Ecopia’s hall effect measurement systems are complete systems for measuring resistivity, carrier concentration, mobility, hall coefficient, N/P type decision and so on for semiconductor samples.

Model no.
HMS-3000 series (Manual / RT, 77K, RT~773K / variable magnet field)
HMS-5000 series. (Auto / 80K ~ 350K, RT ~ 773K, 0.51 Tesla)
HMS-7000 (photonic hall effect)

Powerful performance.
Reasonable price.
Sustainable customer service.
Compact desktop design.
Easy to use and install.
Model no. HMS-3000 + MS51R magnet.

<table>
<thead>
<tr>
<th>NO</th>
<th>HMS-3000 Main body</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Size</td>
<td>32 x 30 x 10.5cm (W x D x H)</td>
</tr>
<tr>
<td>2</td>
<td>Weight</td>
<td>7.7kg</td>
</tr>
<tr>
<td>3</td>
<td>Carrier density</td>
<td>10e7~10e21(cm-3)</td>
</tr>
<tr>
<td>4</td>
<td>Resistivity</td>
<td>10e-4 ~ 10e7 (ohm.cm)</td>
</tr>
<tr>
<td>5</td>
<td>Mobility</td>
<td>1~10e7 (cm2/Vs)</td>
</tr>
<tr>
<td>6</td>
<td>Input current range</td>
<td>1nA ~ 20mA (DC type)</td>
</tr>
<tr>
<td>7</td>
<td>Output voltage</td>
<td>12V</td>
</tr>
<tr>
<td>8</td>
<td>Software</td>
<td>Win XP, Vista, Win7, Win8, Win10</td>
</tr>
<tr>
<td>9</td>
<td>Others in s/w</td>
<td>IV, IR graph plot, Hall coefficient, MR.</td>
</tr>
</tbody>
</table>

Software

![Software Images]
Magnet kits compatible with HMS-3000

<table>
<thead>
<tr>
<th>Main body</th>
<th>MS magnet</th>
<th>MP magnet</th>
<th>EVM magnet</th>
<th>High temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMS-3000</td>
<td>MS31R</td>
<td>MP31R</td>
<td>EVM-100R</td>
<td>HT55T3 (300°C)</td>
</tr>
<tr>
<td></td>
<td>MS37R</td>
<td>MP37R</td>
<td>EVM-100N2R</td>
<td>HT55T5 (500°C)</td>
</tr>
<tr>
<td></td>
<td>MS51R</td>
<td>MP51R</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MS100T</td>
<td>MP100T</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remark**

| Variable magnet field (0.27~0.97 Tesla) | Variable Temperature (RT ~ 773K) |

**Model no. MS51R**

* Compact desk top design.
  * 0.51 Tesla permanent magnet.
  * Measurable temp: RT, 77K

**Model no. MS100T**

* 1.0 Tesla permanent magnet.
  * Measurable temp: Room Temperature only.

**Model no. MP51R**

* Easy slide magnet moves on the rail.
  * Round magnets positioned on both ends, apply N to S and S to N polarity.
  * 0.51 Tesla permanent magnet.
  * Measurable temp: RT, 77K

**Model no. EVM-100R/ EVM-100N2R**

* Variable magnet kit
  * Magnet field: 0.25 ~ 0.97 Tesla
  * Measurable temp: RT, 77K.
  * Compatible with HMS-3000

Magnet field strength change as per air gap distance.
Magnet kits compatible with HMS-3000

Model no. HT55T3/ HT55T5

* 0.51 Tesla permanent magnet.
  • Measurable temp : RT ~ 300°C / 500°C.
  • Temp controller box is also supplied with.
  • Purge gas can flow inside the chamber.
  • Good to perform with PPM level gas, mixed with inert gas.

* Sample mounting board

Model no. SPCB-00

• Measurable size: 5mm x 5mm ~ 20mm x 20mm
• Measurable thickness: less than 1.5mm
• Gold plated clip and tip

Model no. SPCB-01

• Measurable size: 5mm x 5mm ~ 20mm x 20mm
• Measurable thickness: less than 2mm
• Gold plated clip and tip

Model no. SPCB-001

• Measurable size: 2mm x 2mm ~ 12mm x 12mm
• Measurable thickness: less than 1.5mm
• Gold plated clip and tip

Model no. SPCB-01C15

• Measurable size: 5mm x 5mm ~ 20mm x 20mm
• Measurable thickness: less than 2mm
• Gold plated clip and tip
• Round hole in the center.

* Contact materials.

- Contact material is to improve electrical conductivity by soldering it on four point corner of sample.

- In95%Sn5% compound
  - 50g
  - 100g.

- Gold paste 2g.
  - Silver extender is also provided.
Model no. HMS-5000+ AMP55T  
Model no. HMS-5300/ HMS-5500 + AMP55T + ( AHT55T3/AHT55T5 as an option )

HMS-5000 + AMP55T is also same with HMS-5300 + AMP55T and HMS-5500 + AMP55T in actual configuration. But, HMS-5000 main body controller is only able to use with AMP55T, and not possible to use with high temp magnet kit ( AHT55T3 , AHT55T5) later.

