Windtronics
Wind Turbine Technology
Output Curve
Watt & kWh
Data
The Future of Wind Technology

Traditional Wind Turbines

Honeywell Wind Turbine
# Honeywell Wind Turbine: Model StarGate

<table>
<thead>
<tr>
<th>Wind Speed (m/s)</th>
<th>Wind Speed (MPH)</th>
<th>% At Wind Speed Class 4 Site</th>
<th>Annual Hours (h/yr)</th>
<th>Hours At Wind Speed (h/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
</tr>
<tr>
<td>0.5</td>
<td>1.11</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
</tr>
<tr>
<td>1.5</td>
<td>3.33</td>
<td>6.61</td>
<td>8,760</td>
<td>579</td>
</tr>
<tr>
<td>2.5</td>
<td>5.55</td>
<td>10.04</td>
<td>8,760</td>
<td>880</td>
</tr>
<tr>
<td>3.5</td>
<td>7.77</td>
<td>12.22</td>
<td>8,760</td>
<td>1,070</td>
</tr>
<tr>
<td>4.5</td>
<td>9.99</td>
<td>13.04</td>
<td>8,760</td>
<td>1,142</td>
</tr>
<tr>
<td>5.5</td>
<td>12.21</td>
<td>12.63</td>
<td>8,760</td>
<td>1,106</td>
</tr>
<tr>
<td>6.5</td>
<td>14.43</td>
<td>11.30</td>
<td>8,760</td>
<td>990</td>
</tr>
<tr>
<td>7.5</td>
<td>16.65</td>
<td>9.41</td>
<td>8,760</td>
<td>824</td>
</tr>
<tr>
<td>8.5</td>
<td>18.87</td>
<td>7.35</td>
<td>8,760</td>
<td>644</td>
</tr>
<tr>
<td>9.5</td>
<td>21.09</td>
<td>5.41</td>
<td>8,760</td>
<td>474</td>
</tr>
<tr>
<td>10.5</td>
<td>23.31</td>
<td>3.75</td>
<td>8,760</td>
<td>329</td>
</tr>
<tr>
<td>11.5</td>
<td>25.53</td>
<td>2.46</td>
<td>8,760</td>
<td>215</td>
</tr>
<tr>
<td>12.5</td>
<td>27.75</td>
<td>1.53</td>
<td>8,760</td>
<td>134</td>
</tr>
<tr>
<td>13.5</td>
<td>29.97</td>
<td>0.90</td>
<td>8,760</td>
<td>79</td>
</tr>
<tr>
<td>14.5</td>
<td>32.19</td>
<td>0.51</td>
<td>8,760</td>
<td>45</td>
</tr>
<tr>
<td>15.5</td>
<td>34.41</td>
<td>0.27</td>
<td>8,760</td>
<td>24</td>
</tr>
<tr>
<td>16.5</td>
<td>36.63</td>
<td>0.14</td>
<td>8,760</td>
<td>12</td>
</tr>
<tr>
<td>17.5</td>
<td>38.85</td>
<td>0.07</td>
<td>8,760</td>
<td>6</td>
</tr>
<tr>
<td>18.5</td>
<td>41.07</td>
<td>0.03</td>
<td>8,760</td>
<td>3</td>
</tr>
<tr>
<td>19.5</td>
<td>43.29</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
</tr>
<tr>
<td>20.5</td>
<td>45.51</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
</tr>
<tr>
<td>21.5</td>
<td>47.73</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
</tr>
<tr>
<td>22.5</td>
<td>49.95</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
</tr>
<tr>
<td>23.5</td>
<td>52.17</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
</tr>
<tr>
<td>24.5</td>
<td>54.39</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
</tr>
</tbody>
</table>
## Honeywell Wind Turbine: Model StarGate

