

## AKKREDITOITU KALIBROINTILABORATORIO

## ACCREDITED CALIBRATION LABORATORY



**OY G.W. BERG & CO AB**  
**VAAKAHUOLTO**

*OY G.W. BERG & CO AB*  
*WEIGHING SCALES SERVICES*

| Tunnus<br>Code | Laboratorio<br>Laboratory                                          | Osoite<br>Address                                                                          | www<br>www                                 |
|----------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------|
| K029           | Oy G.W. Berg & Co Ab<br>Vaakahuolto                                | (Mäkituvantie 7)<br>PL 199<br>01511 VANTAA                                                 | <a href="http://www.gwb.fi">www.gwb.fi</a> |
|                | <i>Oy G.W. Berg &amp; Co Ab</i><br><i>Weighing scales services</i> | <i>(Mäkituvantie 7)</i><br><i>P.O. Box 199</i><br><i>FI-01511 VANTAA</i><br><i>FINLAND</i> | <a href="http://www.gwb.fi">www.gwb.fi</a> |
|                | Oy G.W. Berg & Co Ab<br>Vaakahuolto                                | Ilmarisenkatu 12<br>20520 TURKU                                                            | <a href="http://www.gwb.fi">www.gwb.fi</a> |
|                | <i>Oy G.W. Berg &amp; Co Ab</i><br><i>Weighing scales services</i> | <i>Ilmarisenkatu 12</i><br><i>FI-20520 TURKU</i><br><i>FINLAND</i>                         | <a href="http://www.gwb.fi">www.gwb.fi</a> |

**Kalibrointialat**  
**Fields of calibration**

**Mekaaniset suureet**  
**Mechanical quantities**

**Dimensionaaliset suureet**  
**Dimensional quantities**

| PÄTEVYYSALUE<br>SCOPE OF ACCREDITATION                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                      |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Menetelmä / kohde<br><i>Method / object</i>                                                     | Mittausalue<br><i>Measurement range</i>                                                                                                                                                                                                                                                                                                                                                                                      | Laajennettu<br>mittausepävarmuus (k=2)<br><i>Expanded Uncertainty (k=2)</i>          |
| <b>Mekaaniset suureet, Massa</b><br><i>Mechanical quantities, Mass</i>                          |                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                      |
| Punnukset<br><i>Weights</i><br>OIML R111:2004                                                   | $1 \text{ mg} \leq m \leq 50 \text{ mg}$<br>$50 \text{ mg} < m \leq 50 \text{ g}$<br>$50 \text{ g} < m \leq 200 \text{ g}$<br>$200 \text{ g} < m < 1\,000 \text{ g}$<br>$1 \text{ kg}$<br>$2 \text{ kg}$<br>$5 \text{ kg}$<br>$10 \text{ kg}$<br>$20 \text{ kg}$                                                                                                                                                             | 0,007 mg<br>0,05 mg<br>0,5 mg<br>9 mg<br>17 mg<br>41 mg<br>84 mg<br>200 mg<br>290 mg |
| Ei-automaattiset vaa'at<br><i>Non-automatic weighing instruments</i><br>EURAMET/cg-18 v4.0:2015 | $1 \text{ mg} \leq m \leq 50 \text{ mg}$<br>$50 \text{ mg} < m \leq 50 \text{ g}$<br>$50 \text{ g} < m \leq 200 \text{ g}$<br>$200 \text{ g} < m \leq 1\,000 \text{ g}$<br>$1\,000 \text{ g} < m \leq 2\,000 \text{ g}$<br>$2\,000 \text{ g} < m \leq 5\,000 \text{ g}$<br>$5\,000 \text{ g} < m \leq 10\,000 \text{ g}$<br>$10\,000 \text{ g} < m \leq 20\,000 \text{ g}$<br>$20\,000 \text{ g} < m \leq 35\,000 \text{ g}$ | 0,007 mg<br>0,05 mg<br>0,5 mg<br>9 mg<br>17 mg<br>41 mg<br>84 mg<br>200 mg<br>290 mg |
| Automaattiset linjavaa'at<br><i>Automatic catchweighing instruments</i><br>OIML R51-1:2006      | $1 \text{ mg} \leq m \leq 50 \text{ mg}$<br>$50 \text{ mg} < m \leq 50 \text{ g}$<br>$50 \text{ g} < m \leq 200 \text{ g}$<br>$200 \text{ g} < m \leq 1\,000 \text{ g}$<br>$1\,000 \text{ g} < m \leq 2\,000 \text{ g}$<br>$2\,000 \text{ g} < m \leq 5\,000 \text{ g}$<br>$5\,000 \text{ g} < m \leq 10\,000 \text{ g}$<br>$10\,000 \text{ g} < m \leq 20\,000 \text{ g}$<br>$20\,000 \text{ g} < m \leq 35\,000 \text{ g}$ | 0,007 mg<br>0,05 mg<br>0,5 mg<br>9 mg<br>17 mg<br>41 mg<br>84 mg<br>200 mg<br>290 mg |
|                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                              | <i>m = massa</i><br><i>m = mass</i>                                                  |