<table>
<thead>
<tr>
<th>NO</th>
<th>HMS5300 Main body</th>
<th>Description</th>
<th>NO</th>
<th>Magnet kit ( AMP55T)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Size</td>
<td>44 x 42 x 14cm (W x D x H)</td>
<td>1</td>
<td>size</td>
<td>68 x 22 x 11cm (W x D x H)</td>
</tr>
<tr>
<td>2</td>
<td>Weight</td>
<td>8.5kg</td>
<td>2</td>
<td>Weight</td>
<td>16kg</td>
</tr>
<tr>
<td>3</td>
<td>Carrier density</td>
<td>10e7~10e21(cm&lt;sup&gt;-3&lt;/sup&gt;)</td>
<td>3</td>
<td>Temp</td>
<td>80K~350K</td>
</tr>
<tr>
<td>4</td>
<td>Resistivity</td>
<td>10e-4 ~ 10e7 (ohm.cm)</td>
<td>4</td>
<td>Magnet flux density</td>
<td>0.51Tesla (+/-0.03T)</td>
</tr>
<tr>
<td>5</td>
<td>Mobility</td>
<td>1~10e7 (cm&lt;sup&gt;2&lt;/sup&gt;/Vs)</td>
<td>5</td>
<td>Temp Uniformity</td>
<td>+/- 0.5dC.</td>
</tr>
<tr>
<td>6</td>
<td>Input current range</td>
<td>1nA ~ 20mA (DC type)</td>
<td>6</td>
<td>Sample size</td>
<td>5mm x 5mm ~ 20mm x 20mm</td>
</tr>
<tr>
<td>7</td>
<td>Output voltage</td>
<td>12V</td>
<td>7</td>
<td>Sample holding kit (SH80350R) weight</td>
<td>3 kg</td>
</tr>
<tr>
<td>8</td>
<td>Software</td>
<td>Win XP, Vista, Win7, Win8, Win10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Others in s/w</td>
<td>IV, IR graph plot. Hall coefficient, MR.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Software – main measurement page
Model no. HMS-5300 + AHT55T3 + (AMP55T as an option)
Model no. HMS-5500 + AHT55T5 + (AMP55T as an option)

HMS-5000 mainbody is only able to be compatibly used with low temp kit AMP55T (80K~350K).
However, HMS-5300 and HMS-5500 main body controller are able to use with each high temp magnet kit model AHT55T3 for 300dc, and AHT55T5 for 500dc later.

<table>
<thead>
<tr>
<th>NO</th>
<th>HMS5300 Main body</th>
<th>Description</th>
<th>NO</th>
<th>Magnet kit (AHT55T3, AHT55T5)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Size</td>
<td>44 x 42 x 14cm (W x D x H)</td>
<td>1</td>
<td>Size</td>
<td>68 x 24 x 24cm (W x D x H)</td>
</tr>
<tr>
<td>2</td>
<td>Weight</td>
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<td>2</td>
<td>Weight</td>
<td>16kg</td>
</tr>
<tr>
<td>3</td>
<td>Carrier density</td>
<td>10e7~10e21(cm-3)</td>
<td>3</td>
<td>Temp</td>
<td>AHT55T3 (RT<del>300dC) AHT55T5 (RT</del>500dC)</td>
</tr>
<tr>
<td>4</td>
<td>Resistivity</td>
<td>10e-4 ~ 10e7 (ohm.cm)</td>
<td>4</td>
<td>Magnet flux density</td>
<td>0.51Tesla (+/-0.03T)</td>
</tr>
<tr>
<td>5</td>
<td>Mobility</td>
<td>1~10e7 (cm²/Vs)</td>
<td>5</td>
<td>Temp Uniformity</td>
<td>+/- 0.5dC.</td>
</tr>
<tr>
<td>6</td>
<td>Input current range</td>
<td>1nA ~ 20mA (DC type)</td>
<td>6</td>
<td>Sample size</td>
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<td>9</td>
<td>Others in s/w</td>
<td>IV, IR graph plot. Hall coefficient, MR.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Software** — electrical parameters vs variable temperature.
Model no. HMS-7000 + AMP55T + Photonic module  
+ ( AHT55T3 or AHT55T5 as an option )

Please refer to see magnet kit information in previous page. All of things are same in AMP55T, AHT55T3 and AHT55T5.

Software – light intensity vs carrier density, resistivity, mobility graph in green color.
Ecopia items that we have made and supplied.

HMS-3000/MP51R
- Hall effect. RT, 77K, 0.51T

HMS-5300/AMP55T
- Hall effect. 80K~350K, 0.51T

HMS-5300/AHT55T3
- Hall effect. RT~573K, 0.51T

SPCB
- sample mounting board

EVM-100R.
- Variable magnet (0.25~0.97T)

ETCP-2000
- Cryogenic probe (80K~573K)

EPS-300
- Compact probe station.

EPS-1000
- Compact probe station.

Optical probe
- photo detector.

EMP-11
- Manipulator.

Hot chuck
- RT~300dc.

ELT-1000
- LED tester with S/W

RTP-1300 (4", 6")
- Rapid Thermal Processing.

RTP-1200 (15 x 20mm)
- Rapid Thermal Processing.

MFC (Mass Flow Controller)
- Other vacuum accs.

ETMS-1000
- Seebeck coefficient Measurement

SE-300
- Magnetron sputter

M-150
- Mask aligner.

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