

TROEMNER

OIML Weights & Weight Sets



TROEMNER

Troemner, an ISO 9001 registered company, is the world's leading supplier of precision weights, weight sets, mass standards and associated calibration/certification services. Founded in 1840, the company manufactures and certifies weights to meet or exceed the highest tolerance standards of the Organization Internationale de Métrologie Légale (OIML), the American Society for Testing & Materials (ASTM) and the United States' National Institute of Standards & Technology (NIST).

In addition to our weight manufacturing capabilities, Troemner has the largest independent commercial metrology laboratory in the world—offering complete, full-time weight calibration and certification services. Our laboratories are fully accredited by the U.S. NIST-administered National Voluntary Laboratory Accreditation Program (NVLAP) and its U.K. equivalent, the United Kingdom Accreditation Service (UKAS), formerly known as NAMAS. Troemner is UKAS Calibration Laboratory No. 0516.

UKAS is widely recognized internationally through bilateral and multilateral agreements and through its participation in the European Cooperation for Accreditation of Laboratories (EAL). EAL was formed by the amalgamation of the Western European Calibration Cooperation (WECC) and the Western European Laboratory Accreditation Cooperation (WELAC).

Through EAL, UKAS is signatory to multilateral agreements with Denmark, Finland, France, Germany, Ireland, Italy, The Netherlands, Norway, Spain, Sweden and Switzerland. In addition, UKAS has bilateral mutual recognition agreements on calibration with Australia, Hong Kong, New Zealand and South Africa.

Since 1840, Troemner's business has been precision. Today our weights are directly traceable to multiple national prototype kilograms in conformance with the International Standard ISO 9001 concerning inspection, measuring and test

□ □ equipment." We are pleased to offer you the OIML weights and weight sets in this brochure—our most precise weights for your most precise work.



**TROEMNER
ULTRACLASSSM
CALIBRATION &
CERTIFICATION**

UKAS, NIST/NVLAP and MMAP calibrations/certifications are performed in Troemner's fully-accredited Certification Laboratory using the most advanced state-of-the-art mass comparators. Extremely low measurement uncertainties are achieved through a combination of ultra-precise environmental, temperature and vibration controls as well as multiple comparison weighings using several traceable mass standards. For an expanded summary of Troemner's UltraClass Calibration & Certification program, see back page.



OIML WEIGHTS & WEIGHTS SETS

TROEMNER OIML weights conform to the standards of the Organization Internationale de Métrologie Légale (OIML) International Recommendation R111. They are manufactured of stainless steel with low magnetic permeability and high resistance to corrosion. All surfaces are polished to a perfect, mirror-like finish.

Precision & Detail—Every Troemner precision stainless steel weight is manufactured to meet the most exacting requirements for accuracy and appearance. Precision and detail are accomplished using the latest computer-based metal-working equipment. Weight heads and necks are precisely shaped to give a solid, sure grip to forceps or weight lifters. Weight bottoms are slightly recessed to expose the smallest possible area of wear.

Adjustment—Weights are adjusted on the basis of apparent mass versus material of 8.0g/cm³ density following OIML International Recommendation No. R111.

Weight Cases—Weight sets 500 grams and higher are supplied in strong wooden cases. These handcrafted oak cases are fully lined with padded velvet or velour. Weight sets 200 grams and lower, and all individual weights, come in attractive, sturdy plastic cases. Also, “interior” weight sets (200g - 1mg), which are an integral part of larger weight set configurations, are supplied in plastic cases.

If the customer so desires, wood cases may be substituted for plastic-cased weight sets and individual weights (20kg - 1g) at an extra charge. Forceps and/or gloves are supplied with all weight sets.

TOLERANCES

Calibration Tolerances International Recommendation OIML R111

Nominal Value	E1 Class Tolerances In mg+/-	E2 Class Tolerances In mg+/-	F1 Class Tolerances In mg+/-	F2 Class Tolerances In mg+/-
1 mg	0.002	0.006	0.020	0.06
2 mg	0.002	0.006	0.020	0.06
5 mg	0.002	0.006	0.020	0.06
10 mg	0.002	0.008	0.025	0.08
20 mg	0.003	0.010	0.03	0.10
50 mg	0.004	0.012	0.04	0.12
100 mg	0.005	0.015	0.05	0.15
200 mg	0.006	0.020	0.06	0.20
500 mg	0.008	0.025	0.08	0.25
1 g	0.010	0.030	0.10	0.3
2 g	0.012	0.040	0.12	0.4
5 g	0.015	0.050	0.15	0.5
10 g	0.020	0.060	0.20	0.6
20 g	0.025	0.080	0.25	0.8
50 g	0.030	0.10	0.30	1.0
100 g	0.05	0.15	0.5	1.5
200 g	0.10	0.30	1.0	3.0
500 g	0.25	0.75	2.5	7.5
1 kg	0.5	1.5	5	15
2 kg	1.0	3.0	10	30
5 kg	2.5	7.5	25	75
10 kg	5	15	50	150
20 kg	10	30	100	300
50 kg	25	75	250	750

INDIVIDUAL WEIGHTS



* Density Certification is highly recommended for one-piece weights used as reference standards. To order a Troemner Density Certification, use part number WDC-111.