### Power Curve Data in Class 4 Wind

<table>
<thead>
<tr>
<th>Wind Speed (m/s)</th>
<th>Wind Speed (MPH)</th>
<th>% At Wind Speed Class 4 Site</th>
<th>Annual Hours (h/yr)</th>
<th>Hours At Wind Speed (h/yr)</th>
<th>StarGate Power Curve Data in Class 4 Wind (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>0.0</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.5</td>
<td>1.11</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>1.5</td>
<td>3.33</td>
<td>6.61</td>
<td>8,760</td>
<td>579</td>
<td>14</td>
</tr>
<tr>
<td>2.5</td>
<td>5.55</td>
<td>10.04</td>
<td>8,760</td>
<td>880</td>
<td>40</td>
</tr>
<tr>
<td>3.5</td>
<td>7.77</td>
<td>12.22</td>
<td>8,760</td>
<td>1,070</td>
<td>82</td>
</tr>
<tr>
<td>4.5</td>
<td>9.99</td>
<td>13.04</td>
<td>8,760</td>
<td>1,142</td>
<td>140</td>
</tr>
<tr>
<td>5.5</td>
<td>12.21</td>
<td>12.63</td>
<td>8,760</td>
<td>1,106</td>
<td>214</td>
</tr>
<tr>
<td>6.5</td>
<td>14.43</td>
<td>11.30</td>
<td>8,760</td>
<td>990</td>
<td>305</td>
</tr>
<tr>
<td>7.5</td>
<td>16.65</td>
<td>9.41</td>
<td>8,760</td>
<td>824</td>
<td>411</td>
</tr>
<tr>
<td>8.5</td>
<td>18.87</td>
<td>7.35</td>
<td>8,760</td>
<td>644</td>
<td>535</td>
</tr>
<tr>
<td>9.5</td>
<td>21.09</td>
<td>5.41</td>
<td>8,760</td>
<td>474</td>
<td>674</td>
</tr>
<tr>
<td>10.5</td>
<td>23.31</td>
<td>3.75</td>
<td>8,760</td>
<td>329</td>
<td>829</td>
</tr>
<tr>
<td>11.5</td>
<td>25.53</td>
<td>2.46</td>
<td>8,760</td>
<td>215</td>
<td>1,001</td>
</tr>
<tr>
<td>12.5</td>
<td>27.75</td>
<td>1.53</td>
<td>8,760</td>
<td>134</td>
<td>1,189</td>
</tr>
<tr>
<td>13.5</td>
<td>29.97</td>
<td>0.90</td>
<td>8,760</td>
<td>79</td>
<td>1,394</td>
</tr>
<tr>
<td>14.5</td>
<td>32.19</td>
<td>0.51</td>
<td>8,760</td>
<td>45</td>
<td>1,614</td>
</tr>
<tr>
<td>15.5</td>
<td>34.41</td>
<td>0.27</td>
<td>8,760</td>
<td>24</td>
<td>1,851</td>
</tr>
<tr>
<td>16.5</td>
<td>36.63</td>
<td>0.14</td>
<td>8,760</td>
<td>12</td>
<td>2,105</td>
</tr>
<tr>
<td>17.5</td>
<td>38.85</td>
<td>0.07</td>
<td>8,760</td>
<td>6</td>
<td>2,374</td>
</tr>
<tr>
<td>18.5</td>
<td>41.07</td>
<td>0.03</td>
<td>8,760</td>
<td>3</td>
<td>2,660</td>
</tr>
<tr>
<td>19.5</td>
<td>43.29</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>2,962</td>
</tr>
<tr>
<td>20.5</td>
<td>45.51</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>3,280</td>
</tr>
<tr>
<td>21.5</td>
<td>47.73</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>3,614</td>
</tr>
<tr>
<td>22.5</td>
<td>49.95</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>3,965</td>
</tr>
<tr>
<td>23.5</td>
<td>52.17</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>4,332</td>
</tr>
<tr>
<td>24.5</td>
<td>54.39</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>4,715</td>
</tr>
</tbody>
</table>
## Honeywell Wind Turbine: Model StarGate

