

Thermometry, Bulgaria, BIM (Bulgarian Institute of Metrology)



Calibration or Measurement Services			Measurand Level or Range			Measurement Conditions/Independent variables		Expanded Uncertainty					Comments	NMI Service Identifier
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?		
Temperature	IPRT	Comparison	-75	-40	°C	Stirred liquid bath	alcohol	10	mK	2	95%	No	Approved on 03 November 2009	3.1
Temperature	IPRT	Comparison	-40	50	°C	Stirred liquid bath	alcohol, oil	7	mK	2	95%	No	Approved on 03 November 2009	3.2
Temperature	IPRT	Comparison	50	100	°C	Stirred liquid bath	silicon oil	10	mK	2	95%	No	Approved on 03 November 2009	3.3
Temperature	IPRT	Comparison	100	250	°C	Stirred liquid bath	silicon oil	20	mK	2	95%	No	Approved on 03 November 2009	3.3
Temperature	IPRT	Comparison	250	650	°C	Furnace	metal block	0.1 to 0.6	°C	2	95%	No	Approved on 03 November 2009	3.4
Temperature	Thermistors and other resistive thermometers	Comparison	-75	-40	°C	Stirred liquid bath	alcohol	20	mK	2	95%	No	Approved on 03 November 2009	4.1
Temperature	Thermistors and other resistive thermometers	Comparison	-40	100	°C	Stirred liquid bath	alcohol, water or silicon oil	10	mK	2	95%	No	Approved on 03 November 2009	4.2
Temperature	Thermistors and other resistive thermometers	Comparison	100	250	°C	Stirred liquid bath	silicon oil	20	mK	2	95%	No	Approved on 03 November 2009	4.3
Temperature	Noble metal thermocouples	Comparison	-75	230	°C	Stirred liquid bath	alcohol, water or silicon oil	0.4	°C	2	95%	No	Pre-determined value of inhomogeneity included in the CMC entry Approved on 03 November 2009	4.4
Temperature	Noble metal thermocouples	Comparison	230	650	°C	Furnace	metal block	0.6	°C	2	95%	No	Pre-determined value of inhomogeneity included in the CMC entry Approved on 03 November 2009	4.5

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Temperature	Noble metal thermocouples	Comparison	650	1100	°C	Furnace	metal block	1	°C	2	95%	No	Pre-determined value of inhomogeneity included in the CMC entry Approved on 03 November 2009	5.1
Temperature	Noble metal thermocouples	Comparison	1100	1200	°C	Furnace	metal block	1.5	°C	2	95%	No	Pre-determined value of inhomogeneity included in the CMC entry Approved on 03 November 2009	5.2
Temperature	Base metal thermocouples	Comparison	-75	230	°C	Stirred liquid bath	alcohol, water or silicon oil	0.6	°C	2	95%	No	Pre-determined value of inhomogeneity included in the CMC entry Approved on 03 November 2009	5.3
Temperature	Base metal thermocouples	Comparison	230	1200	°C	Furnace	metal block	2	°C	2	95%	No	Pre-determined value of inhomogeneity included in the CMC entry Approved on 03 November 2009	6.1
Temperature	Liquid-in-glass thermometers	Comparison	-75	-40	°C	Stirred liquid bath	alcohol	20	mK	2	95%	No	Approved on 03 November 2009	7.1
Temperature	Liquid-in-glass thermometers	Comparison	-40	50	°C	Stirred liquid bath	alcohol, oil	10	mK	2	95%	No	Approved on 03 November 2009	7.2
Temperature	Liquid-in-glass thermometers	Comparison	50	100	°C	Stirred liquid bath	silicon oil	20	mK	2	95%	No	Approved on 03 November 2009	7.3
Temperature	Liquid-in-glass thermometers	Comparison	100	250	°C	Stirred liquid bath	silicon oil	25	mK	2	95%	No	Approved on 03 November 2009	7.4

