

CERTIFICATE OF ACCREDITATION



RYcal Services Limited		Client Number 10010	
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Authorised Representative Mr Nathan Ryder Director			
Programme Metrology & Calibration Laboratory			
Accreditation Number 1392		Initial Accreditation Date 20 September 2021	
Conformance Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories			
Laboratory Services Summary			
5.61	Temperature Measuring Equipment		
5.88	Calibrators for Instrumentation		
5.89	Indicating Instruments and Recording Instruments		
Key Technical Personnel			
Mr Nathan Ryder	5.61, 5.88, 5.89		

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Calibration and Measurement Capabilities (CMC) are expressed as an expanded uncertainty corresponding to a level of confidence of 95 % ^{Note1}.

Measurement results are traceable to the International System of Units (SI) via an unbroken chain of comparisons to the New Zealand National Standards or to the National Standards of other Signatories to the CIPM MRA.

Calibrations are undertaken at the laboratory premises at 23 °C ±5 °C.

Measureand/range	Parameter	CMC Uncertainty
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5.61 Temperature Measuring Equipment

- (o) Indicators, recorders and controllers
- (p) Other direct reading temperature measuring systems including transducers and transmitters with electrical 4-20 mA, 1-10 Vdc and 1-5 Vdc outputs

In accordance with MSL Technical Guide 1

Ice-point (can be carried out on-site)	0.01 °C
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Thermocouple Simulation Internal Reference Junction

Type J	
-210 °C to -100 °C	0.21 °C
-100 °C to -30 °C	0.12 °C
-30 °C to 150 °C	0.11 °C
150 °C to 760 °C	0.13 °C
760 °C to 1200 °C	0.17 °C

Type K	
-200 °C to -100 °C	0.25 °C
-100 °C to -25 °C	0.14 °C
-25 °C to 120 °C	0.12 °C
120 °C to 1000 °C	0.20 °C
1000 °C to 1372 °C	0.30 °C

Type T	
-250 °C to -150 °C	0.48 °C
-150 °C to 0 °C	0.18 °C
0 °C to 120 °C	0.12 °C
120 °C to 400 °C	0.11 °C

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5.88 Calibrators for Instrumentation

By comparison with reference instrument to an in-house method based on manufacturer recommendations and/or customer requirements. Note that CMC Uncertainties only include reference device uncertainties and reported measurement uncertainty for a customer's device is likely to be larger.

(a) DC voltage

Including negative values

0 mV to 202 mV	15 $\mu\text{V/V} + 0.2 \mu\text{V}$
0 V to 2.02 V	5.8 $\mu\text{V/V} + 0.3 \mu\text{V}$
0 V to 20.2 V	5.8 $\mu\text{V/V} + 0.5 \mu\text{V}$
0 V to 202.2 V	8.5 $\mu\text{V/V} + 30 \mu\text{V}$
0 V to 1050 V	8.9 $\mu\text{V/V} + 500 \mu\text{V}$

Thermocouple sourcing reference junction at 0 °C. As per DC Voltage CMC's using the tables outlined in appendix D of "Traceable Temperatures" second edition.

