

## Mass and Related Quantities, Chile, INN (Instituto Nacional de Normalizacion)

Service providers: CESMEC (Centro de Estudios, Medicion y Certificacion de Calidad) and IDIC (Instituto de Investigaciones y Control)

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty						
Class	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?	Service Provider	Internal identifier
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	1	1	mg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.002	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	2	2	mg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.002	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	5	5	mg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.002	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							

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Conventional mass	Standard weights	Substitution weighing with buoyancy correction	10	10	mg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.002	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	20	20	mg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.003	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	50	50	mg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.004	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							

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Conventional mass	Standard weights	Substitution weighing with buoyancy correction	100	100	mg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.005	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	200	200	mg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.006	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	500	500	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.008	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							

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Conventional mass	Standard weights	Substitution weighing with buoyancy correction	1	1	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.01	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	2	2	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.012	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	5	5	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.015	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							

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Conventional mass	Standard weights	Substitution weighing with buoyancy correction	10	10	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.02	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	20	20	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.025	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	50	50	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.03	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							

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Conventional mass	Standard weights	Substitution weighing with buoyancy correction	100	100	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.05	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	200	200	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.10	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	500	500	g	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.25	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							

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Conventional mass	Standard weights	Substitution weighing with buoyancy correction	1	1	kg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	0.5	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	2	2	kg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	1	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	5	5	kg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	2.5	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							

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Conventional mass	Standard weights	Substitution weighing with buoyancy correction	10	10	kg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	5	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	20	20	kg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	10	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							
Conventional mass	Standard weights	Substitution weighing with buoyancy correction	50	50	kg	Laboratory temperature	18 °C to 27 °C, the allowed temperature change in 1 hour is equal to $\pm 0.5$ °C, in 4 hours: $\pm 0.7$ °C and in 24 hours: $\pm 1$ °C	75	mg	2	95%	No	CESMEC	131-750
						Humidity	40 % to 60 %, the allowed humidity change in 4 hours is equal to $\pm 10$ %							

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Class	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?	Service Provider	Internal identifier
Force	STFR 50 kN	Force reference transducer system	0.5	5	kN	Temperature	(22 ± 1) %	0.05	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							
Force	STFR 50 kN	Force reference transducer system	1	10	kN	Temperature	(22 ± 1) %	0.05	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							
Force	STFR 50 kN	Force reference transducer system	2	20	kN	Temperature	(22 ± 1) %	0.05	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							
Force	STFR 50 kN	Force reference transducer system	5	50	kN	Temperature	(22 ± 1) %	0.05	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							
Force	STFR 500 kN	Force reference transducer system	10	100	kN	Temperature	(22 ± 1) %	0.05	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							
Force	STFR 500 kN	Force reference transducer system	20	200	kN	Temperature	(22 ± 1) %	0.05	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							
Force	STFR 500 kN	Force reference transducer system	50	500	kN	Temperature	(22 ± 1) %	0.05	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							
Force	STFR 3 MN	Force reference transducer system	0.1	1	MN	Temperature	(22 ± 1) %	0.05	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							



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Class	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?	Service Provider	Internal identifier
Force	STFR 3 MN	Force reference transducer system	0.3	3	MN	Temperature	(22 ± 1) %	0.10	%	2	95%	Yes	IDIC	
						Humidity	(50 ± 10) %							