

CCEM-K6.a, EUROMET.EM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a

Key comparison CCEM-K6.a

MEASURAND: AC/DC voltage transfer difference

MEASUREMENT FREQUENCY: 1 kHz

NOMINAL VOLTAGE: 3 V

$\delta_{LAB\ i}$: result of measurement carried out by laboratory *i*

$U_{LAB\ i}$: expanded uncertainty ($k = 2$) of $\delta_{LAB\ i}$

LAB <i>i</i>	$\delta_{LAB\ i} / 10^{-6}$	$U_{LAB\ i} / 10^{-6}$	Date of measurement
NPL	-0.1	1.8	Jan 94
INRIM	0.1	0.6	Feb 94
VSL	-0.1	1.8	Mar 94
SP	0.2	1.0	Aug 94
METAS	0.0	1.0	Sep 94
IPQ	0.0	1.3	Feb 95
CEM	-0.1	1.2	Mar 95
NRC	-0.1	0.4	Apr 95
NIST	-0.2	0.9	Jun 95
KRISS	0.0	2.7	Sep 95
NPLI	0.3	1.0	Dec 95
INTI	0.3	2.0	Apr 96
NIM	-0.5	0.6	May 96
JV	0.1	2.4	Jan 97
BEV	0.0	1.2	Oct 97
VNIIM	0.2	1.5	Mar 98
NMIA	-0.2	1.5	Dec 98
NMISA	0.4	2.4	Jan 99
MIKES	0.0	1.0	Apr 99
AREPA	-0.6	2.0	May 99
LNE	0.1	1.0	Jun 99
PTB	0.1	0.4	Aug 93, Jan 95, Mar 96, Oct 96, Oct 98, May 99

Key comparison EUROMET.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 1 kHz
NOMINAL VOLTAGE: 3 V

$\delta_{\text{LAB } i\text{-EUR}}$: result of measurement carried out by laboratory *i* participant in EUROMET.EM-K6.a
 $U_{\text{LAB } i\text{-EUR}}$: expanded uncertainty ($k = 2$) of $\delta_{\text{LAB } i\text{-EUR}}$

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-EUR}}$ / 10^{-6}	$U_{\text{LAB } i\text{-EUR}}$ / 10^{-6}	Date of measurement
PTB	0.9	2	16 to 20 Feb 06, 18 to 21 Aug 06
BIM	0.1	16	23 Mar 06 to 19 Jun 06

Key comparison SIM.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 1 kHz
NOMINAL VOLTAGE: 3 V

$\delta_{\text{LAB } i\text{-SIM}}$: result of measurement carried out by laboratory *i* participant in SIM.EM-K6.a
 $U_{\text{LAB } i\text{-SIM}}$: expanded uncertainty ($k = 2$) of $\delta_{\text{LAB } i\text{-SIM}}$
 $u_{\text{LAB } i\text{-SIM}}$: standard uncertainty ($k = 1$) of $\delta_{\text{LAB } i\text{-SIM}}$

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	$U_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	Date of measurement
NIST	0.0	3.2	Jan to Feb 04
INMETRO	1.0	4	28 Jun to 28 Jul 04
CENAM	0.9	6	03 to 20 Aug 04
NRC	0.3	1.2	Sep to Oct 04

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	$u_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	Date of measurement
UTE	3.0	5.5	18 May to 22 Jun 04

Key comparison CCEM-K6.a

MEASURAND: AC/DC voltage transfer difference

MEASUREMENT FREQUENCY: 20 kHz

NOMINAL VOLTAGE: 3 V

$\delta_{LAB\ i}$: result of measurement carried out by laboratory *i*

$U_{LAB\ i}$: expanded uncertainty ($k = 2$) of $\delta_{LAB\ i}$

LAB <i>i</i>	$\delta_{LAB\ i} / 10^{-6}$	$U_{LAB\ i} / 10^{-6}$	Date of measurement
NPL	0.9	2.0	Jan 94
INRIM	0.7	0.8	Feb 94
VSL	1.4	2.6	Mar 94
SP	1.4	3.2	Aug 94
METAS	1.4	2.0	Sep 94
IPQ	1.5	4.0	Feb 95
CEM	0.7	1.4	Mar 95
NRC	1.4	1.2	Apr 95
NIST	1.3	1.3	Jun 95
KRISS	1.4	5.6	Sep 95
NPLI	0.4	1.0	Dec 95
INTI	0.2	3.0	Apr 96
JV	1.1	3.0	Jan 97
BEV	1.1	2.2	Oct 97
VNIIM	1.0	6.0	Mar 98
NMIA	0.7	2.2	Dec 98
NMISA	1.3	3.0	Jan 99
MIKES	1.4	2.8	Apr 99
AREPA	0.3	2.0	May 99
LNE	1.2	2.2	Jun 99
PTB	1.2	1.0	Aug 93, Jan 95, Mar 96, Oct 96, Oct 98, May 99