(b) AC voltage

0.01212 mV to 12.12 mV	10 Hz to 2 kHz	330 $\mu\text{V/V} + 1.1 \mu\text{V}$
	2 kHz to 10 kHz	480 $\mu\text{V/V} + 1.1 \mu\text{V}$
	10 kHz to 30 kHz	490 $\mu\text{V/V} + 1.1 \mu\text{V}$
	30 kHz to 100 kHz	3500 $\mu\text{V/V} + 1.1 \mu\text{V}$
	100 kHz to 300 kHz	13000 $\mu\text{V/V} + 4 \mu\text{V}$
	300 kHz to 1 MHz	23000 $\mu\text{V/V} + 4 \mu\text{V}$
0.1212 mV to 121.2 mV	10 Hz to 2 kHz	130 $\mu\text{V/V} + 0.5 \mu\text{V}$
	2 kHz to 10 kHz	200 $\mu\text{V/V} + 0.5 \mu\text{V}$
	10 kHz to 30 kHz	380 $\mu\text{V/V} + 1 \mu\text{V}$
	30 kHz to 100 kHz	920 $\mu\text{V/V} + 5 \mu\text{V}$
	100 kHz to 300 kHz	3800 $\mu\text{V/V} + 30 \mu\text{V}$
	300 kHz to 1 MHz	13000 $\mu\text{V/V} + 100 \mu\text{V}$
0.001212 V to 1.212 V	10 Hz to 2 kHz	120 $\mu\text{V/V} + 5 \mu\text{V}$
	2 kHz to 10 kHz	190 $\mu\text{V/V} + 5 \mu\text{V}$
	10 kHz to 30 kHz	380 $\mu\text{V/V} + 10 \mu\text{V}$
	30 kHz to 100 kHz	920 $\mu\text{V/V} + 50 \mu\text{V}$
	100 kHz to 300 kHz	3700 $\mu\text{V/V} + 300 \mu\text{V}$
	300 kHz to 1 MHz	13000 $\mu\text{V/V} + 1000 \mu\text{V}$
0.01212 V to 12.12 V	10 Hz to 2 kHz	120 $\mu\text{V/V} + 50 \mu\text{V}$
	2 kHz to 10 kHz	190 $\mu\text{V/V} + 50 \mu\text{V}$
	10 kHz to 30 kHz	380 $\mu\text{V/V} + 100 \mu\text{V}$
	30 kHz to 100 kHz	920 $\mu\text{V/V} + 500 \mu\text{V}$

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	100 kHz to 300 kHz	3700 $\mu\text{V/V}$ + 3000 μV
	300 kHz to 1 MHz	13000 $\mu\text{V/V}$ + 10000 μV
	1 MHz to 2 MHz	18000 $\mu\text{V/V}$ + 50000 μV
0.1212 V to 121.2 V	10 Hz to 2 kHz	130 $\mu\text{V/V}$ + 500 μV
	2 kHz to 10 kHz	160 $\mu\text{V/V}$ + 500 μV
	10 kHz to 30 kHz	380 $\mu\text{V/V}$ + 1000 μV
	30 kHz to 100 kHz	980 $\mu\text{V/V}$ + 5000 μV
	100 kHz to 300 kHz	6000 $\mu\text{V/V}$ + 50000 μV
	300 kHz to 1 MHz	13000 $\mu\text{V/V}$ + 500000 μV
1.05 V to 1050 V	10 Hz to 2 kHz	160 $\mu\text{V/V}$ + 25000 μV
	2 kHz to 10 kHz	160 $\mu\text{V/V}$ + 25000 μV
	10 kHz to 30 kHz	380 $\mu\text{V/V}$ + 25000 μV
	30 kHz to 100 kHz	980 $\mu\text{V/V}$ + 100000 μV
(c) DC current		
Including negative values		
0 A to 20.2 μA		40 $\mu\text{A/A}$ + 0.0004 μA
0 A to 202 μA		15 $\mu\text{A/A}$ + 0.0004 μA
0 A to 2.02 mA		14 $\mu\text{A/A}$ + 0.004 μA
0 A to 20.2 mA		20 $\mu\text{A/A}$ + 0.04 μA
0 A to 202 mA		86 $\mu\text{A/A}$ + 1 μA
0 A to 2.02 A		199 $\mu\text{A/A}$ + 100 μA
0 A to 20.2 A		351 $\mu\text{A/A}$ + 400 μA
0 A to 30.2 A		827 $\mu\text{A/A}$ + 4380 μA
(d) AC current		
0.0202 μA to 20.2 μA	10 Hz to 2 kHz	3070 $\mu\text{A/A}$ + 0.0025 μA
	2 kHz to 10 kHz	3070 $\mu\text{A/A}$ + 0.0025 μA
	10 kHz to 30 kHz	3090 $\mu\text{A/A}$ + 0.0025 μA
0.202 μA to 202 μA	10 Hz to 2 kHz	390 $\mu\text{A/A}$ + 0.005 μA
	2 kHz to 10 kHz	750 $\mu\text{A/A}$ + 0.005 μA
	10 kHz to 30 kHz	970 $\mu\text{A/A}$ + 0.005 μA
	30 kHz to 100 kHz	5720 $\mu\text{A/A}$ + 0.01 μA
0.00202 mA to 2.02 mA	10 Hz to 2 kHz	390 $\mu\text{A/A}$ + 0.05 μA
	2 kHz to 10 kHz	750 $\mu\text{A/A}$ + 0.05 μA
	10 kHz to 30 kHz	970 $\mu\text{A/A}$ + 0.05 μA
	30 kHz to 100 kHz	5720 $\mu\text{A/A}$ + 0.1 μA
0.0202 mA to 20.2 mA	10 Hz to 2 kHz	390 $\mu\text{A/A}$ + 0.5 μA
	2 kHz to 10 kHz	750 $\mu\text{A/A}$ + 0.5 μA
	10 kHz to 30 kHz	970 $\mu\text{A/A}$ + 0.5 μA

