



National Institute of Metrology (Thailand)

3/4-5 Moo 3, Klong 5, Klong Luang, Pathumthani, 12120, Thailand

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Price List

| Item No. | Description | Range | Accuracy / Uncertainty | Price (THB) | Remark | Code |
|---|--|-------------------------|------------------------|---------------|---|---------------|
| Calibration Fee | | | | | | |
| Thermometry and Optical Metrology Department | | | | | | |
| 1 | Fixed point cells (Primary and Secondary fixed points) | - 38.8344 °C | 0.5 mK | 25,000/point | Comparison against NIMT's Fixed Points | 11010 - 11111 |
| | | 0.01 °C | 0.2 mK | | | |
| | | 29.7646 °C | 0.5 mK | | | |
| | | 231.928 °C | 1 mK | | | |
| | | 419.527 °C | 1.5 mK | | | |
| | | 660.323 °C | 3.5 mK | | | |
| | | 961.78 °C | 5 mK | | | |
| 2 | Standard Platinum Resistance Thermometer (SPRTs) | -189.3442 °C | 1 mK | 8,000 / point | By ITS-90 Fixed Point Cells, Quartz sheath for temperature above Zn. Minimum sheath length 450 mm | 11010 - 11321 |
| | | - 38.8344 °C | 0.8 mK | | | |
| | | 0.01 °C | 0.5 mK | | | |
| | | 29.7646 °C | 0.8 mK | | | |
| | | 231.928 °C | 1.5 mK | | | |
| | | 419.527 °C | 2 mK | | | |
| | | 660.323 °C | 8 mK | | | |
| 961.78 °C | 10 mK | | | | | |
| 3 | Semi-Standard Platinum Resistance Thermometer or Platinum Resistance Thermometer | -189.3442 °C | 1 mK | 8,000 / point | By ITS-90 Fixed Point Cells, Quartz sheath for temperature above Zn. Minimum sheath length 450 mm | 11010 - 11322 |
| | | - 38.8344 °C | 0.8 mK | | | |
| | | 0.01 °C | 0.5 mK | | | |
| | | 29.7646 °C | 0.8 mK | | | |
| | | 231.928 °C | 1.5 mK | | | |
| | | 419.527 °C | 2 mK | | | |
| | | 660.323 °C | 8 mK | | | |
| 961.78 °C | 10 mK | | | | | |
| 4 | Standard Platinum Resistance Thermometer (SPRTs) | -189.3442 °C to 0.01 °C | 1 mK | 8,000 / point | By ITS-90 Fixed Point Cells, Quartz sheath for temperature above Zn. Minimum sheath length 450 mm | 11010 - 11323 |
| | | -38.8344 °C to 0.01°C | 1 mK | | | |
| | | 0.01 °C to 29.7646 °C | 1 mK | | | |
| | | 0.01 °C to 231.928 °C | 2 mK | | | |
| | | 0.01 °C to 419.527 °C | 3 mK | | | |
| | | 0.01 °C to 660.323 °C | 8 mK | | | |
| | | 0.01 °C to 961.78 °C | 15 mK | | | |