Key comparison EUROMET.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 20 kHz
NOMINAL VOLTAGE: 3 V

$\delta_{\text{LAB } i\text{-EUR}}$: result of measurement carried out by laboratory *i* participant in EUROMET.EM-K6.a
 $U_{\text{LAB } i\text{-EUR}}$: expanded uncertainty ($k = 2$) of $\delta_{\text{LAB } i\text{-EUR}}$

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-EUR}}$ / 10 ⁻⁶	$U_{\text{LAB } i\text{-EUR}}$ / 10 ⁻⁶	Date of measurement
PTB	7.6	2	16 to 20 Feb 06, 18 to 21 Aug 06
BIM	1.4	13	23 Mar 06 to 19 Jun 06

Key comparison SIM.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 20 kHz
NOMINAL VOLTAGE: 3 V

$\delta_{\text{LAB } i\text{-SIM}}$: result of measurement carried out by laboratory *i* participant in SIM.EM-K6.a
 $U_{\text{LAB } i\text{-SIM}}$: expanded uncertainty ($k = 2$) of $\delta_{\text{LAB } i\text{-SIM}}$
 $u_{\text{LAB } i\text{-SIM}}$: standard uncertainty ($k = 1$) of $\delta_{\text{LAB } i\text{-SIM}}$

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	$U_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	Date of measurement
NIST	2.0	3.2	Jan to Feb 04
INMETRO	4.0	4	28 Jun to 28 Jul 04
CENAM	2.5	6	03 to 20 Aug 04
NRC	2.5	2.8	Sep to Oct 04

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	$u_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	Date of measurement
UTE	6.0	5.4	18 May to 22 Jun 04

Key comparison CCEM-K6.a

MEASURAND: AC/DC voltage transfer difference

MEASUREMENT FREQUENCY: 100 kHz

NOMINAL VOLTAGE: 3 V

$\delta_{LAB\ i}$: result of measurement carried out by laboratory *i*

$U_{LAB\ i}$: expanded uncertainty ($k = 2$) of $\delta_{LAB\ i}$

LAB <i>i</i>	$\delta_{LAB\ i} / 10^{-6}$	$U_{LAB\ i} / 10^{-6}$	Date of measurement
NPL	8.7	2.6	Jan 94
INRIM	6.1	2.0	Feb 94
VSL	7.1	5.6	Mar 94
SP	7.7	4.0	Aug 94
METAS	7.7	5.4	Sep 94
IPQ	7.5	8.0	Feb 95
CEM	8.7	1.8	Mar 95
NRC	8.6	2.0	Apr 95
NIST	8.4	2.0	Jun 95
KRISS	7.4	5.6	Sep 95
NPLI	5.7	2.4	Dec 95
INTI	6.6	6.0	Apr 96
JV	6.1	4.7	Jan 97
BEV	6.4	2.4	Oct 97
VNIIM	4.2	10	Mar 98
NMIA	5.9	4.6	Dec 98
NMISA	4.9	3.8	Jan 99
MIKES	6.5	3.0	Apr 99
AREPA	7.0	2.0	May 99
LNE	7.7	4.6	Jun 99
PTB	6.3	2.0	Aug 93, Jan 95, Mar 96, Oct 96, Oct 98, May 99

Key comparison EUROMET.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 100 kHz
NOMINAL VOLTAGE: 3 V

$\delta_{\text{LAB } i\text{-EUR}}$: result of measurement carried out by laboratory *i* participant in EUROMET.EM-K6.a
 $U_{\text{LAB } i\text{-EUR}}$: expanded uncertainty ($k = 2$) of $\delta_{\text{LAB } i\text{-EUR}}$

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-EUR}}$ / 10 ⁻⁶	$U_{\text{LAB } i\text{-EUR}}$ / 10 ⁻⁶	Date of measurement
PTB	22.0	3	16 to 20 Feb 06, 18 to 21 Aug 06
BIM	15.2	16	23 Mar 06 to 19 Jun 06

Key comparison SIM.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 100 kHz
NOMINAL VOLTAGE: 3 V

$\delta_{\text{LAB } i\text{-SIM}}$: result of measurement carried out by laboratory *i* participant in SIM.EM-K6.a
 $U_{\text{LAB } i\text{-SIM}}$: expanded uncertainty ($k = 2$) of $\delta_{\text{LAB } i\text{-SIM}}$
 $u_{\text{LAB } i\text{-SIM}}$: standard uncertainty ($k = 1$) of $\delta_{\text{LAB } i\text{-SIM}}$

