Electricity and Magnetism, Latvia, LATMB (Latvian Metrology Bureau)

Calibration or Measurement Services			Measurand Level or Range			Measurement Conditions/Independent variables		Expanded Uncertainty							
Quantity	**Instrument or artifact**	**Instrument Type or Method**	**Minimum value**	**Maximum value**	**units**	**Parameter**	**Specifications**	**Value**	**Units**	**Coverage Factor**	**Level of Confidence**	**Is the expanded uncertainty a relative one?**	**Uncertainty matrix**	**Comments**	**NMI Service Identifier**
DC voltage sources: single values	Solid state voltage standard	Direct comparison	10	10	V			4.9	μV	2	95%	No		Approved on 14 March 2006	1
DC voltage sources: single values	Standard cell, solid state voltage standard	Direct comparison	1.018	1.018	V			5.1	μV	2	95%	No		Approved on 14 March 2006	2
DC resistance standards and sources: low values	Fixed resistor	DCC bridge	0.001	0.001	Ω			0.0042	μΩ	2	95%	No		Approved on 14 March 2006	13
DC resistance standards and sources: low values	Fixed resistor	DCC bridge	0.01	0.01	Ω			0.024	μΩ	2	95%	No		Approved on 14 March 2006	14
DC resistance standards and sources: low values	Fixed resistor	DCC bridge	0.1	0.1	Ω			0.13	μΩ	2	95%	No		Approved on 14 March 2006	15
DC resistance standards and sources: low values	Fixed resistor	DCC bridge	1	1	Ω			1.3	μΩ	2	95%	No		Approved on 14 March 2006	16
DC resistance standards and sources: intermediate values	Fixed resistor	DCC bridge	10	10	Ω			13	μΩ	2	95%	No		Approved on 14 March 2006	17
DC resistance standards and sources: intermediate values	Fixed resistor	DCC bridge	100	100	Ω			0.13	mΩ	2	95%	No		Approved on 14 March 2006	18
DC resistance standards and sources: intermediate values	Fixed resistor	DCC bridge	1000	1000	Ω			1.3	mΩ	2	95%	No		Approved on 14 March 2006	19
DC resistance standards and sources: intermediate values	Fixed resistor	DCC bridge	10	10	kΩ			22	mΩ	2	95%	No		Approved on 14 March 2006	20

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Calibration or Measurement Services			Measurand Level or Range			Measurement Conditions/Independent variables		Expanded Uncertainty							
Quantity	**Instrument or artifact**	**Instrument Type or Method**	**Minimum value**	**Maximum value**	**units**	**Parameter**	**Specifications**	**Value**	**Units**	**Coverage Factor**	**Level of Confidence**	**Is the expanded uncertainty a relative one?**	**Uncertainty matrix**	**Comments**	**NMI Service Identifier**
DC resistance standards and sources: intermediate values	Fixed resistor	DCC bridge	100	100	kΩ			0.23	Ω	2	95%	No		Approved on 14 March 2006	21
DC resistance standards and sources: intermediate values	Fixed resistor	Multimeter	1	1	MΩ			44	Ω	2	95%	No		Approved on 14 March 2006	22
DC resistance standards and sources: high values	Fixed resistor	Multimeter	10	10	MΩ			470	Ω	2	95%	No		Approved on 14 March 2006	23
DC resistance standards and sources: high values	Fixed resistor	Multimeter	100	100	MΩ			45.2	kΩ	2	95%	No		Approved on 14 March 2006	24
AC voltage up to 1000 V: meters	AC voltmeter, multimeter, multifunction transfer standard	Direct with calibrator	0.03	700	V	Frequency	45 Hz to 500 kHz	0.03 to 4.9	%	2	95%	Yes	Matrix5.2.2	Approved on 14 March 2006	45
AC current up to 100 A: meters	AC ammeter, multimeter, multifunction transfer standard	Direct with calibrator	0.029E-03	11	A	Frequency	45 Hz to 10 kHz	0.1 to 1.7	%	2	95%	Yes	Matrix6.2.2	Approved on 14 March 2006	46

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Uncertainties table: Matrix5.2.2

AC voltage up to 1000 V: meters, LATMB Internal Identifier: 45

	45 Hz	1 kHz	5 kHz	8 kHz	10 kHz	18 kHz	20 kHz	50 kHz	90 kHz	100 kHz	450 kHz	500 kHz
30 mV	0.71	0.71	-	-	0.91	-	1.43	1.69	-	4.9	4.9	-
100 mV	0.05	0.05	-	-	0.07	-	0.09	0.3	-	0.68	0.68	0.68
300 mV	0.24	0.24	-	-	0.44	-	0.68	1.06	-	3.13	3.13	3.13
1 V	0.03	0.03	-	-	0.04	-	0.1	0.3	-	0.3	0.6	-
3 V	0.17	0.17	-	-	0.33	-	0.6	1.07	-	1.07	2.47	-
10 V	0.03	0.03	-	-	0.07	-	0.13	0.3	0.3	-	-	-
30 V	0.2	0.2	-	-	0.38	-	0.79	1.1	1.1	-	-	-
100 V	0.04	0.05	-	-	0.08	0.08	-	-	-	-	-	-
300 V	0.27	0.37	-	-	0.45	0.45	-	-	-	-	-	-
700 V	0.07	0.25	0.41	0.41	-	-	-	-	-	-	-	-

The expanded uncertainties given in this table are expressed in %.

Electricity and Magnetism, Latvia, LATMB (Latvian Metrology Bureau)

Uncertainties table: Matrix6.2.2

AC current up to 100 A: meters, LATMB Internal Identifier: 46

	45 Hz to 65 Hz	45 Hz to 1 kHz	65 Hz to 500 Hz	500 Hz to 1 kHz	1 kHz to 5 kHz	5 kHz to 10 kHz
0.029 mA to 0.330 mA	-	0.48	-	-	0.66	1.7
0.330 mA to 3.3 mA	-	0.19	-	-	0.34	0.84
3.3 mA to 33 mA	-	0.17	-	-	0.31	0.84
33 mA to 330 mA	-	0.17	-	-	0.31	0.84
0.330 A to 2.2 A	-	0.16	-	-	0.90	-
2.2 A to 11 A	0.10	-	0.15	0.41	-	-

The expanded uncertainties given in this table are expressed in %.