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	30 kHz to 100 kHz	5720 $\mu\text{A/A} + 1 \mu\text{A}$
0.202 mA to 202 mA	10 Hz to 2 kHz	380 $\mu\text{A/A} + 5 \mu\text{A}$
	2 kHz to 10 kHz	740 $\mu\text{A/A} + 5 \mu\text{A}$
	10 kHz to 30 kHz	980 $\mu\text{A/A} + 5 \mu\text{A}$
0.00202 A to 2.02 A	10 Hz to 2 kHz	400 $\mu\text{A/A} + 100 \mu\text{A}$
	2 kHz to 10 kHz	770 $\mu\text{A/A} + 100 \mu\text{A}$
	10 kHz to 30 kHz	1020 $\mu\text{A/A} + 100 \mu\text{A}$
0.0202 A to 20.2 A	10 Hz to 2 kHz	1550 $\mu\text{A/A} + 500 \mu\text{A}$
	2 kHz to 10 kHz	1410 $\mu\text{A/A} + 500 \mu\text{A}$
0.0302 A to 30.2 A	10 Hz to 2 kHz	1260 $\mu\text{A/A} + 12000 \mu\text{A}$
	2 kHz to 10 kHz	1500 $\mu\text{A/A} + 12000 \mu\text{A}$
(e) Resistance		
0 Ω to 2.02 Ω		25 $\mu\Omega/\Omega + 0.000004 \Omega$
0 Ω to 20.2 Ω		15 $\mu\Omega/\Omega + 0.000014 \Omega$
0 Ω to 202 Ω		14 $\mu\Omega/\Omega + 0.00005 \Omega$
0 Ω to 2.02 k Ω		14 $\mu\Omega/\Omega + 0.0005 \Omega$
0 Ω to 20.2 k Ω		14 $\mu\Omega/\Omega + 0.005 \Omega$
0 Ω to 202 k Ω		14 $\mu\Omega/\Omega + 0.05 \Omega$
0 Ω to 2.02 M Ω		16 $\mu\Omega/\Omega + 1 \Omega$
0 Ω to 20.2 M Ω		28 $\mu\Omega/\Omega + 100 \Omega$
0 Ω to 202 M Ω		179 $\mu\Omega/\Omega + 10000 \Omega$
0 Ω to 330 M Ω		1960 $\mu\Omega/\Omega + 1000000 \Omega$
Resistance Based thermometry. As per resistance CMC's using the tables outlined in appendix C of "Traceable Temperatures" second edition.		
(g) Capacitance		
0 nF to 2.02 nF		2750 $\mu\text{F/F} + 0.000001 \mu\text{F}$
1.8 nF to 20.2 nF		1210 $\mu\text{F/F} + 0.000002 \mu\text{F}$
18 nF to 202 nF		732 $\mu\text{F/F} + 0.00001 \mu\text{F}$
0.18 μF to 2.02 μF		621 $\mu\text{F/F} + 0.0001 \mu\text{F}$
1.8 μF to 20.2 μF		627 $\mu\text{F/F} + 0.001 \mu\text{F}$
18 μF to 202 μF		919 $\mu\text{F/F} + 0.01 \mu\text{F}$
0.18 mF to 2.02 mF		922 $\mu\text{F/F} + 0.1 \mu\text{F}$
1.8 mF to 20.2 mF		1070 $\mu\text{F/F} + 1 \mu\text{F}$
18 mF to 202 mF		1070 $\mu\text{F/F} + 10 \mu\text{F}$
(i) Frequency		
10 Hz to 2 MHz		1 $\mu\text{Hz/Hz}$