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| 5 | Semi-Standard Platinum Resistance Thermometer or Platinum Resistance Thermometer | -189.3442 °C to 0.01 °C | 1 mK | 8,000 / point | By ITS-90 Fixed Point Cells, Quartz sheath for temperature above Zn. Minimum sheath length 450 mm | 11010 - 11324 |
| | | -38.8344 °C to 0.01°C | 1 mK | | | |
| | | 0.01 °C to 29.7646 °C | 1 mK | | | |
| | | 0.01 °C to 419.527 °C | 3 mK | | | |
| | | 0.01 °C to 660.323 °C | 8 mK | | | |
| | | 0.01 °C to 961.78 °C | 15 mK | | | |
| 6 | Standard Platinum Resistance Thermometer (SPRTs) | -196°C | 0.15 K | 5,000 first point + 1,500/next point At least 6 points | By Comparison with SPRTs in stirred liquid bath Minimum sheath length 300 mm | 11020 - 12221 |
| | | -80°C to -60°C | 40 mK | | | |
| | | >-60°C to -40°C | 10 mK | | | |
| | | - 40 °C to 0 °C | 10 mK | | | |
| | | > 0 °C to 50 °C | 10 mK | | | |
| | | > 50 °C to 250 °C | 20 mK | | | |
| | | > 250 °C to 420 °C | 30 mK | | | |
| | | > 420 °C to 550 °C | 50 mK | | | |
| >550°C to 650°C | 50 mK | | | | | |
| 7 | Industrial Platinum Resistance Thermometers (IPRTs) | -196°C | 0.15 K | 5,000 first point + 1,500/next point At least 6 points | By Comparison with SPRTs in stirred liquid bath Minimum sheath length 300 mm | 11020 - 12222 |
| | | -100°C to -80°C | 20 mK | | | |
| | | -80°C to -60°C | 20 mK | | | |
| | | >-60°C to -40°C | 10 mK | | | |
| | | - 40 °C to 0 °C | 10 mK | | | |
| | | > 0 °C to 50 °C | 10 mK | | | |
| | | > 50 °C to 250 °C | 20 mK | | | |
| | | > 250 °C to 420 °C | 30 mK | | | |
| | | > 420 °C to 550 °C | 50 mK | | | |
| | | >550°C to 660°C | 50 mK | | | |



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| 8 | Noble metal Thermocouples (Type S, Type R, Type B, Au/Pt) | 231.928 °C | 0.1 K | 7500 bath/point | By ITS-90 Fixed Point Cells Minimum sheath length 500 mm | 11020 - 12311 |
| | | 419.527 °C | 0.1 K | | | |
| | | 660.323 °C | 0.2 K | | | |
| | | 961.78 °C | 0.2 K | | | |
| | | 1084.62 °C | 0.3 K | | | |
| | | 1324.0 °C | 0.6 K | 9500 bath/point | By Co-C fixed point cell Minimum sheath length 700 mm | |
| | | 1064.18 °C | 1.0 K | 7500 bath/point | By Au wire bridge calibration | |
| | | 1553.5 °C | 1.2 K | 7500 bath/point | By Pd wire bridge calibration | |
| | | 0 °C to 660 °C | 0.2 K | 7500 bath/point and Co-C 9500 bath/point | By ITS-90 Fixed Point Cells / Co-C fixed point cell / wire bridge (At least 3 points) | |
| | | > 660 °C to 1100 °C | 0.3 K | | | |
| | | > 1100 °C to 1325 °C | 0.6 K | | | |
| > 1325 °C to 1554 °C | 1.2 K | | | | | |
| 9 | Noble metal Thermocouples (Type S, Type R, Type B, Au/Pt) | -40 °C to 0 °C | 0.2 K | 4,000 first point + 1,200/next point | By comparison with standard TC or SPRT in comparison furnace Minimum sheath length 450 mm | 11020 - 12312 |
| | | 0 °C to 250 °C | 0.1 K | | | |
| | | >250 °C to 650 °C | 0.2 K | | | |
| | | >650 °C to 1100 °C | 0.8 K | | | |
| | | >700 °C to 1100 °C | 1.0 K | | | |
| | | >1100 °C to 1320 °C | 1.2 K | | | |
| | | >1320 °C to 1500 °C | 2.0 K | | | |
| 10 | Base Metal Thermocouples | -40 °C to 1100 °C | 0.1 - 1.5 K | 3,750 first point + 1,000/next point | By comparison with standard TC or SPRT in comparison furnace | 11020 - 12321 |