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Temperature	Temperature sensors with display unit	Comparison	-75	-40	°C	Stirred liquid bath	alcohol	10	mK	2	95%	No	Approved on 03 November 2009	3.1
Temperature	Temperature sensors with display unit	Comparison	-40	50	°C	Stirred liquid bath	alcohol, oil	7	mK	2	95%	No	Approved on 03 November 2009	3.2
Temperature	Temperature sensors with display unit	Comparison	50	100	°C	Stirred liquid bath	silicon oil	10	mK	2	95%	No	Approved on 03 November 2009	3.3
Temperature	Temperature sensors with display unit	Comparison	100	230	°C	Stirred liquid bath	silicon oil	20	mK	2	95%	No	Approved on 03 November 2009	3.3
Temperature	Temperature sensors with display unit	Comparison	230	650	°C	Furnace	metal block	0.1 to 0.6	°C	2	95%	No	Approved on 03 November 2009	3.4
Temperature	Temperature sensors with display unit	Comparison	650	1200	°C	Furnace	metal block	0.5 to 2	°C	2	95%	No	Approved on 03 November 2009	3.4
Temperature	Capsule-type SPRTs	Calibration at Mercury triple point	234.3156	234.3156	K	Mercury apparatus		0.5	mK	2	95%	No	Approved on 27 March 2014	2.1
Temperature	Capsule-type SPRTs	Calibration at Water triple point	273.16	273.16	K	Temperature-controlled bath		0.2	mK	2	95%	No	Approved on 27 March 2014	2.1
Temperature	Long-stem SPRTs	Calibration at Mercury triple point	234.3156	234.3156	K	Mercury apparatus		0.5	mK	2	95%	No	Approved on 27 March 2014	2.2
Temperature	Long-stem SPRTs	Calibration at Water triple point	273.16	273.16	K	Temperature-controlled bath		0.2	mK	2	95%	No	Approved on 27 March 2014	2.2
Temperature	Long-stem SPRTs	Calibration at Gallium melting point	29.7646	29.7646	°C	Gallium apparatus		0.4	mK	2	95%	No	Approved on 27 March 2014	2.2
Temperature	Long-stem SPRTs	Calibration at Indium freezing point	156.5985	156.5985	°C	3-zone furnace		0.8	mK	2	95%	No	Approved on 27 March 2014	2.2

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Temperature	Long-stem SPRTs	Calibration at Tin freezing point	231.928	231.928	°C	3-zone furnace		0.8	mK	2	95%	No	Approved on 27 March 2014	2.2
Temperature	Long-stem SPRTs	Calibration at Zinc freezing point	419.527	419.527	°C	3-zone furnace		2.0	mK	2	95%	No	Approved on 27 March 2014	2.2
Humidity	Relative humidity sensors	Comparison in a climatic chamber	10	30	%rh	Air temperature	1 to 20 °C	1.4	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Relative humidity sensors	Comparison in a climatic chamber	30	50	%rh	Air temperature	1 to 20 °C	1.8	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Relative humidity sensors	Comparison in a climatic chamber	50	90	%rh	Air temperature	1 to 20 °C	2.2	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Relative humidity sensors	Comparison in a climatic chamber	10	30	%rh	Air temperature	20 to 50 °C	1.4	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Relative humidity sensors	Comparison in a climatic chamber	30	50	%rh	Air temperature	20 to 50 °C	1.6	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Relative humidity sensors	Comparison in a climatic chamber	50	90	%rh	Air temperature	20 to 50 °C	2.0	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Other hygrometers	Comparison in a climatic chamber	10	30	%rh	Air temperature	1 to 20 °C	1.4	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Other hygrometers	Comparison in a climatic chamber	30	50	%rh	Air temperature	1 to 20 °C	1.8	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Other hygrometers	Comparison in a climatic chamber	50	90	%rh	Air temperature	1 to 20 °C	2.2	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Other hygrometers	Comparison in a climatic chamber	10	30	%rh	Air temperature	20 to 50 °C	1.4	%rh	2	95%	No	Approved on 17 August 2017	3.3.1

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Humidity	Other hygrometers	Comparison in a climatic chamber	30	50	%rh	Air temperature	20 to 50 °C	1.6	%rh	2	95%	No	Approved on 17 August 2017	3.3.1
Humidity	Other hygrometers	Comparison in a climatic chamber	50	90	%rh	Air temperature	20 to 50 °C	2	%rh	2	95%	No	Approved on 17 August 2017	3.3.1