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	$U_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	Date of measurement
NIST	16.0	8.5	Jan to Feb 04
INMETRO	13.0	5	28 Jun to 28 Jul 04
CENAM	16.3	8	03 to 20 Aug 04
NRC	16.5	7.2	Sep to Oct 04

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	$u_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	Date of measurement
UTE	18.0	9.5	18 May to 22 Jun 04

Key comparison CCEM-K6.a

MEASURAND: AC/DC voltage transfer difference

MEASUREMENT FREQUENCY: 1 MHz

NOMINAL VOLTAGE: 3 V

$\delta_{\text{LAB } i}$: result of measurement carried out by laboratory *i*

$U_{\text{LAB } i}$: expanded uncertainty ($k = 2$) of $\delta_{\text{LAB } i}$

LAB <i>i</i>	$\delta_{\text{LAB } i} / 10^{-6}$	$U_{\text{LAB } i} / 10^{-6}$	Date of measurement
NPL	127	10	Jan 94
INRIM	120	13	Feb 94
VSL	128	20	Mar 94
SP	112	20	Aug 94
METAS	116	42	Sep 94
IPQ	104	70	Feb 95
CEM	111	20	Mar 95
NRC	111	13	Apr 95
NIST	129	21	Jun 95
KRISS	112	100	Sep 95
NPLI	115	22	Dec 95
INTI	98	24	Apr 96
JV	110	26	Jan 97
BEV	114	31	Oct 97
VNIIM	103	32	Mar 98
NMIA	120	24	Dec 98
NMISA	100	31	Jan 99
MIKES	114	30	Apr 99
AREPA	99	28	May 99
LNE	148	41	Jun 99
PTB	107	24	Aug 93, Jan 95, Mar 96, Oct 96, Oct 98, May 99

Key comparison SIM.EM-K6.a

MEASURAND: AC/DC voltage transfer difference

MEASUREMENT FREQUENCY: 1 MHz

NOMINAL VOLTAGE: 3 V

$\delta_{\text{LAB } i\text{-SIM}}$: result of measurement carried out by laboratory *i* participant in SIM.EM-K6.a

$U_{\text{LAB } i\text{-SIM}}$: expanded uncertainty ($k = 2$) of $\delta_{\text{LAB } i\text{-SIM}}$

$u_{\text{LAB } i\text{-SIM}}$: standard uncertainty ($k = 1$) of $\delta_{\text{LAB } i\text{-SIM}}$

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	$U_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	Date of measurement
NIST	1.0	17.2	Jan to Feb 04
INMETRO	-22.0	32	28 Jun to 28 Jul 04
CENAM	4.4	38	03 to 20 Aug 04
NRC	10	17	Sep to Oct 04

LAB <i>i</i>	$\delta_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	$u_{\text{LAB } i\text{-SIM}}$ / $\mu\text{V/V}$	Date of measurement
UTE	3.0	30	18 May to 22 Jun 04

Key comparison APMP.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 1 kHz, 20 kHz, 100 kHz, and 1 MHz
NOMINAL VOLTAGE: 3 V

Measurement results of the participants in key comparison APMP.EM-K6.a are given in Table 4 (Section 10, on page 8) of the Final Report. They were taken between 2000 and 2003.

Key comparison SIM.EM-K6.1

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 1 kHz, 20 kHz, 100 kHz, and 1 MHz
NOMINAL VOLTAGE: 1.5 V

Measurement results of the participants in key comparison SIM.EM-K6.1 are given in Table II (Section 8.1, on page 7) of the Final Report. They were taken between September 2012 and January 2013.

Key comparison COOMET.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
MEASUREMENT FREQUENCY: 20 Hz, 1 kHz, 20 kHz, 100 kHz, and 1 MHz
NOMINAL VOLTAGE: 3 V

Measurement results of the participants in key comparison COOMET.EM-K6.a are given in Table 5 (Section 7.1, on page 7) of the Final Report. They were taken between May 2013 and March 2014.

CCEM-K6.a, EUROMET.EM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a

Key comparison CCEM-K6.a

MEASURAND: AC/DC voltage transfer difference

NOMINAL VOLTAGE: 3 V

MEASUREMENT FREQUENCY: 1 kHz, 20 kHz, 100 kHz, and 1 MHz

The key comparison reference value δ_{REF} of this comparison at 1 kHz is taken from the theoretical and experimental evaluation of MJTCs* at PTB to be $\delta_{REF} = 0 \times 10^{-6}$. The expanded uncertainty U_{REF} of δ_{REF} is also taken from the theoretical and experimental evaluation of MJTCs at PTB to be $U_{REF} = 0.4 \times 10^{-6}$ ($k = 2$). No transfer uncertainty has to be taken into account.

