>
<td>1 x VFMQ50</td>
</tr>
<tr>
<td>VFMQ50-564</td>
<td>1 x VFMQ50</td>
</tr>
<tr>
<td>VFMQ60-660</td>
<td>1 x VFMQ60</td>
</tr>
<tr>
<td>VFMQ60-676</td>
<td>1 x VFMQ60</td>
</tr>
<tr>
<td>VFMQ70-770</td>
<td>1 x VFMQ70</td>
</tr>
<tr>
<td>VFMQ70-790</td>
<td>1 x VFMQ70</td>
</tr>
</tbody>
</table>

Shipping Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Heating Element (total)</th>
<th>Empty Cabinet Weight for Transporting 1</th>
<th>Dimensions – LxHxD (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VFMQ20-220</td>
<td>2.0 kW</td>
<td>75 lbs. 216 lbs.</td>
<td>24½ x 26½ x 9¼ in</td>
</tr>
<tr>
<td>VFMQ30-330</td>
<td>3.0 kW</td>
<td>88 lbs. 301 lbs.</td>
<td>30½ x 26½ x 9¼ in</td>
</tr>
<tr>
<td>VFMQ40-440</td>
<td>4.0 kW</td>
<td>101 lbs. 387 lbs.</td>
<td>36½ x 26½ x 9¼ in</td>
</tr>
<tr>
<td>VFMQ50-550/564</td>
<td>5.0 or 6.4 kW</td>
<td>114 lbs. 473 lbs.</td>
<td>42½ x 26½ x 9¼ in</td>
</tr>
<tr>
<td>VFMQ60-660/676</td>
<td>6.0 or 7.6 kW</td>
<td>128 lbs. 559 lbs.</td>
<td>48¼ x 26½ x 9¼ in</td>
</tr>
<tr>
<td>VFMQ70-770/790</td>
<td>7.0 or 9.0 kW</td>
<td>141 lbs. 645 lbs.</td>
<td>54¼ x 26½ x 9¼ in</td>
</tr>
</tbody>
</table>

1 The Empty Cabinet Weight for Transporting is the weight of the storage heater cabinet alone and its associated packaging.

2 The Approximate Installed Weight includes all its components:
   - the storage heater cabinet
   - the element kit
   - the bricks for the storage core that are three to a box

All information is subject to change
Charge Control Options

Charge controllers perform two functions:
1. Ensure the elements charge only during the Off-Peak period.
2. Manage the amount of charge to meet the next day’s heating requirements. This can be done automatically or manually by the user selecting the charge amount on each heater.

Automatic charge control is better:
- for sites with more than one heater.
- when low user involvement is desired.
- includes 4 additional relays to individually control up to 4 additional loads like water heating.

Manual charge control option is:
- recommended for single heater installations in areas that can handle temperature fluctuations like basements, cottages and workshops for times that the charge level is over/under set.

Automatic Charge Control - DCP2010 Charge Control Panel

Dimplex’s DCP2010 Charge Control Panel can control:
- 1 to 30 VFMQ storage heaters.
- 4 additional 30 Amp loads including an electric water heater, electric in-floor heating, baseboard heaters in non-living areas and any other loads on their own circuit.

The panel is connected to:
- the external temperature sensor by a 6½ ft cable (included) that can be extended to 100 ft by #16/2 wire.
- each storage heater wired in parallel with #14/2 wire.
- the utility-supplied relay, contactor or meter lead.

