NVHR®
Award winning facade-based mixing ventilation, offering enhanced natural ventilation in a slimline, compact and energy efficient unit

www.breathingbuildings.com
Creating an inspiring environment with superb air quality and thermal comfort using ultra low energy hybrid ventilation.

Benefits

The NVHR range is available in 3 sizes – NVHR 900, NVHR 1100 & NVHR 1700

- NVHR 900 – standard model
- NVHR 1100 – enhanced performance model with higher flows designed for buildings where outside noise levels are a disturbance, and where opening windows is not an option
- NVHR 1700 – a new, larger unit now able to meet the needs of a classroom where previously two units were necessary

Available as room heating versions

- NVHR+ 900
- Reduces heating bills compared to traditional radiator heating
- Provides the primary heating for the room, no supplementary heating required
- Designed to compliment Air Source Heat Pumps

Designed to meet thermal comfort and air quality criteria of:

- BB101 (2018)
- PSBP FOS
- ESFA Annex 2F
- CIBSE TM52
- Quiet operation: fully compliant for classrooms, science laboratories and offices
- Slim, compact and lightweight saving space and easing installation
- User friendly control options
- Automated control that responds to environmental conditions
- Can be integrated into wider Building Management Systems (BMS)
- ErP compliant and CE certified
- Robust pre-coated steel construction in white RAL 9003 as standard – bespoke colour option available on request
- Proven performance & reliability – over 7000 units installed in the UK (visit our web site for case studies)

Seasonal Modes of Operation

A Classroom Layout in Natural Mode

- Damper opens
- Single sided ventilation
- Works with other openings in the space

A Classroom Layout in Summer Boost

- Damper opens fully
- Air delivered to rear of the space
- Natural exhaust through the unit
- Night cooling

A Classroom Layout in Winter Mixing

- Damper modulates on demand
- Draught mitigation strategy
- Mixes warm room air with fresh external air
- Natural exhaust through the unit
Dimensions

<table>
<thead>
<tr>
<th></th>
<th>NVHR 900</th>
<th>NVHR +900</th>
<th>NVHR 1100</th>
<th>NVHR 1700</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>300 mm</td>
<td>300 mm</td>
<td>330 mm</td>
<td>330 mm</td>
</tr>
<tr>
<td>D</td>
<td>1,310 mm</td>
<td>1,710 mm</td>
<td>1,500 mm</td>
<td>1,800 mm</td>
</tr>
<tr>
<td>W</td>
<td>900 mm</td>
<td>900 mm</td>
<td>1078 mm</td>
<td>1700 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>56 kg</td>
<td>70 kg</td>
<td>68 kg</td>
<td>130 kg</td>
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</table>