* MJTCs: Multi-junction thermal voltage converters

The key comparison reference value δ_{REF} of this comparison at 20 kHz, 100 kHz and 1 MHz is computed as a weighted mean using weights proportional to the reciprocal of the square of the uncertainty of the laboratories $U_{LAB i}$. The results from seven participants at 20 kHz and 100 kHz and from eight participants at 1 MHz with independent realisations of their AC/DC voltage transfer standards are taken into account. The expanded uncertainty U_{REF} of δ_{REF} is the standard uncertainty of the weighted mean multiplied by $k = 2$.

No transfer uncertainty has to be taken into account.

	Measurement frequency			
	1 kHz	20 kHz	100 kHz	1 MHz
δ_{REF}	0×10^{-6}	0.9×10^{-6}	7.2×10^{-6}	121×10^{-6}
$U_{REF} (k = 2)$	0.4×10^{-6}	0.52×10^{-6}	1.0×10^{-6}	6.7×10^{-6}

The degree of equivalence of each laboratory i with respect to the key comparison reference value is given by a pair of terms: $D_i = (\delta_{LAB i} - \delta_{REF})$ and U_i , its expanded uncertainty ($k = 2$), $U_i = (U_{LAB i}^2 + U_{REF}^2)^{1/2}$.

For those laboratories which contribute to the reference value $U_i = (U_{LAB i}^2 - U_{REF}^2)^{1/2}$.

The Working Group on Key Comparisons of the CCEM judges that significant correlations exist among the results of participants whose reference standard of AC/DC difference is based on calibrations carried out by another participating laboratory. Although these correlations have a profound effect on the uncertainty of degrees of equivalence between pairs of NMIs, a sufficiently accurate evaluation of covariance terms has not been identified. Consequently this Appendix B entry does not include explicit values and uncertainties of degrees of equivalence among pairs of participants.

Linking EUROMET.EM-K6.a to CCEM-K6.a

PTB provides the link between key comparisons CCEM-K6.a and EUROMET.EM-K6.a. The linkage process is described in section 5.2 of the EUROMET.EM-K6.a Final Report.

Linking SIM.EM-K6.a to CCEM-K6.a

NRC and NIST provide the link between key comparisons CCEM-K6.a and SIM.EM-K6.a. The linkage process is described in section 11 of the SIM.EM-K6.a Final Report.

Linking APMP.EM-K6.a to CCEM-K6.a

NMIA and PTB provide the link between key comparisons CCEM-K6.a and APMP.EM-K6.a. The linkage process is described in section 12 of the APMP.EM-K6.a Final Report.

Linking SIM.EM-K6.1 to CCEM-K6.a

LNE provides the link between key comparisons CCEM-K6.a and SIM.EM-K6.1. The linkage process is described in section 9.1 of the SIM.EM-K6.1 Final Report.

Linking COOMET.EM-K6.a to CCEM-K6.a

VNIIM provides the link between key comparisons CCEM-K6.a and COOMET.EM-K6.a. The linkage process is described in section 7.4 of the COOMET.EM-K6.a Final Report.

CCEM-K6.a, EUROMET.EM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
 MEASUREMENT FREQUENCY: 1 kHz
 NOMINAL VOLTAGE: 3 V

LAB <i>i</i> ↓	$D_i / 10^{-6}$	$U_i / 10^{-6}$
NPL	-0.1	1.8
INRIM	0.1	0.7
VSL	-0.1	1.8
SP	0.2	1.1
METAS	0.0	1.1
IPQ	0.0	1.4
CEM	-0.1	1.3
NRC	-0.1	0.6
NIST	-0.2	1.0
KRISS	0.0	2.7
NPLI	0.3	1.1
INTI	0.3	2.0
NIM	-0.5	0.7
JV	0.1	2.4
BEV	0.0	1.3
VNIIM	0.2	1.5
NMIA	-0.2	1.5
NMISA	0.4	2.4
MIKES	0.0	1.1
AREPA	-0.6	2.0
LNE	0.1	1.1
PTB	0.1	0.0