Key Benefits of the Dimplex Charge Control System:
- Surge protection to surpass IEC 61000-4-5 requirements.
- 4 x 30 Amp relays initiated in sequence 5 minutes apart (or randomly over 8½ minutes) at the beginning of each charging period to reduce the inrush current. Each relay can be overridden by the user for 1-hour or until the next Off-Peak period.
- Includes a “Technician” mode to lock-down key configuration settings and reduce customer calls.
- Based on the average outdoor temperature over the last 24-hours, the panel estimates the amount of heat required and ensures that the heaters are fully charged 1-hour before the end of the Off-Peak period. For example, if the heaters require a 4-hour charge, the heaters will begin charging 5-hours before the end of the Off-Peak period reducing strain on the home’s service capacity. Other options are forward charging to start at the beginning of the Off-Peak period or middle charging.
- Users can customize and maximize their savings based on their lifestyle by selecting the outdoor temperature to begin charging the units for spring and fall.
- The NEMA type-1 indoor panel dimensions are 12" x 9¼" x 4".
Manual Charge Control Option (single heater installations only)

Every Dimplex storage heater has manual charge control functionality built in. To use this option instead of the DCP2010 automatic charge control, the top plug must be removed from the panel on the heater’s right-hand side and the supplied knob must be installed.

Manual charge control is only recommended for single heater installations that are in areas that can handle temperature fluctuations like basements, cottages and workshops for times that the charge level is over/under set.

The manual charge control option allows the homeowner to manually decide how much heat energy to store during the Off-Peak period. No charge (off) is the zero setting (▼) while a full charge for those coldest days in January and February would be a three (III). The typical winter setting is two (II), spring and fall is typically set at one (I).

For more detailed information, please contact Dimplex at ets@dimplex.com for an electronic copy of Dimplex’s VFMQ ETS Control Options and Wiring Manual.

ZHI Auxiliary Elements — Direct Acting for Seasonal Cold Snaps

For those infrequent cool days during the summer, spring and fall when you don’t want to run your storage heating system, Dimplex offers an auxiliary element that can be added to the VFMQ heater for spot heating.

The element works like a traditional electric heating element and requires the RTEV99 internal thermostat option to function. To power the auxiliary element, both buttons on the RTEV99 must be turned on and when the RTEV99 thermostat sees a requirement for heat, the VFMQ’s internal fan will blow air across the activated element to heat the area.

As an operating cost savings feature, the element will only turn on if the storage core is less than 25% of its full capacity.

Please Note:

- The amperage of the direct elements needs to be added to the storage elements to find the correct wire / breaker size.
- The direct elements can be wired to work on the same circuit as the storage elements or isolated to work on the non-utility controlled fan circuit. Please check with the Utility for their preferred method.

<table>
<thead>
<tr>
<th>Catalogue Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZHI050E</td>
<td>500 W Auxiliary Element for VFMQ20</td>
</tr>
<tr>
<td>ZHI070E</td>
<td>700 W Auxiliary Element for VFMQ30-70</td>
</tr>
<tr>
<td>ZHI110E</td>
<td>1.1 kW Auxiliary Element for VFMQ40-70</td>
</tr>
<tr>
<td>ZHI200E</td>
<td>2.0 kW Auxiliary Element for VFMQ50-70</td>
</tr>
</tbody>
</table>

Note. The element is shown without the grill for illustrative purposes.
Thermostat Options

Thermostats are extra to the VFMQ heaters and two types are available:

- RTEV99 internal thermostat.
- TS521W wall thermostat and must include an inline fuse (240 volts / 15 Amps) on each leg. An example from Littelfuse:
  - 2 x LFR250301S fuse blocks that can connect #8 - #14 gauge wire.
  - 2 x FLNR-015 fuses.

**BKOI25 Riser Feet**

Provides 4 inches of clearance and can be used in areas with long shag carpets or where there’s a benefit to accessing or cleaning under the heaters like in schools or hospitals.

- Colour is birch-grey.
- Two feet to a BKOI25 set.

**EZ-ZW1 Optional Mounting Bracket**

In circumstances such as:
- uneven floors;
- applications that require additional security;

Dimplex offers an optional mounting bracket that can be attached to the left-hand side of the VFMQ storage heater. This can be retrofitted to an installed heater assuming some clearance.

**UPLI Base Plates**

Base plates are available to help protect uneven or delicate vinyl flooring or carpeting.

They are sized based on the heater and sit under the heater.