<table>
<thead>
<tr>
<th>Wind Speed (m/s)</th>
<th>Wind Speed (MPH)</th>
<th>% At Wind Speed Class 4 Site</th>
<th>Annual Hours At Wind Speed (h/yr)</th>
<th>StarGate Annual Energy Generation (W)</th>
<th>StarGate Power Curve Data in Class 4 Wind (Total = 2752 kWh/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>1.11</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1.5</td>
<td>3.33</td>
<td>0.00</td>
<td>8,760</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>2.5</td>
<td>5.55</td>
<td>10.04</td>
<td>8,760</td>
<td>14</td>
<td>87</td>
</tr>
<tr>
<td>3.5</td>
<td>7.77</td>
<td>12.22</td>
<td>8,760</td>
<td>40</td>
<td>160</td>
</tr>
<tr>
<td>4.5</td>
<td>9.99</td>
<td>13.04</td>
<td>8,760</td>
<td>82</td>
<td>237</td>
</tr>
<tr>
<td>5.5</td>
<td>12.21</td>
<td>12.63</td>
<td>8,760</td>
<td>214</td>
<td>320</td>
</tr>
<tr>
<td>6.5</td>
<td>14.43</td>
<td>11.30</td>
<td>8,760</td>
<td>305</td>
<td>395</td>
</tr>
<tr>
<td>7.5</td>
<td>16.65</td>
<td>9.41</td>
<td>8,760</td>
<td>411</td>
<td>452</td>
</tr>
<tr>
<td>8.5</td>
<td>18.87</td>
<td>7.35</td>
<td>8,760</td>
<td>535</td>
<td>535</td>
</tr>
<tr>
<td>9.5</td>
<td>21.09</td>
<td>5.41</td>
<td>8,760</td>
<td>674</td>
<td>674</td>
</tr>
<tr>
<td>10.5</td>
<td>23.31</td>
<td>3.75</td>
<td>8,760</td>
<td>829</td>
<td>829</td>
</tr>
<tr>
<td>11.5</td>
<td>25.53</td>
<td>2.46</td>
<td>8,760</td>
<td>1,001</td>
<td>1,001</td>
</tr>
<tr>
<td>12.5</td>
<td>27.75</td>
<td>1.53</td>
<td>8,760</td>
<td>1,189</td>
<td>1,189</td>
</tr>
<tr>
<td>13.5</td>
<td>29.97</td>
<td>0.90</td>
<td>8,760</td>
<td>1,394</td>
<td>1,394</td>
</tr>
<tr>
<td>14.5</td>
<td>32.19</td>
<td>0.51</td>
<td>8,760</td>
<td>1,614</td>
<td>1,614</td>
</tr>
<tr>
<td>15.5</td>
<td>34.41</td>
<td>0.27</td>
<td>8,760</td>
<td>1,851</td>
<td>1,851</td>
</tr>
<tr>
<td>16.5</td>
<td>36.63</td>
<td>0.14</td>
<td>8,760</td>
<td>2,105</td>
<td>2,105</td>
</tr>
<tr>
<td>17.5</td>
<td>38.85</td>
<td>0.07</td>
<td>8,760</td>
<td>2,374</td>
<td>2,374</td>
</tr>
<tr>
<td>18.5</td>
<td>41.07</td>
<td>0.03</td>
<td>8,760</td>
<td>2,660</td>
<td>2,660</td>
</tr>
<tr>
<td>19.5</td>
<td>43.29</td>
<td>0.00</td>
<td>8,760</td>
<td>2,962</td>
<td>2,962</td>
</tr>
<tr>
<td>20.5</td>
<td>45.51</td>
<td>0.00</td>
<td>8,760</td>
<td>3,280</td>
<td>3,280</td>
</tr>
<tr>
<td>21.5</td>
<td>47.73</td>
<td>0.00</td>
<td>8,760</td>
<td>3,614</td>
<td>3,614</td>
</tr>
<tr>
<td>22.5</td>
<td>49.95</td>
<td>0.00</td>
<td>8,760</td>
<td>3,965</td>
<td>3,965</td>
</tr>
<tr>
<td>23.5</td>
<td>52.17</td>
<td>0.00</td>
<td>8,760</td>
<td>4,332</td>
<td>4,332</td>
</tr>
<tr>
<td>24.5</td>
<td>54.39</td>
<td>0.00</td>
<td>8,760</td>
<td>4,715</td>
<td>4,715</td>
</tr>
</tbody>
</table>

Total = 2752 kWh/yr
Wind Turbine Power Curve

- **Cut In Wind Speed**
- **Cut Off Wind Speed**
- **Plate Power**
Wind Turbine Operational Limits

Class 4 Wind: Rayleigh Distribution of 12.2 MPH (5.8 m/s)

![Diagram showing operational limits of wind turbines]

- **Typical Wind Turbines**
  - Operate within certain wind speed ranges
- **Windtronics Turbine Technology**
  - Operates more efficiently at lower wind speeds, extending operational limits

---

www.windtronics.com