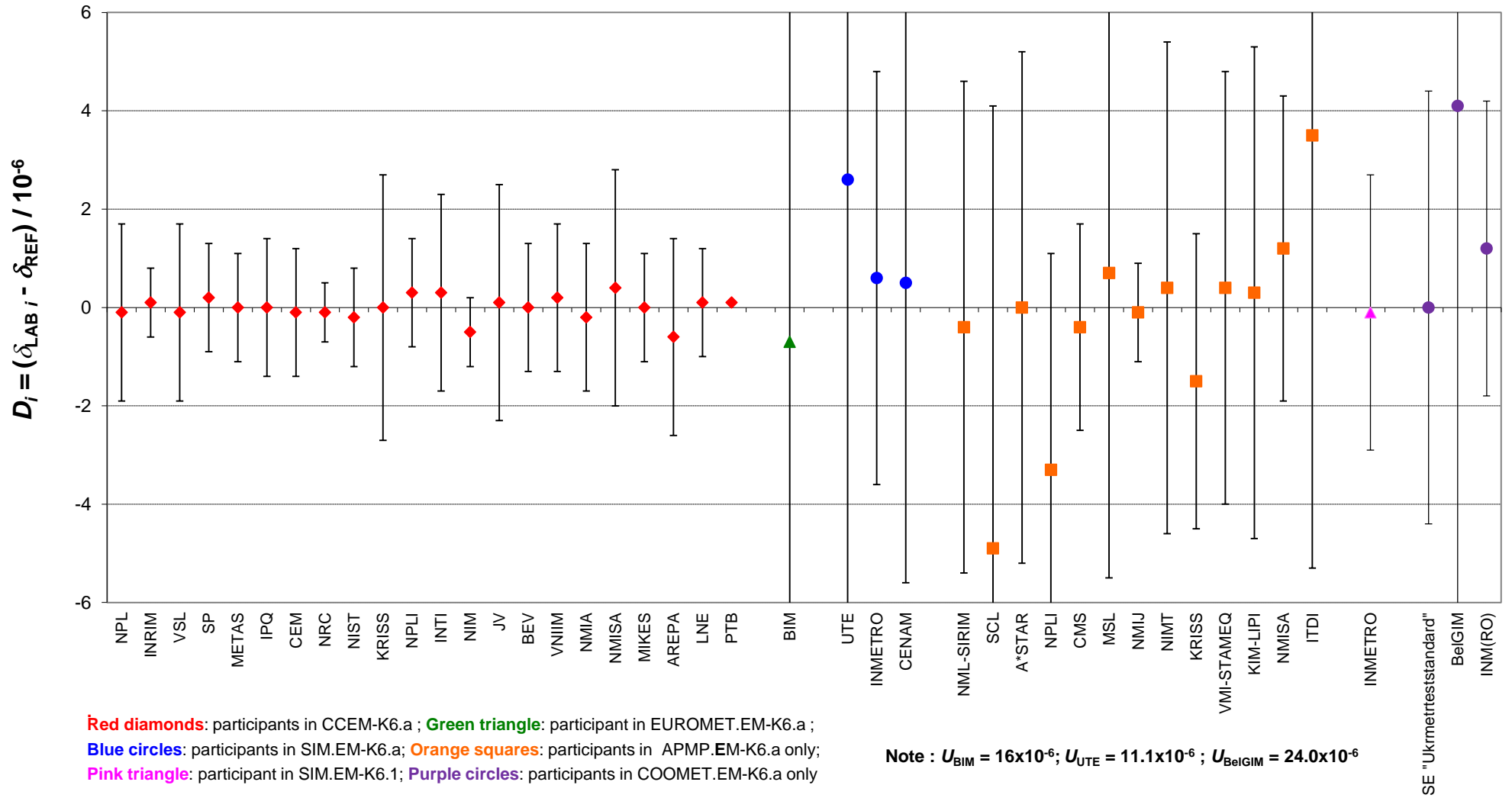
laboratory contributing to the key comparison reference value

participant correlated with PTB

participant correlated with VSL

LAB <i>i</i> ↓	$D_i / 10^{-6}$	$U_i / 10^{-6}$
BIM	-0.7	16
UTE	2.6	11.1
INMETRO	0.6	4.2
CENAM	0.5	6.1
NML-SIRIM	-0.4	5.0
SCL	-4.9	9.0
A*STAR	0.0	5.2
NPLI	-3.3	4.4
CMS	-0.4	2.1
MSL	0.7	6.2
NMIJ	-0.1	1.0
NIMT	0.4	5.0
KRISS	-1.5	3.0
VMI-STAMEQ	0.4	4.4
KIM-LIPI	0.3	5.0
NMISA	1.2	3.1
ITDI	3.5	8.8
INMETRO	-0.1	2.8
SE "Ukrmetrteststandard"	0.0	4.4
BelGIM	4.1	24.0
INM(RO)	1.2	3.0

CCEM-K6.a, EURAMET.EM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a
AC/DC voltage transfer difference at frequency 1 kHz, 3 V
Degrees of equivalence relative to the key comparison reference value: D_i and its expanded uncertainty U_i ($k=2$)