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5.89 Indicating Instruments and Recording Instruments

By comparison with reference instrument to an in-house method based on manufacturer recommendations and/or customer requirements. Note that CMC Uncertainties only include reference device uncertainties and reported measurement uncertainty for a customer's device is likely to be larger. Calibrations are normally conducted using the reference instrument that offers the lowest uncertainty. In some instances, the applicable CMC will be taken from class 5.88.

(a) DC voltmeters

Including negative values

0 V to 329.99 mV	15 $\mu\text{V/V}$ + 0.8 μV
0 V to 3.299 V	8 $\mu\text{V/V}$ + 1.5 μV
0 V to 32.99 V	9 $\mu\text{V/V}$ + 15 μV
30 V to 329.99 V	14 $\mu\text{V/V}$ + 110 μV
100 V to 1020 V	14 $\mu\text{V/V}$ + 1100 μV

Thermocouple measurement reference junction at 0 °C. As per DC Voltage CMC's using the tables outlined in appendix D of "Traceable Temperatures" second edition.

(b) AC voltmeters

1 mV to 32.99 mV	10 Hz to 45 Hz	600 $\mu\text{V/V}$ + 4.5 μV
	45 Hz to 10 kHz	110 $\mu\text{V/V}$ + 4.5 μV
	10 kHz to 20 kHz	150 $\mu\text{V/V}$ + 4.5 μV
	20 kHz to 50 kHz	760 $\mu\text{V/V}$ + 4.5 μV
	50 kHz to 100 kHz	2600 $\mu\text{V/V}$ + 9 μV
	100 kHz to 500 kHz	6000 $\mu\text{V/V}$ + 38 μV
33 mV to 329.99 mV	10 Hz to 45 Hz	220 $\mu\text{V/V}$ + 6 μV
	45 Hz to 10 kHz	110 $\mu\text{V/V}$ + 6 μV
	10 kHz to 20 kHz	120 $\mu\text{V/V}$ + 6 μV
	20 kHz to 50 kHz	260 $\mu\text{V/V}$ + 6 μV
	50 kHz to 100 kHz	600 $\mu\text{V/V}$ + 24 μV
	100 kHz to 500 kHz	1500 $\mu\text{V/V}$ + 53 μV
0.33 V to 3.299 V	10 Hz to 45 Hz	220 $\mu\text{V/V}$ + 38 μV
	45 Hz to 10 kHz	110 $\mu\text{V/V}$ + 46 μV
	10 kHz to 20 kHz	140 $\mu\text{V/V}$ + 46 μV
	20 kHz to 50 kHz	220 $\mu\text{V/V}$ + 38 μV
	50 kHz to 100 kHz	530 $\mu\text{V/V}$ + 95 μV
	100 kHz to 500 kHz	1800 $\mu\text{V/V}$ + 450 μV
3.3 V to 32.99 V	10 Hz to 45 Hz	220 $\mu\text{V/V}$ + 490 μV
	45 Hz to 10 kHz	110 $\mu\text{V/V}$ + 450 μV
	10 kHz to 20 kHz	180 $\mu\text{V/V}$ + 450 μV