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| 11 | Fabrication of Standard Thermocouples Type R, Type S, Type B with fixed point calibration (wires not included) | 0 °C to 1100 °C | 0.3 K | 36,500 | Electrical Annealing and re-fabrication thermocouple with calibration certificate by ITS-90 Fixed Point Cells. | 11020 - 22314 |
| 12 | Liquid-in-glass Thermometer | -40 °C to 90 °C | 15 mK | 4,000 first point + 1,000/next point | By Comparison with SPRTs in stirred liquid bath | 11020 - 12411 |
| | | > 90 °C to 110 °C | 20 mK | | | |
| | | > 110 °C to 250 °C | 50 mK | | | |
| 13 | Digital Thermometer (with PRT probe) (resolution ≤ 0.01K) | -80°C to -40°C (Resolution < 0.01°C) | 15 mK | 4,000 first point + 1,000/next point | By Comparison with SPRTs in stirred liquid bath /Furnace | 11020 - 12711 |
| | | - 40 °C to 90 °C | 15 mK | | | |
| | | > 90 °C to 250 °C | 20 mK | | | |
| | | > 250 °C to 650 °C | 50 mK | | | |
| | Digital Thermometer (with PRT probe) (resolution ≥ 0.1K) | - 80 °C to 650 °C | 0.1 K | 4,000 first point + 1,000/next point | By Comparison with SPRTs in stirred liquid bath /Furnace | 11020 - 12712 |
| | Digital Thermometer (with thermocouple probe) | 0 °C to 650 °C | 0.4 K | 4,000 first point + 1,000/next point | By Comparison with SPRTs /TC in stirred liquid bath /Furnace | 11020 - 12714 |
| | | > 650 °C to 1000 °C | 1.0 K | | | |
| > 1000 °C to 1200 °C | | 1.2 K | | | | |
| 14 | Temperature Bath | -80°C to 25°C (Alcohol) | 20 mK | 4,000 first point + 1,000/next point | By Comparison with SPRTs | 11020 - 12861 |
| | | >5 °C to 50 °C (Water) | 15 mK | | | |
| | | >40 °C to 250 °C (Oil) | 30 mK | | | |
| | | >300°C to 500°C (Salt) | 50 mK | | | |
| 15 | Dry Block and Furnace | - 40 °C to 420 °C | 0.1 K | 4,000 first point + 1,000/next point | By Comparison with SPRTs | 11020 - 12862 |
| | | >420°C to 660°C | 0.1 K | | | |
| 16 | Thermistors | 0 °C to 100 °C | 10 mK | 3,000 first point + 1,500/next point | Comparison with SPRTs in stirred liquid baths | 11020-12231 |
| 17 | Surface Thermomter | 35 °C to 400 °C | 2.0 K | 4,000 first point + 1,500/next point | Comparison with IPRTs in Surface Calibrator | 11020 - 12713 |



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| 18 | Surface calibrator | 35 °C to 400 °C | 1.2 K to 2.0 K | 4,000 first point + 1,500/next point | Comparison with NIMT reference surface temperature source using a surface thermometer as a comparator | 11020 - 12863 |
| 19 | Fixed-point Blackbody (Primary and Secondary Fixed-point Black body) | 1084.62°C | 0.20 K | 24,000 / point | Comparison to Standard Fixed-point Blackbody using 0.65 µm standard radiation thermometer | 11030 - 11121 |
| 20 | Fixed-point Blackbody (Primary and Secondary Fixed-point Black body) | 1 084.62°C | 0.25 K | 24,000 / point | Comparison to Standard Fixed-point Blackbody using 0.9 µm standard radiation thermometer | 11030 - 11122 |
| | | 961.78°C | | | | |
| | | 660.323°C | | | | |
| | | 419.527°C | | | | |
| 21 | Fixed-point Blackbody (Primary and Secondary Fixed-point Black body) | 961.78°C | 0.30 K | 24,000 / point | Comparison to Standard Fixed-point Blackbody using 1.6 µm standard radiation thermometer | 11030 - 11123 |
| | | 660.323°C | | | | |
| | | 419.527°C | | | | |
| | | 231.928°C | 0.20 K | | | |
| 22 | Optical Pyrometer | 156.5985 °C to 1084.60 °C | 0.3 K to 0.5 K | 12,000/point | By Comparison with Black Body Fixed Points | 11030 - 11411 |
| | 0.9 µm radiation thermometer | 960 °C to 2000 °C | 0.39 K to 2.4 K | 48,000/point | Direct realisation by measurement of spectral responsivity | 11030 - 11412 |
| | 0.65 µm radiation thermometer | 960 °C to 2500 °C | 0.28 K to 1.6 K | 48,000/point | Direct realisation by measurement of spectral responsivity | 11030 - 11413 |
| 23 | Variable Temperature Blackbody Radiation Sources | 0 °C to < 15 °C | 0.4 K | 7,500 /point | Comparison with reference blackbodies through infrared thermometer spectral wavelength 8 µm to 13 µm | 11030-12521 |
| | | 15 °C to 500 °C | 0.4 K to 2.1 K | 8,500 first point + 3,750/next point | Comparison with reference blackbodies through infrared thermometer spectral wavelength 8 µm to 14 µm | 11030-12525 |
| | | -20 °C to < 15 °C | 0.4 K to 0.2 K | 7,500 /point | Comparison with reference blackbodies through infrared thermometer spectral wavelength 8 µm to 14 µm | 11030-12526 |
| | | 15 °C to 500 °C | 0.2 K to 2.1 K | 8,500 first point + 3,750/next point | Comparison with 1.6 µm standard radiation thermometer | 11030-12527 |
| | | 150 °C to 1 100 °C | 0.7 K to 1.6 K | 8,500 first point + 3,750/next point | Comparison with 650 nm standard radiation thermometer | 11030-12522 |
| | | 1 000 °C to 2 500 °C | 1.6 K to 2.8 K | 8,500 first point + 3,750/next point | Comparison with 900 nm standard radiation thermometer | 11030-12523 |
| | | 420 °C to 1 600 °C | 0.8 K to 2.0 K | 8,500 first point + 3,750/next point | Comparison with 8 µm to 14 µm standard radiation thermometer | 11030-12528 |
| | | 400 °C to 600 °C | 1.5 K to 1.8 K | 8,500 first point + 3,750/next point | Comparison with 8 µm to 14 µm standard radiation thermometer | 11030-12529 |