CCEM-K6.a, EUROMET.EM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a

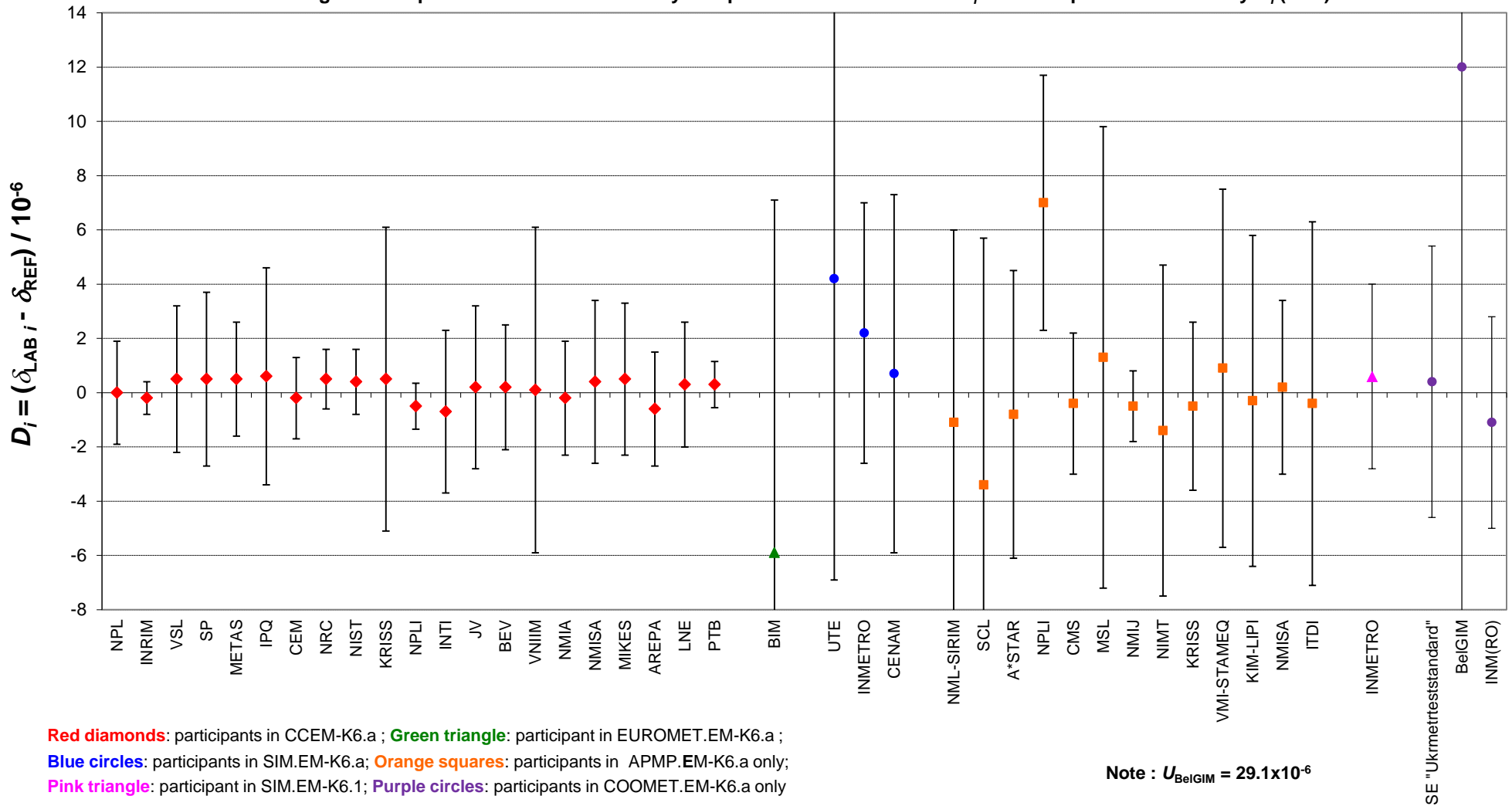
MEASURAND: AC/DC voltage transfer difference
 MEASUREMENT FREQUENCY: 20 kHz
 NOMINAL VOLTAGE: 3 V

LAB <i>i</i> ↓	$D_i / 10^{-6}$	$U_i / 10^{-6}$
NPL	0.0	1.9
INRIM	-0.2	0.6
VSL	0.5	2.7
SP	0.5	3.2
METAS	0.5	2.1
IPQ	0.6	4.0
CEM	-0.2	1.5
NRC	0.5	1.1
NIST	0.4	1.2
KRISS	0.5	5.6
NPLI	-0.5	0.85
INTI	-0.7	3.0
JV	0.2	3.0
BEV	0.2	2.3
VNIIM	0.1	6.0
NMIA	-0.2	2.1
NMISA	0.4	3.0
MIKES	0.5	2.8
AREPA	-0.6	2.1
LNE	0.3	2.3
PTB	0.3	0.85