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	20 kHz to 50 kHz	260 $\mu\text{V/V}$ + 450 μV
	50 kHz to 100 kHz	680 $\mu\text{V/V}$ + 1200 μV
33 V to 329.99 V	45 Hz to 1 kHz	140 $\mu\text{V/V}$ + 1500 μV
	1 kHz to 10 kHz	150 $\mu\text{V/V}$ + 4500 μV
	10 kHz to 20 kHz	190 $\mu\text{V/V}$ + 4500 μV
	20 kHz to 50 kHz	220 $\mu\text{V/V}$ + 4500 μV
	50 kHz to 100 kHz	1500 $\mu\text{V/V}$ + 37000 μV
330 V to 1020 V	45 Hz to 1 kHz	220 $\mu\text{V/V}$ + 7500 μV
	1 kHz to 5 kHz	190 $\mu\text{V/V}$ + 7500 μV
	5 kHz to 10 kHz	220 $\mu\text{V/V}$ + 7500 μV
(c) DC ammeters		
Including negative values		
0 A to 329.99 μA		110 $\mu\text{A/A}$ + 0.015 μA
0 A to 3.299 mA		76 $\mu\text{A/A}$ + 0.038 μA
0 A to 32.99 mA		76 $\mu\text{A/A}$ + 0.19 μA
0 A to 329.99 mA		76 $\mu\text{A/A}$ + 1.9 μA
0 A to 1.099 A		150 $\mu\text{A/A}$ + 30 μA
1.1 A to 2.99 A		280 $\mu\text{A/A}$ + 30 μA
0 A to 10.99 A		380 $\mu\text{A/A}$ + 370 μA
11 A to 20.5 A		760 $\mu\text{A/A}$ + 560 μA
DC Current with a 50-turn coil		
-16.499 A to 16.499 A		3800 $\mu\text{A/A}$ + 15000 μA
-149.99 A to 149.99 A		3800 $\mu\text{A/A}$ + 100000 μA
-549.99 A to 549.99 A		3800 $\mu\text{A/A}$ + 380000 μA
-1025 A to 1025 A		3800 $\mu\text{A/A}$ + 380000 μA
(d) AC ammeters		
29 μA to 329.99 μA	10 Hz to 20 Hz	1500 $\mu\text{A/A}$ + 0.08 μA
	20 Hz to 45 Hz	1100 $\mu\text{A/A}$ + 0.08 μA
	45 Hz to 1 kHz	950 $\mu\text{A/A}$ + 0.08 μA
	1 kHz to 5 kHz	2200 $\mu\text{A/A}$ + 0.11 μA
	5 kHz to 10 kHz	6000 $\mu\text{A/A}$ + 0.15 μA
	10 kHz to 30 kHz	12000 $\mu\text{A/A}$ + 0.3 μA
0.33 mA to 3.299 mA	10 Hz to 20 Hz	1500 $\mu\text{A/A}$ + 0.11 μA
	20 Hz to 45 Hz	950 $\mu\text{A/A}$ + 0.11 μA
	45 Hz to 1 kHz	760 $\mu\text{A/A}$ + 0.11 μA
	1 kHz to 5 kHz	1500 $\mu\text{A/A}$ + 0.15 μA
	5 kHz to 10 kHz	3700 $\mu\text{A/A}$ + 0.23 μA
	10 kHz to 30 kHz	7500 $\mu\text{A/A}$ + 0.46 μA