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| 24 | Blackbody sources for infrared ear thermometers | 35 °C to 42 °C | 55 mK | 7,500 first point + 2,500/next point | Comparison with standard liquid bath blackbodies through infrared ear thermometers | 11030 - 12524 |
| 25 | Radiation Thermometer/Infrared Thermometer/Thermal imaging Camera | -40 °C to 15 °C | 0.15 K to 0.30 K | 5,000 /point* | By Comparison with PRT or Transfer Standard Radiation Thermometer | 11030 - 12541 |
| 26 | Radiation Thermometer/Infrared Thermometer/Thermal imaging Camera | >15 °C to < 1100 °C | 0.15 K to 5.0 K | 7,500 /point +2,000/next point | By Comparison with Transfer Standard Radiation Thermometer or | 11030 - 12542 |
| 27 | Radiation Thermometer/Infrared Thermometer/Thermal imaging Camera | 1100 °C to 2500 °C | 2 K to 5 K | 8,500 first point + 3,000/next point | By Comparison with Transfer Standard Radiation Thermometer | 11030 - 12543 |
| 28 | Infrared ear thermometer (Resolution ≥ 0.1 K) | 35 °C to 42 °C | 0.2 K | 3,750 first point + 1,000/next point | Comparison with PRT in liquid bath blackbody | 11030 - 12544 |
| | Infrared ear thermometer (Resolution < 0.1 K) | | 0.10 K | | | 11030 - 12545 |
| 29 | Spectral emissivity (non-IR transparent material) | 0 < ε < 1 1 500 nm to 2 500 nm | 6 % to 9.5 % | 3,750 /sample | Comparison with gold-coated reference standard | 11050-16311 |
| 30 | Dew Point Hygrometer | -90 °C to <-75 °C | 0.4 K | 8,000/point | Comparison with two temperature two pressure Humidity Generator | 11040 - 13116 |
| | | - 75 °C to -25 °C | 0.3 K | 8,000/point* | Comparison with two temperature two pressure Humidity Generator | 11040 - 13111 |
| | | >- 25 °C to -10 °C | 0.2 K | 8,000/point* | Comparison with two temperature two pressure Humidity Generator | 11040 - 13112 |
| | | >-10 °C to 1 °C | 0.07 K | 5,630/point | Comparison with two pressure Humidity Generator | 11040 - 13113 |
| | | >1 °C to 30 °C | 0.06 K | 5,630/point | Comparison with two pressure Humidity Generator | 11040 - 13114 |
| 31 | Dew-Point Hygrometer | >30 °C to 60 °C | 0.07 K | 6,300/point | Comparison with two temperature two | 11040 - 13115 |