LAB <i>i</i> ↓	$D_i / 10^{-6}$	$U_i / 10^{-6}$
BIM	-5.9	13
UTE	4.2	11.1
INMETRO	2.2	4.8
CENAM	0.7	6.6
NML-SIRIM	-1.1	7.1
SCL	-3.4	9.1
A*STAR	-0.8	5.3
NPLI	7.0	4.7
CMS	-0.4	2.6
MSL	1.3	8.5
NMIJ	-0.5	1.3
NIMT	-1.4	6.1
KRISS	-0.5	3.1
VMI-STAMEQ	0.9	6.6
KIM-LIPI	-0.3	6.1
NMISA	0.2	3.2
ITDI	-0.4	6.7
INMETRO	0.6	3.4
SE "Ukrmetteststandard"	0.4	5.0
BelGIM	12.0	29.1
INM(RO)	-1.1	3.9

- laboratory contributing to the key comparison reference value
- participant correlated with PTB
- participant correlated with VSL


CCEM-K6.a, EURAMET.EM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a
AC/DC voltage transfer difference at frequency 20 kHz, 3 V
Degrees of equivalence relative to the key comparison reference value: D_i and its expanded uncertainty U_i ($k=2$)



CCEM-K6.a, EUROMET.EM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
 MEASUREMENT FREQUENCY: 100 kHz
 NOMINAL VOLTAGE: 3 V

LAB <i>i</i> ↓	$D_i / 10^{-6}$	$U_i / 10^{-6}$
NPL	1.5	2.4
INRIM	-1.1	1.7
VSL	-0.1	5.7
SP	0.5	4.1
METAS	0.5	5.5
IPQ	0.3	8.1
CEM	1.5	2.1
NRC	1.4	1.7
NIST	1.2	1.7
KRISS	0.2	5.7
NPLI	-1.5	2.2
INTI	-0.6	6.1
JV	-1.1	4.8
BEV	-0.8	2.6
VNIIM	-3.0	10
NMIA	-1.3	4.5
NMISA	-2.3	3.9
MIKES	-0.7	3.2
AREPA	-0.2	2.2
LNE	0.5	4.7
PTB	-0.9	1.7

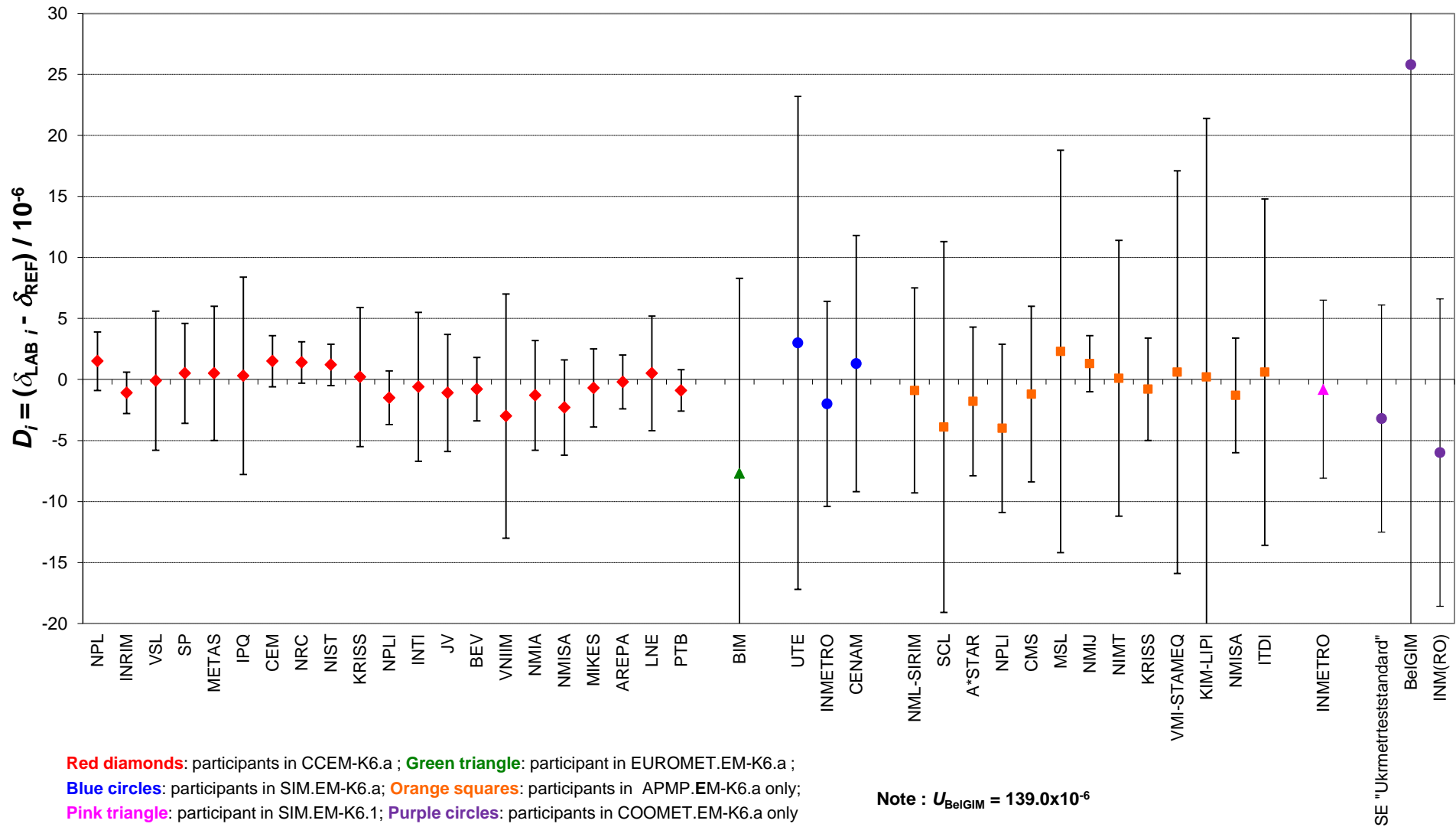
 laboratory contributing to the key comparison reference value