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3.3 mA to 32.99 mA	10 Hz to 20 Hz	1300 μ A/A + 2 μ A
	20 Hz to 45 Hz	680 μ A/A + 2 μ A
	45 Hz to 1 kHz	300 μ A/A + 2 μ A
	1 kHz to 5 kHz	600 μ A/A + 2 μ A
	5 kHz to 10 kHz	1500 μ A/A + 3 μ A
	10 kHz to 30 kHz	3000 μ A/A + 4 μ A
33 mA to 329.99 mA	10 Hz to 20 Hz	1300 μ A/A + 15 μ A
	20 Hz to 45 Hz	680 μ A/A + 15 μ A
	45 Hz to 1 kHz	300 μ A/A + 15 μ A
	1 kHz to 5 kHz	760 μ A/A + 38 μ A
	5 kHz to 10 kHz	1500 μ A/A + 76 μ A
	10 kHz to 30 kHz	3000 μ A/A + 150 μ A
0.33 A to 1.099 A	10 Hz to 45 Hz	1300 μ A/A + 76 μ A
	45 Hz to 1 kHz	380 μ A/A + 76 μ A
	1 kHz to 5 kHz	4500 μ A/A + 760 μ A
	5 kHz to 10 kHz	18000 μ A/A + 3700 μ A
1.1 A to 2.99 A	10 Hz to 45 Hz	1300 μ A/A + 76 μ A
	45 Hz to 1 kHz	450 μ A/A + 76 μ A
	1 kHz to 5 kHz	4500 μ A/A + 760 μ A
	5 kHz to 10 kHz	18000 μ A/A + 3700 μ A
3 A to 10.99 A	45 Hz to 100 Hz	450 μ A/A + 1500 μ A
	100 Hz to 1 kHz	760 μ A/A + 1500 μ A
	1 kHz to 5 kHz	22000 μ A/A + 1500 μ A
11 A to 20.5 A	45 Hz to 100 Hz	900 μ A/A + 3700 μ A
	100 Hz to 1 kHz	1100 μ A/A + 3700 μ A
	1 kHz to 5 kHz	22000 μ A/A + 3700 μ A
AC Current with a 50-turn coil		
10 A to 16.499 A	45 Hz to 65 Hz	2200 μ A/A + 2700 μ A
	65 Hz to 100 Hz	6000 μ A/A + 2700 μ A
	100 Hz to 440 Hz	6100 μ A/A + 4400 μ A
16.5 A to 149.99 A	45 Hz to 65 Hz	2300 μ A/A + 20000 μ A
	65 Hz to 100 Hz	6000 μ A/A + 21000 μ A
	100 Hz to 440 Hz	6400 μ A/A + 43000 μ A
150 A to 1025 A	45 Hz to 65 Hz	2300 μ A/A + 100000 μ A
	65 Hz to 100 Hz	6000 μ A/A + 100000 μ A
	100 Hz to 440 Hz	9600 μ A/A + 200000 μ A

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(i) Ohmmeters

Resistance – Floor value reflects 12 hrs ± 1 °C limits since last ohms zero.

0 Ω to 10.99 Ω	30 $\mu\Omega/\Omega + 0.0008 \Omega$
11 Ω to 32.99 Ω	23 $\mu\Omega/\Omega + 0.0011 \Omega$
33 Ω to 109.99 Ω	21 $\mu\Omega/\Omega + 0.0011 \Omega$
110 Ω to 329.99 Ω	21 $\mu\Omega/\Omega + 0.0015 \Omega$
330 Ω to 1.099 k Ω	21 $\mu\Omega/\Omega + 0.0015 \Omega$
1.1 k Ω to 3.299 k Ω	21 $\mu\Omega/\Omega + 0.015 \Omega$
3.3 k Ω to 10.99 k Ω	21 $\mu\Omega/\Omega + 0.015 \Omega$
11 k Ω to 32.99 k Ω	21 $\mu\Omega/\Omega + 0.15 \Omega$
33 k Ω to 109.99 k Ω	21 $\mu\Omega/\Omega + 0.15 \Omega$
110 k Ω to 329.99 k Ω	24 $\mu\Omega/\Omega + 1.5 \Omega$
330 k Ω to 1.099 M Ω	24 $\mu\Omega/\Omega + 1.5 \Omega$
1.1 M Ω to 3.299 M Ω	46 $\mu\Omega/\Omega + 22 \Omega$
3.3 M Ω to 10.99 M Ω	99 $\mu\Omega/\Omega + 38 \Omega$
11 M Ω to 32.99 M Ω	190 $\mu\Omega/\Omega + 1800 \Omega$
33 M Ω to 109.99 M Ω	380 $\mu\Omega/\Omega + 2200 \Omega$
110 M Ω to 330 M Ω	2200 $\mu\Omega/\Omega + 75000 \Omega$

Resistance Based thermometry. As per resistance CMC's using the tables outlined in appendix C of "Traceable Temperatures" second edition.

