Magnets

NVE offers several popular permanent magnets for use with magnetic sensors. In addition to individual magnets, NVE offers evaluation kits containing assortments of magnets, magnetic sensors, and printed circuit boards for sensor system development.

The following magnets are available:

<table>
<thead>
<tr>
<th>NVE Part No.</th>
<th>Description</th>
<th>Dimensions</th>
<th>Typ. Field at Face</th>
<th>Evalution Kits</th>
</tr>
</thead>
<tbody>
<tr>
<td>12030</td>
<td>Ferrite Bar Magnet</td>
<td>0.5&quot; L x 0.125&quot; W x 0.25&quot; T</td>
<td>150 mT</td>
<td>AG001-01, AG040, AG940, and others</td>
</tr>
<tr>
<td>12031</td>
<td>Ferrite Disk Magnet</td>
<td>0.312&quot; dia. x 0.125&quot; thick</td>
<td>90 mT</td>
<td>AG001-01</td>
</tr>
<tr>
<td>12032</td>
<td>Ferrite Bar Magnet</td>
<td>1&quot; L x 0.125&quot; W x 0.39&quot; T</td>
<td>180 mT</td>
<td>AG910-07; AG911-07</td>
</tr>
<tr>
<td>12216</td>
<td>Ferrite Disk Magnet</td>
<td>6 mm dia. x 4 mm thick</td>
<td>110 mT</td>
<td>AG920-07</td>
</tr>
<tr>
<td>12217</td>
<td>Ferrite Disk Magnet</td>
<td>3.5 mm dia. x 4 mm thick</td>
<td>170 mT</td>
<td>AG920-07</td>
</tr>
<tr>
<td>12249</td>
<td>Diametrically-Magnetized</td>
<td>12 mm dia. x 4 mm thick</td>
<td>100 mT</td>
<td>None (compatible with AAT/ADT/ADT/ASR-Series sensors)</td>
</tr>
<tr>
<td>12526</td>
<td>Disk Magnets</td>
<td>4 mm dia. x 4 mm thick</td>
<td>80 mT</td>
<td></td>
</tr>
<tr>
<td>12527</td>
<td></td>
<td>8 mm dia. x 4 mm thick</td>
<td>90 mT</td>
<td></td>
</tr>
<tr>
<td>12528</td>
<td>Disk Magnets</td>
<td>8 mm dia. x 8 mm thick</td>
<td>100 mT</td>
<td></td>
</tr>
<tr>
<td>12426</td>
<td>Alnico-5 Split-Pole Round Horseshoe</td>
<td>0.44&quot; dia. x 0.44&quot; H (see fig.)</td>
<td>110 mT</td>
<td>AAT/ADT/ADT/ASR-Series angle sensors</td>
</tr>
</tbody>
</table>

Use our Web application calculators (www.nve.com/spec/calculators.php) to estimate the magnet fields at various distances.
Disc Magnets (C5, Y25, or similar)

Bar Magnets (C1, Y10T, C5, Y25, or similar)

12249, 12526, 12527, and 12528 Diametrically-Magnetized Magnets (C5, Y25, or similar)

12426 Split-Pole Round Horseshoe Magnet (Alnico 5)
## Magnet Material Specifications

<table>
<thead>
<tr>
<th></th>
<th>C1/Y10T</th>
<th>C5/Y25</th>
<th>Alnico-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Operating Temperature</td>
<td>300°C</td>
<td>300°C</td>
<td>525°C</td>
</tr>
<tr>
<td>Curie Temperature</td>
<td>450°C</td>
<td>450°C</td>
<td>860°C</td>
</tr>
<tr>
<td>Temperature Coefficient of Flux Density</td>
<td>-0.20%/°C</td>
<td>-0.20%/°C</td>
<td>-0.02%/°C</td>
</tr>
<tr>
<td>Maximum Energy Product</td>
<td>1 MGOe</td>
<td>3.4 MGOe</td>
<td>5.5 MGOe</td>
</tr>
<tr>
<td>Residual Induction</td>
<td>2175 Gauss</td>
<td>3800 Gauss</td>
<td>12800 Gauss</td>
</tr>
<tr>
<td>Coercive Force</td>
<td>1800 Oe</td>
<td>2400 Oe</td>
<td>640 Oe</td>
</tr>
</tbody>
</table>
Material Characteristics

**C1/Y10T Magnetic Characteristics**

- Flux Density, Gauss (G)
  - -5000
  - -4000
  - -3000
  - -2000
  - -1000
  - 0
  - 5000
  - 4000
  - 3000
  - 2000
  - 1000

- Demagnetizing Force, Oersteds (Oe)
  - -40˚C
  - 20˚C
  - 80˚C
  - 120˚C

**C5/Y25 Magnetic Characteristics**

- Flux Density, Gauss (G)
  - -5000
  - -4000
  - -3000
  - -2000
  - -1000
  - 0
  - 5000
  - 4000
  - 3000
  - 2000
  - 1000

- Demagnetizing Force, Oersteds (Oe)
  - -40˚C
  - 20˚C
  - 80˚C
  - 120˚C
Alnico-5 Magnetic Characteristics

![Graph showing Alnico-5 Magnetic Characteristics]

- Flux Density, Gauss (G)
- Demagnetizing Force, Oersteds (Oe)
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Limiting values are stress ratings only and operation of the device at these or any other conditions above those given in the recommended operating conditions of IEC 60134 will cause permanent damage to the device. NVE does not accept liability in this respect.

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NVE Corporation • 11409 Valley View Road, Eden Prairie, MN 55344-3617 • (952) 829-9217 • www.nve.com

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