 participant correlated with PTB

 participant correlated with VSL

LAB <i>i</i> ↓	$D_i / 10^{-6}$	$U_i / 10^{-6}$
BIM	-7.7	16
UTE	3.0	20.2
INMETRO	-2.0	8.4
CENAM	1.3	10.5
NML-SIRIM	-0.9	8.4
SCL	-3.9	15.2
A*STAR	-1.8	6.1
NPLI	-4.0	6.9
CMS	-1.2	7.2
MSL	2.3	16.5
NMIJ	1.3	2.3
NIMT	0.1	11.3
KRISS	-0.8	4.2
VMI-STAMEQ	0.6	16.5
KIM-LIPI	0.2	21.2
NMISA	-1.3	4.7
ITDI	0.6	14.2
INMETRO	-0.8	7.3
SE "Ukrmetteststandard"	-3.2	9.3
BelGIM	25.8	139.0
INM(RO)	-6.0	12.6

CCEM-K6.a, EURAMET.EM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a
AC/DC voltage transfer difference at frequency 100 kHz, 3 V
Degrees of equivalence relative to the key comparison reference value: D_i and its expanded uncertainty U_i ($k=2$)



CCEM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a

MEASURAND: AC/DC voltage transfer difference
 MEASUREMENT FREQUENCY: 1 MHz
 NOMINAL VOLTAGE: 3 V

LAB <i>i</i> ↓	$D_i / 10^{-6}$	$U_i / 10^{-6}$
NPL	6	7.5
INRIM	-1	11
VSL	7	19
SP	-9	21
METAS	-5	43
IPQ	-17	70
CEM	-10	21
NRC	-10	11
NIST	8	20
KRISS	-9	100
NPLI	-6	21
INTI	-23	25
JV	-11	27
BEV	-7	32
VNIIM	-18	33
NMIA	-1	23
NMISA	-21	33
MIKES/VTT	-7	31
AREPA	-22	29
LNE	27	42
PTB	-14	23

LAB <i>i</i> ↓	$D_i / 10^{-6}$	$U_i / 10^{-6}$
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UTE	-8.2	62.6
INMETRO	-33.2	36.7
CENAM	-6.8	42.1

NML-SIRIM	15.6	29.9
SCL	-8.9	79.1
A*STAR	-8.1	34.5
NPLI	-15.4	29
CMS	3.1	31.7
MSL	2.5	54.9
NMIJ	2.8	17.1
NIMT	24.8	30.8
KRISS	-8.8	26.6
VMI-STAMEQ	-2.1	66.3
KIM-LIPI	-4.1	74.1
NMISA	-17.1	33.6
ITDI	113.9	43

INMETRO	-10	44.3
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SE "Ukrmetrteststandard"	-30.6	41.6
BelGIM	-	-
INM(RO)	19.4	24.8

 laboratory contributing to the key comparison reference value

 participant correlated with PTB

 participant correlated with VSL

CCEM-K6.a, SIM.EM-K6.a, APMP.EM-K6.a, SIM.EM-K6.1 and COOMET.EM-K6.a

AC/DC voltage transfer difference at frequency 1 MHz, 3 V

Degrees of equivalence relative to the key comparison reference value: D_i and its expanded uncertainty U_i ($k = 2$)