(j) LCR meters

Capacitance

220 pF to 399.9 pF	10 Hz to 10 kHz	3700 $\mu\text{F}/\text{F} + 0.0000076 \mu\text{F}$
0.4 nF to 1.099 nF	10 Hz to 10 kHz	3700 $\mu\text{F}/\text{F} + 0.0000076 \mu\text{F}$
1.1 nF to 3.299 nF	10 Hz to 3 kHz	3700 $\mu\text{F}/\text{F} + 0.0000076 \mu\text{F}$
3.3 nF to 10.99 nF	10 Hz to 1 kHz	1800 $\mu\text{F}/\text{F} + 0.0000076 \mu\text{F}$
11 nF to 32.99 nF	10 Hz to 1 kHz	1800 $\mu\text{F}/\text{F} + 0.000076 \mu\text{F}$
33 nF to 109.99 nF	10 Hz to 1 kHz	1800 $\mu\text{F}/\text{F} + 0.000076 \mu\text{F}$
110 nF to 329.99 nF	10 Hz to 1 kHz	1800 $\mu\text{F}/\text{F} + 0.00022 \mu\text{F}$
0.33 μF to 1.099 μF	10 Hz to 600 Hz	1800 $\mu\text{F}/\text{F} + 0.00076 \mu\text{F}$
1.1 μF to 3.299 μF	10 Hz to 300 Hz	1800 $\mu\text{F}/\text{F} + 0.0022 \mu\text{F}$
3.3 μF to 10.99 μF	10 Hz to 150 Hz	1800 $\mu\text{F}/\text{F} + 0.0076 \mu\text{F}$
11 μF to 32.99 μF	10 Hz to 120 Hz	3000 $\mu\text{F}/\text{F} + 0.022 \mu\text{F}$
33 μF to 109.99 μF	10 Hz to 80 Hz	3400 $\mu\text{F}/\text{F} + 0.076 \mu\text{F}$
110 μF to 329.99 μF	0 Hz to 50 Hz	3400 $\mu\text{F}/\text{F} + 0.22 \mu\text{F}$
0.33 mF to 1.099 mF	0 Hz to 20 Hz	3400 $\mu\text{F}/\text{F} + 0.76 \mu\text{F}$
1.1 mF to 3.299 mF	0 Hz to 6 Hz	3400 $\mu\text{F}/\text{F} + 2.2 \mu\text{F}$
3.3 mF to 10.99 mF	0 Hz to 2 Hz	3400 $\mu\text{F}/\text{F} + 7.6 \mu\text{F}$
11 mF to 32.99 mF	0 Hz to 0.6 Hz	5600 $\mu\text{F}/\text{F} + 22 \mu\text{F}$
33 mF to 110 mF	0 Hz to 0.2 Hz	8300 $\mu\text{F}/\text{F} + 76 \mu\text{F}$

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(q) Other specified devices

Frequency meters

10 Hz to 2.000 MHz

1.9 $\mu\text{Hz/Hz}$ + 3.8 μHz

Note 1:

Unless stated otherwise the CMC is based on the performance of the best available device and measurement uncertainties achieved for specific calibrations may be greater than the CMC Uncertainty. A laboratory may not report measurement uncertainties lower than its CMC. However, if the device under calibration has a greater accuracy than the device used to calculate the CMC the laboratory may be able to use the calibration data to lower its CMC Uncertainty. Please contact the laboratory to discuss your specific requirements.

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