| PÄTEVYYSALUE<br>SCOPE OF ACCREDITATION                                                                      |                                                |                                                                             |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------|
| Menetelmä / kohde<br><i>Method / object</i>                                                                 | Mittausalue<br><i>Measurement range</i>        | Laajennettu<br>mittausepävarmuus (k=2)<br><i>Expanded Uncertainty (k=2)</i> |
| <b>Mekaaniset suureet, Massa, Kenttäkalibrointi</b><br><i>Mechanical quantities, Mass, Site calibration</i> |                                                |                                                                             |
| Punnukset<br><i>Weights</i><br>OIML R111:2004                                                               | $1 \text{ mg} \leq m \leq 50 \text{ mg}$       | 0,007 mg                                                                    |
|                                                                                                             | $50 \text{ mg} < m \leq 50 \text{ g}$          | 0,05 mg                                                                     |
|                                                                                                             | $50 \text{ g} < m \leq 200 \text{ g}$          | 0,5 mg                                                                      |
|                                                                                                             | $200 \text{ g} < m < 1\,000 \text{ g}$         | 9 mg                                                                        |
|                                                                                                             | 1 kg                                           | 17 mg                                                                       |
|                                                                                                             | 2 kg                                           | 41 mg                                                                       |
|                                                                                                             | 5 kg                                           | 84 mg                                                                       |
|                                                                                                             | 10 kg                                          | 200 mg                                                                      |
| Ei-automaattiset vaa'at<br><i>Non-automatic weighing instruments</i><br>EURAMET/cg-18 v4.0:2015             | $1 \text{ mg} \leq m \leq 50 \text{ mg}$       | 0,007 mg                                                                    |
|                                                                                                             | $50 \text{ mg} < m \leq 50 \text{ g}$          | 0,05 mg                                                                     |
|                                                                                                             | $50 \text{ g} < m \leq 200 \text{ g}$          | 0,5 mg                                                                      |
|                                                                                                             | $200 \text{ g} < m \leq 1\,000 \text{ g}$      | 9 mg                                                                        |
|                                                                                                             | $1\,000 \text{ g} < m \leq 2\,000 \text{ g}$   | 17 mg                                                                       |
|                                                                                                             | $2\,000 \text{ g} < m \leq 5\,000 \text{ g}$   | 41 mg                                                                       |
|                                                                                                             | $5\,000 \text{ g} < m \leq 10\,000 \text{ g}$  | 84 mg                                                                       |
|                                                                                                             | $10\,000 \text{ g} < m \leq 20\,000 \text{ g}$ | 200 mg                                                                      |
| Automaattiset linjavaa'at<br><i>Automatic catchweighing instruments</i><br>OIML R51-1:2006M                 | $1 \text{ mg} \leq m \leq 50 \text{ mg}$       | 0,007 mg                                                                    |
|                                                                                                             | $50 \text{ mg} < m \leq 50 \text{ g}$          | 0,05 mg                                                                     |
|                                                                                                             | $50 \text{ g} < m \leq 200 \text{ g}$          | 0,5 mg                                                                      |
|                                                                                                             | $200 \text{ g} < m \leq 1\,000 \text{ g}$      | 9 mg                                                                        |
|                                                                                                             | $1\,000 \text{ g} < m \leq 2\,000 \text{ g}$   | 17 mg                                                                       |
|                                                                                                             | $2\,000 \text{ g} < m \leq 5\,000 \text{ g}$   | 41 mg                                                                       |
|                                                                                                             | $5\,000 \text{ g} < m \leq 10\,000 \text{ g}$  | 84 mg                                                                       |
|                                                                                                             | $10\,000 \text{ g} < m \leq 20\,000 \text{ g}$ | 200 mg                                                                      |
|                                                                                                             |                                                | 290 mg                                                                      |
|                                                                                                             |                                                | <i>m = massa</i><br><i>m = mass</i>                                         |

