Online monitoring of thermal spray processes for the shop floor
Ensure high-quality, reproducible coatings

Accuraspray G3C gives you process-independent control of coating properties by providing precise, reliable, real-time measurements of the average particle temperature, velocity and flow rate, plus the vertical position (or deviation) and profile of the spray plume itself.

The Accuraspray G3C is based on proprietary Windows operating software that works in conjunction with the instrument’s custom optics and electronics to deliver real-time, high-precision data. The collected data is statistically analyzed, recorded and displayed in different forms. Various types of alarms can be triggered according to customer preference.

**Accuraspray G3C: available information and functions**

**Mean particle velocity and temperature**

**Plume vertical position, plume intensity and plume width**

**Tolerance intervals and alarms, plus strip charts for all parameters**

**Possibility to display 5 X strip charts for direct comparison**

**Recording of all measured parameters for off-line analysis**

**On-line adjustment of data acquisition parameters**

**CSV file formats**

**Save and replay complete experiments (including the video)**

**Built-in TCP/IP protocol for complete remote control of the system**

**Special optics for enlarged measurement volume (optional for plasma heads)**

**Alarm box (sound and visual alarms)**

**High-precision mounting plates for the sensor heads**

---

**Dimensions and weight**

**Sensor head**
185 mm X 105 mm X 65 mm
7.3 in. X 4.1 in. X 2.6 in.

**Power module**
390 mm X 260 mm X 60 mm
15.4 in. X 10.2 in. X 2.4 in.

**Wheeled carrying case**
800 mm X 520 mm X 400 mm
31.5 in. X 20.5 in. X 15.7 in.

**Laptop monitor**
396 mm /15.6 in. 1024 X 768 minimum resolution

---

**Plant supplies**

**Power requirements**
100 /120 – 200 /230 VAC, 50-60 Hz, auto-switch

**Plant to supply**
20-30 psi of clean, dry compressed air
### Technical specifications

#### Measurement ranges

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
<th>Precision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particle temperature range</td>
<td>1000°C and higher at 2.5%</td>
<td>at 2.5% precision</td>
</tr>
<tr>
<td></td>
<td>1832°F and higher at 2.5%</td>
<td></td>
</tr>
<tr>
<td>Particle velocity range</td>
<td>5 - 1200 m/s at 0.5%</td>
<td>at 0.5% precision</td>
</tr>
<tr>
<td></td>
<td>16.3 - 3900 ft/s at 0.5%</td>
<td></td>
</tr>
<tr>
<td>Spray plume intensity and peak height</td>
<td>0.5% precision</td>
<td></td>
</tr>
<tr>
<td>Spray plume width &amp; position</td>
<td>0.1 mm precision</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.004 in. precision</td>
<td></td>
</tr>
</tbody>
</table>

#### Measurement volume information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCD camera field of view</td>
<td>380 mm</td>
</tr>
<tr>
<td></td>
<td>15 in.</td>
</tr>
<tr>
<td>Accuraspray measurement volume</td>
<td>3.2 mm DIA x 25 mm DOF = 200 mm³</td>
</tr>
<tr>
<td></td>
<td>0.1 in. DIA x 1 in. DOF = 0.01 in³</td>
</tr>
</tbody>
</table>

#### Product options

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substrate temperature pyrometer</td>
<td>From -18 to 525°C</td>
</tr>
<tr>
<td></td>
<td>From 0 to 977°F</td>
</tr>
<tr>
<td>Alarm box</td>
<td>Visual and sound alarm</td>
</tr>
<tr>
<td>Larger measurement volume</td>
<td>3.2 mm X 20 mm X 25 mm = 1600 mm³</td>
</tr>
<tr>
<td></td>
<td>0.1 in. X 0.8 in. X 1 in. = 0.1 in³</td>
</tr>
</tbody>
</table>

---

Get the Accuraspray G3C advantage:

- **Ppks/Cpks**: Enhanced coating reproducibility
- **Less coupons required**: Less coupons required
- **Improved deposit efficiency**: Improved deposit efficiency
- **Extended lifetime of consumables**: Extended lifetime of consumables
- **Better forecast of coating thickness**: Better forecast of coating thickness
- **Real-time comparison to tolerance windows**: Real-time comparison to tolerance windows
- **Quicker spray parameters development**: Quicker spray parameters development
- **Easy set-up and operation**: Easy set-up and operation
“Thanks to the Accuraspray, we have been able to achieve process Ppks over 1.5— even for very challenging coatings, such as thick, porous TBCs sprayed using new advanced gun concepts. The Accuraspray has also proven invaluable for process parameter development, for establishing tolerance windows, for troubleshooting and, finally, as a go/no go instrument.”

The Thermal Spray Team at GKN Aerospace Sweden

References
Chromalloy
General Electric
GKN Aerospace
Mitsubishi Heavy Industries
Oerlikon Metco
Pratt & Whitney
Progressive Surface
Rolls-Royce
Siemens