



WL Comércio e Calibração de Pesos Padrão Ltda.



Certificado de Calibração Nº **WL1889/2023**

Proposta Comercial: **1263/2023**

Solicitante:
Endereço:
Cidade/Estado:

PHOENIX COMÉRCIO DE BALANÇAS LTDA
Rua Felipe Cardoso de Campos, 290 - Vila Caiuba
SÃO PAULO / SP

Contratante:
Endereço:
Cidade/Estado:

O mesmo
O mesmo
O mesmo

Descrição do Instrumento: PESOS-PADRÃO

Descrição:	15x20 kg	Fabricante:	WL PESOS-PADRÃO
Formato:	U	Identif. do Conjunto:	Jogo 2
Quantidade:	15 Peças	Material:	Ferro Fundido
Nº de Série:	N/C	Classe declarada:	M1

Condições Ambientais Durante a Calibração

Temperatura (°C)	Umidade relativa do ar (%)	Pressão Atmosférica (hPa)
21,8 ± 1,2	52 ± 7	928 ± 6

Rastreabilidade

Comparadores/Balanças utilizadas

Identificação	Certificado	Data de Calibração	Data de Validade	Lab. Acreditado
BAL 03	WLBAL03/23	07/02/2023	07/2024	CAL 0682
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Conjunto de Pesos-Padrão utilizados

Identificação	Certificado	Data de Calibração	Data de Validade	Lab. Acreditado
CP-001	MA 219_12_22	21/12/2022	06/2024	CAL 0291
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Thermo-baro-higrômetro utilizado

Identificação	Certificado	Data de Calibração	Data de Validade	Lab. Acreditado
TH-003	224862/23	25/05/2023	05/2025	CAL 0056
TH -003	224863/23	25/05/2023	05/2025	CAL 0056

Responsáveis:



Conferência

Gabriel Ananias Vreque
Técnico Executante



Mislene da Silva Santos
Gerente Técnico

Data da Calibração: 15/12/2023

Data da Emissão: 18/12/2023

R. Manoel Lopes da Cunha, 115 - Vila Mangalot - São Paulo/SP - Tel: (11) 3641-5974

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Procedimentos de Calibração

A calibração é realizada pelo método de comparação direta, utilizando os pesos-padrão de referência do Laboratório de Massas da WL Pesos Padrão de classe superior ao objeto medido, classificados segundo a OIML R111-1 e portaria 289/21, de acordo com o PR-7.2.6.1 Calibração de Pesos-Padrão.

Resultado da Calibração

Item	TAG/ Identificação	Inscrição/ Marcação	Valor Nominal (g)	Sem ajuste (g)		Com ajuste (g)		Incerteza (g)	V _{eff}	(k)
				Valor Convencional	Erro	Valor Convencional	Erro			
1	116	M 20 kg	20000	20000,3	0,3	---	---	0,3	19	2,15
2	117	M 20 kg	20000	20000,3	0,3	---	---	0,3	∞	2,00
3	118	M 20kg	20000	20000,3	0,3	---	---	0,3	16	2,18
4	119	M 20kg	20000	20000,2	0,2	---	---	0,3	19	2,15
5	120	M 20kg	20000	20000,1	0,1	---	---	0,3	19	2,15
6	121	M 20kg	20000	20000,3	0,3	---	---	0,3	16	2,18
7	122	M 20kg	20000	20000,2	0,2	---	---	0,3	16	2,18
8	123	M 20kg	20000	20000,1	0,1	---	---	0,3	∞	2,00
9	124	M 20kg	20000	20000,3	0,3	---	---	0,3	16	2,18
10	125	M 20kg	20000	20000,3	0,3	---	---	0,3	∞	2,00
11	126	M 20kg	20000	20000,3	0,3	---	---	0,3	54	2,05
12	127	M 20kg	20000	20000,3	0,3	---	---	0,3	∞	2,00
13	128	M 20kg	20000	20000,2	0,2	---	---	0,3	54	2,05
14	129	M 20kg	20000	20000,3	0,3	---	---	0,3	19	2,15
15	130	M 20 kg	20000	20000,2	0,2	---	---	0,3	∞	2,00
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Observações:

- O ajuste ou recuperação dos pesos, quando for realizado, não pertence ao escopo de acreditação do laboratório.
- A incerteza expandida de medição relatada é declarada como a incerteza padrão da medição multiplicada pelo fator de abrangência k, o qual para uma distribuição t com V_{eff} igual ao respectivo número de graus de liberdade efetivos que corresponde a uma probabilidade de abrangência de 95,45%. A incerteza padrão de medição foi determinada de acordo com a publicação EA-4/02.
- Os resultados apresentados referem-se exclusivamente ao instrumento acima caracterizado, não sendo extensivo a quaisquer lotes.
- Permitida somente reprodução integral deste certificado. O uso promocional requer autorização formal da WL Pesos-Padrão.
- A CGCRE é signatária do Acordo de Reconhecimento Mútuo da IAAC.
- Esta calibração não isenta o instrumento de controle metrológico estabelecido na regulamentação metrológica.

Laboratório de calibração, acreditado pela CGCRE de acordo com a ABNT NBR ISO/IEC, sob o número CAL 0682.

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