| PÄTEVYYSALUE<br>SCOPE OF ACCREDITATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------|
| Menetelmä / kohde<br><i>Method / object</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mittausalue<br><i>Measurement range</i>            | Laajennettu<br>mittausepävarmuus (k=2)<br><i>Expanded Uncertainty (k=2)</i> |
| <b>Dimensionaaliset suureet, Tilavuus</b><br><i>Dimensional quantities, Volume</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                    |                                                                             |
| Yksikanavapipetit<br><i>Single channel pipettes</i><br>Sisäinen menetelmä, perustuu kumottuun standardiin / <i>In-house method based on standard</i> SFS-EN ISO 8655:2002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Nimellistilavuus<br><i>Nominal volume</i>          |                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $0,1 \mu\text{l} \leq V \leq 1 \mu\text{l}$        | 20 nl                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $1 \mu\text{l} < V \leq 10 \mu\text{l}$            | 100 nl                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $10 \mu\text{l} < V \leq 50 \mu\text{l}$           | 200 nl                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $50 \mu\text{l} < V \leq 200 \mu\text{l}$          | 300 nl                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $200 \mu\text{l} < V \leq 600 \mu\text{l}$         | 1 600 nl                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $600 \mu\text{l} < V \leq 5\,000 \mu\text{l}$      | 2 000 nl                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $5\,000 \mu\text{l} < V \leq 10\,000 \mu\text{l}$  | 6 000 nl                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $10\,000 \mu\text{l} < V \leq 20\,000 \mu\text{l}$ | 10 000 nl                                                                   |
| Monikanavapipetit<br><i>Multi channel pipettes</i><br>Sisäinen menetelmä, perustuu kumottuun standardiin / <i>In-house method based on standard</i> SFS-EN ISO 8655:2002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Nimellistilavuus<br><i>Nominal volume</i>          |                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $1 \mu\text{l} \leq V \leq 10 \mu\text{l}$         | 300 nl                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $10 \mu\text{l} < V \leq 50 \mu\text{l}$           | 500 nl                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $50 \mu\text{l} < V \leq 300 \mu\text{l}$          | 2 000 nl                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | $300 \mu\text{l} < V \leq 1200 \mu\text{l}$        | 5 000 nl                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                    | V = tilavuus<br>V = volume                                                  |
| <p>CMC on kalibrointi- ja mittauskyky, joka on saavutettavissa asiakkaan laitteille normaaleissa olosuhteissa, ja se kuvataan esittämällä mittaus suure tai referenssimateriaali, kalibrointimenetelmä, kalibroitava laite/kohde, mittausalue sekä mittausepävarmuus. Huom. Termeillä CMC (Calibration and Measurement Capability) ja BMC (Best Measurement Capability) tarkoitetaan samaa asiaa.</p> <p><i>A CMC is a calibration and measurement capability available to customers under normal conditions, and it is expressed in terms of measurand or reference material; calibration method, type of instrument/object to be calibrated, measurement range and uncertainty of measurement. Note: The meanings of terms CMC (Calibration and Measurement Capability) and BMC (Best Measurement Capability) are identical.</i></p> |                                                    |                                                                             |