Performance

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Model Type</th>
<th>Type of Room</th>
<th>Predicted Room Sound Pressure Level with a Pair of Units (dB)</th>
<th>Total Air Flow Rate (l/s)</th>
<th>External Static Pressure (Pa)</th>
<th>Specific Fan Power (W/l/s)</th>
<th>Total Air Flow Rate (l/s)</th>
<th>External Static Pressure (Pa)</th>
<th>Specific Fan Power (W/l/s)</th>
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</thead>
<tbody>
<tr>
<td>NVHR 900</td>
<td>SEN/Music Room (60 m²)</td>
<td>30</td>
<td>95</td>
<td>9</td>
<td>0.07</td>
<td></td>
<td>168</td>
<td>7</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Normal Classroom (60 m²)</td>
<td>35</td>
<td>118</td>
<td>14</td>
<td>0.10</td>
<td></td>
<td>206</td>
<td>11</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Science Classroom (90 m²)</td>
<td>40</td>
<td>147</td>
<td>21</td>
<td>0.14</td>
<td></td>
<td>253</td>
<td>16</td>
<td>0.11</td>
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<tr>
<td></td>
<td></td>
<td>40</td>
<td>155</td>
<td>23</td>
<td>0.15</td>
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<td>286</td>
<td>17</td>
<td>0.12</td>
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<td>45</td>
<td>193</td>
<td>36</td>
<td>0.20</td>
<td></td>
<td>328</td>
<td>26</td>
<td>0.15</td>
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<tr>
<td>NVHR+ 900</td>
<td>SEN/Music Room (60 m²)</td>
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<td>99</td>
<td>10</td>
<td>0.19</td>
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<td>141</td>
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<tr>
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<td>Normal Classroom (60 m²)</td>
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<td>128</td>
<td>16</td>
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<td>180</td>
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<td>40</td>
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<td>227</td>
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<td>296</td>
<td>21</td>
<td>0.36</td>
</tr>
<tr>
<td>NVHR 1100</td>
<td>SEN/Music Room (60 m²)</td>
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<td>130</td>
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<td>0.05</td>
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<td>160</td>
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<tr>
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<td>Normal Classroom (60 m²)</td>
<td>35</td>
<td>160</td>
<td>14</td>
<td>0.06</td>
<td></td>
<td>200</td>
<td>11</td>
<td>0.07</td>
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<tr>
<td></td>
<td>Science Classroom (90 m²)</td>
<td>40</td>
<td>210</td>
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<td>0.08</td>
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<td>280</td>
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<td>0.12</td>
</tr>
<tr>
<td>NVHR 1700</td>
<td>SEN/Music Room (60 m²)</td>
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<td>255</td>
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<td>0.08</td>
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<td>270</td>
<td>3.6</td>
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<tr>
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<td>Normal Classroom (60 m²)</td>
<td>35*</td>
<td>326</td>
<td>9.9</td>
<td>0.09</td>
<td></td>
<td>356</td>
<td>7</td>
<td>0.09</td>
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<tr>
<td></td>
<td>Science Classroom (90 m²)</td>
<td>40*</td>
<td>386</td>
<td>14.9</td>
<td>0.13</td>
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<td>0.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40*</td>
<td>414</td>
<td>17.5</td>
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<td>437</td>
<td>12.3</td>
<td>0.15</td>
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</tbody>
</table>

All values listed are for grilled units. * Based on one unit per classroom

NVHR® Installation Options

Different options available to suit your installation:

- Exposed unit, utilised when no ceiling void is available
- Ducted unit, installed within the ceiling void
- Bulkhead arrangement
## Control Options

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Ancillaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Automatic Operation</td>
<td>Secure Night Cool</td>
</tr>
<tr>
<td>Manual Override</td>
<td>BMS Integration</td>
</tr>
<tr>
<td>Winter Mixing</td>
<td>Heating/ Cooling Interlock</td>
</tr>
<tr>
<td>Natural Mode</td>
<td>Wall Mounted Keyswitch</td>
</tr>
<tr>
<td>Summer Boost</td>
<td>Open Windows Indicator</td>
</tr>
<tr>
<td>NV Smart+</td>
<td>Room Temp/ CO₂ Sensor</td>
</tr>
<tr>
<td>NV Smart+ Connected</td>
<td>External Temp Sensor</td>
</tr>
</tbody>
</table>

- NV Smart+ ✓ ✓ ✓ ✓ ✓ ✓ ✓
- NV Smart+ Connected ✓ ✓ ✓ ✓ ✓ ✓ ✓ +
- Advanced Connected Controller ✓ ✓ ✓ ✓ ✓ ✓ ✓ *

Legend:
- ✓ Included as standard
- * Optional extra
- + Unless provided by BMS
- * Integrated External Temp Sensor option available, please ask us about this

### User Interface Options

#### Traditional Control
- Key switch with rocker switches
- Easy to operate
- Sets mode of operation - automatic, manual & test
- Status indicated by green light (steady or flashing sequences)

#### Advanced Connected Controller

User interface panel with indicator lights for:
- Boost and Timer
- Sleep mode
- Open windows prompt
- Fault indicator
- Dark mode for SEN rooms and distraction avoidance
- QR Code for easy access to user guide
- Bluetooth connectivity for App commissioning and tuning
- Digitally connected via cable for robust operation and accurate commissioning

### Accessories

Breathing Buildings have a comprehensive range of accessories to enhance functionality or aid ease of installation.

- Sensors
- Wall & Glazing Interfaces
- Louvres
- Ductwork
- Grilles

### Contact Breathing Buildings

Contact Breathing Buildings dedicated design services team to help you select the best product solution to meet your application requirements.

Contact us:
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- e: info@breathingbuildings.com
- t: 01223 450060
- a: Unit 3a, The Shade, Soham, CB7 5HF