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VESUVIUS reserves the right to modify and/or improve the equipment as described and specified in this leaflet, at any time according to the state-of-art. CNC – patent applied for in various countries.

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For more information on this product and on our complete package of solutions please contact our local service center:
Automatic Mould Level Control with Calibrated Nozzle (Billet Casters)

AML-C-Opto is a full package solution offering a high performance proven system that is safe, easy to implement and operate. The system is designed for automatic mould level control on a continuous casting machine producing billets with calibrated nozzle.

**AMLC-Opto Features**

- Automatic extraction speed control
- Optical sensor with image analysis software for mould level measurement
- Measurement of the whole meniscus level at mould backside (and not only spot measurement)
- Accurate measurement and fast response time
- Easy adaptation to various mould sizes
- Intricately designed optical sensors incorporating digital filters to reduce interference from mould conditions such as fumes and flames
- No measurement dead zone at top of mould
- Constant sensitivity for any steel level within the measuring range

**AMLC-Opto Benefits**

- Possibility of high meniscus setting to reduce the stream impact
- Typically one sensor for one strand
- Casting different mould sizes without sensor manipulation
- Non radioactive technology => safe for user and no radioactivity management cost
- Includes remote view of steel level in mould
- Possibility to demonstrate performance in one day trial without disturbing production

**OptoNum™ Mould Level Sensor Performances**

- **Engineering Options**
  - To automate stream deflection launder
  - For automatic emergency strand shut off by CNC Nozzle Changer
  - Reduced tundish cost (refractory, manpower, energy)
  - Retention of casting sequence for increased casting yields
  - Improved operator safety
  - Change of nozzle diameter and / or casting speed whenever requested
  - Casting interruption / restart of individual strand
  - Safe emergency shut off using a blank plate

**Detailed Components of AMLC-Opto Solution**

- OptoNum™ Mould Level Sensor
- Supervision panel with monitors and control pad
- Adaptation plate with AMLC control elements for integration in existing operator panel
- Main control cabinet with PLC for AMLC
- Monitor with measurement overlay

**Typical range of measurement (ROM), depending on lens and position to target**

- 0-150 mm (from top of copper)
- 800-1500 mm

**Typical resolution**

- 0.5% of the ROM (± 0.5 mm for 100 mm ROM)

**Framerate**

- 40 ms
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**OptoNum™ Mould Level Sensor Performances**

<table>
<thead>
<tr>
<th>Typical range of measurement (ROI), depending on lens and position to target</th>
<th>0-150 mm from top of copper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from sensor unit to ROI</td>
<td>800-1500 mm</td>
</tr>
<tr>
<td>Typical resolution</td>
<td>0.5% of the ROI or 0.5 mm for 100 mm ROI</td>
</tr>
<tr>
<td>Frame rate</td>
<td>40 ms</td>
</tr>
</tbody>
</table>

**Engineering Options**

- To automate stream deflection launder
- For automatic emergency strand shut-off by CNC Nozzle Changer

**Possible Interface with CNC2™ & SYS120™ Calibrated Nozzle Changers**

- Reduced tundish cost (refractory, manpower, energy)
- Retention of casting sequence for increased casting yields
- Improved operator safety
- Change of nozzle diameter and / or casting speed whenever requested
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- Safe emergency shut-off using a blank plate

**Detailed Components of AMLC-Opto Solution**

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**CNC2 Calibrated Nozzle Changer**

- Extension of casting sequence for increased casting yield
- Improved operator safety
- Change of nozzle diameter and / or casting speed whenever requested
- Casting interruption / restart of individual strand
- Safe emergency shut-off using a blank plate