<table>
<thead>
<tr>
<th>VFMQ</th>
<th>UPLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>20</td>
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<tr>
<td>30</td>
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<td>50</td>
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<tr>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>
The Dealer is:

- required to supply one-year labour warranty with all installations and should cost this into their quote.
- responsible for all after sales service related matters and provide 24-hour service on all Dimplex storage heating products.
- responsible for educating the customer about the correct working of the equipment, controls' operation with the Utility’s Off-Peak program and comfort concerns.
- responsible for assisting the customer to complete the:
  - Off-Peak rate application for the utility.
  - DCP2010 Control Settings sheet from the VFMQ ETS Control Options and Wiring Manual.

Dimplex Warranty and Technical Support

Dimplex’s limited warranty from the first purchase date is:

- 5 years for the VFMQ storage heater consisting of cabinet, elements and bricks.
- 3 years for the TOD Charge Control Panel and other storage heating accessories.

In addition to in-person and online training, Dimplex Dealers have access to Dimplex’s Technical Support Team with direct escalation to our Solutions Manager for onsite questions to ensure the job is completed right the first time without having to go back.

Technical Support Group: (888) 346-7539
To properly size a heater installation and ensure that the homeowner is comfortable and never runs out of stored heat, two variables must always be taken into account:
1) the heat loss of the room on the coldest day of the year;
2) the length of the Utility’s Off-Peak period.

As an example, let’s assume that your room has a heat loss of 2 kW (7,000 BTU/Hr) and your Off-Peak period has a duration of 8 hours, overnight from 11pm to 7am. Looking at the column below under “8 hours”, the VFMQ40-440 storage heater can meet a maximum maintainable heat loss of 1.8 kW, while the next larger size can meet 2.3 kW, so the VFMQ50-550 is the correct choice.

<table>
<thead>
<tr>
<th>Model</th>
<th>Heating Elements (total)</th>
<th>Maximum Maintainable Heat Loss¹ (kW (BTU/Hr))</th>
<th>Wire Size² (AWG)</th>
<th>Breaker Size³ (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>8+0</td>
<td>10+0</td>
<td>12+0</td>
</tr>
<tr>
<td>VFMQ20-220</td>
<td>2.0 kW</td>
<td>0.9 kW (3,070)</td>
<td>1.0 kW (3,410)</td>
<td>1.1 kW (3,750)</td>
</tr>
<tr>
<td>VFMQ30-330</td>
<td>3.0 kW</td>
<td>1.3 kW (4,440)</td>
<td>1.5 kW (5,120)</td>
<td>1.7 kW (5,800)</td>
</tr>
<tr>
<td>VFMQ40-440</td>
<td>4.0 kW</td>
<td>1.8 kW (6,150)</td>
<td>1.9 kW (6,490)</td>
<td>2.1 kW (7,150)</td>
</tr>
<tr>
<td>VFMQ50-550/564</td>
<td>5.0 or 6.4 kW</td>
<td>2.3 kW (7,850)</td>
<td>2.6 kW (8,900)</td>
<td>2.8 kW (9,550)</td>
</tr>
<tr>
<td>VFMQ60-660/676</td>
<td>6.0 or 7.6 kW</td>
<td>2.7 kW (9,200)</td>
<td>3.0 kW (10,250)</td>
<td>3.3 kW (11,250)</td>
</tr>
<tr>
<td>VFMQ70-770/790</td>
<td>7.0 or 9.0 kW</td>
<td>3.1 kW (10,600)</td>
<td>3.4 kW (11,600)</td>
<td>3.7 kW (12,600)</td>
</tr>
</tbody>
</table>

¹ Maximum Maintainable Heat Loss refers to the maximum heat loss each storage heater can meet based on the local electrical utility’s charging schedule.
² Wire and Breaker sizes should be confirmed based on the local electrical code.

**Steffes Simple Cross Reference**

- This table is a simple cross-reference for Steffes room units.
- Please note that these tables do not replace the need for a proper heat loss.

www.renewables.dimplex.com

All information is subject to change

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