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| 32 | Relative Hygrometer (At chamber temperature : 15 °C to 60 °C) | 15 % to 50 % | 0.4 % | 6,300/point | Comparison with two temperature two pressure Humidity Generator | 11040 - 13311 |
| | | > 50 % to 80 % | 0.7 % | 5,630/point | Comparison with two temperature two pressure Humidity Generator | 11040 - 13312 |
| | | > 80 % to 98 % | 0.9 % | 5,630/point | Comparison with two temperature two pressure Humidity Generator | 11040 - 13313 |
| 33 | Thermo-Hygrograph Thermo-Hygrometer | Temperature 15 °C to 50 °C Humidity (35 to 95)%RH | (0.5 to 1) °C (1.5 to 3) %RH | 3,130 first point + 500/next point | Comparison with PRT and Chilled Mirror Hygrometer in Controlled Chamber | 11040 - 13411 |
| 34 | Data Logger (Air Type) | Temperature 15 °C to 50 °C Humidity (35 to 95)%RH | (0.5 to 1) °C (1.5 to 3) %RH | 3,130 first point + 500/next point | Comparison with PRT and Chilled Mirror Hygrometer in Controlled Chamber | 11040 - 13412 |
| 35 | Air temperature sensor | 10 °C to 50 °C | 0.1 °C | 5,000/First point +1,250 Next point | Comparison to reference thermometer in 2P generator | 11040 - 12611 |
| 36 | Dew-Point Generator | (-10 °C to 30 °C) dew-point | 0.1 °C to 0.12 °C | 17,500/First point +4,000 Next point | Comparison with dew-point hygrometer | 11040 - 14411 |
| 37 | Relative humidity generator | 12 % to 92 % (at the air temperature from 10 °C to 40 °C) | 0.1 % to 0.6 % | 17,500/First point +4,000 Next point | Comparison to dew-point hygrometer and reference thermometer | 11040-14421 |
| 38 | Surface calibrator | 35 °C to 400 °C | 1.2 K to 20. K | 4,000 first point + 1,500/next point | Comparison with NIMT reference surface temperature source using a surface thermometer as a comparator | 11020 - 12863 |

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| Measurement Equipment and CRM for Sale | | | | | | |
| Thermometry and Optical Metrology Department | | | | | | |
| 1 | Reference temperature source for testing / calibration of clinical thermometers | 35.0 °C to 42.0 °C (up to 150 °C) | 40 mK (uniformity and stability) | 81,400 | Model: NIMT-TM-B-01 | 11030-32861 |
| 2 | Reference temperature source for testing / calibration of clinical thermometers | 35.0 °C to 42.0 °C (up to 150 °C) | 40 mK (uniformity and stability) | 55,700 | Model: NIMT-TM-B-02 | 11030-32862 |
| 3 | Blackbody cavity (En-type) | 35.0 °C to 42.0 °C | Emissivity : 0.9995 ± 0.0005 | 10,200 | Model: NIMT-TM-BC-01En | 11030-32521 |
| 4 | Reference thermometer (1 probe) | -50 °C to 70 °C | 20 mK | 10,300 | Model: NIMT-TM-DTM-01 | 11030-32711 |
| 5 | Reference thermometer (2 probes) | -50 °C to 70 °C | 20 mK | 12,700 | Model: NIMT-TM-DTM-02 | 11030-32712 |
| 6 | Supply of Thermocouple Type S with fixed point calibration | 0 °C to 1100 °C | 0.3 K | 102,500 | Supply of thermocouple with calibration certificate by ITS-90 Fixed Point Cells. | 11020-22311 |
| 7 | Supply of Thermocouple Type R with fixed point calibration | 0 °C to 1100 °C | 0.3 K | 102,500 | Supply of thermocouple with calibration certificate by ITS-90 Fixed Point Cells. | 11020-22312 |
| 8 | Supply of Thermocouple Type B with fixed point calibration | 0 °C to 1100 °C | 0.3 K | 102,500 | Supply of thermocouple with calibration certificate by ITS-90 Fixed Point Cells. | 11020-22313 |
| 9 | CRM for Moisture Content in Rice or Paddy | 10 %MC to 18 %MC | 0.6 %MC to 0.8 %MC | 1,500 Bath/100 g/ %MC | The assigned value was obtained from loss on drying method. | 11040 - 25111 |