CLASS E1*				
Nominal Mass Value	+/- mg	Individual Weight Order No.	Individual Weight with UKAS Certificate Order No.	Individual Weight with NIST/NVLAP Certificate Order No.
1 mg	0.002	7537-E1P	7537-E1PNA	7537-E1PW
2 mg	0.002	7536-E1P	7536-E1PNA	7536-E1PW
5 mg	0.002	7534-E1P	7534-E1PNA	7534-E1PW
10 mg	0.002	7533-E1P	7533-E1PNA	7533-E1PW
20 mg	0.003	7532-E1P	7532-E1PNA	7532-E1PW
50 mg	0.004	7530-E1P	7530-E1PNA	7530-E1PW
100 mg	0.005	7529-E1P	7529-E1PNA	7529-E1PW
200 mg	0.006	7528-E1P	7528-E1PNA	7528-E1PW
500 mg	0.008	7526-E1P	7526-E1PNA	7526-E1PW
1 g	0.010	7525-E1P	7525-E1PNA	7525-E1PW
2 g	0.012	7524-E1P	7524-E1PNA	7524-E1PW
5 g	0.015	7522-E1P	7522-E1PNA	7522-E1PW
10 g	0.020	7521-E1P	7521-E1PNA	7521-E1PW
20 g	0.025	7520-E1P	7520-E1PNA	7520-E1PW
50 g	0.030	7518-E1P	7518-E1PNA	7518-E1PW
100 g	0.05	7517-E1P	7517-E1PNA	7517-E1PW
200 g	0.10	7516-E1P	7516-E1PNA	7516-E1PW
500 g	0.25	7514-E1P	7514-E1PNA	7514-E1PW
1 kg	0.5	7513-E1P	7513-E1PNA	7513-E1PW
2 kg	1.0	7512-E1P	7512-E1PNA	7512-E1PW
5 kg	2.5	7510-E1P	7510-E1PNA	7510-E1PW
10 kg	5	7509-E1P	7509-E1PNA	7509-E1PW
20 kg	10	7508-E1P	7508-E1PNA	7508-E1PW
50 kg	25	7505-E1	—	—

CLASS E2*				
Nominal Mass Value	+/- mg	Individual Weight Order No.	Individual Weight with UKAS Certificate Order No.	Individual Weight with NIST/NVLAP Certificate Order No.
1 mg	0.006	7537-E2P	7537-E2PNA	7537-E2PW
2 mg	0.006	7536-E2P	7536-E2PNA	7536-E2PW
5 mg	0.006	7534-E2P	7534-E2PNA	7534-E2PW
10 mg	0.008	7533-E2P	7533-E2PNA	7533-E2PW
20 mg	0.010	7532-E2P	7532-E2PNA	7532-E2PW
50 mg	0.012	7530-E2P	7530-E2PNA	7530-E2PW
100 mg	0.015	7529-E2P	7529-E2PNA	7529-E2PW
200 mg	0.020	7528-E2P	7528-E2PNA	7528-E2PW
500 mg	0.025	7526-E2P	7526-E2PNA	7526-E2PW
1 g	0.030	7525-E2P	7525-E2PNA	7525-E2PW
2 g	0.040	7524-E2P	7524-E2PNA	7524-E2PW
5 g	0.050	7522-E2P	7522-E2PNA	7522-E2PW
10 g	0.060	7521-E2P	7521-E2PNA	7521-E2PW
20 g	0.080	7520-E2P	7520-E2PNA	7520-E2PW
50 g	0.10	7518-E2P	7518-E2PNA	7518-E2PW
100 g	0.15	7517-E2P	7517-E2PNA	7517-E2PW
200 g	0.30	7516-E2P	7516-E2PNA	7516-E2PW
500 g	0.75	7514-E2P	7514-E2PNA	7514-E2PW
1 kg	1.5	7513-E2P	7513-E2PNA	7513-E2PW
2 kg	3.0	7512-E2P	7512-E2PNA	7512-E2PW
5 kg	7.5	7510-E2P	7510-E2PNA	7510-E2PW
10 kg	15	7509-E2P	7509-E2PNA	7509-E2PW
20 kg	30	7508-E2P	7508-E2PNA	7508-E2PW
50 kg	75	7505-E2	—	—

500 mg - 1 mg wire weights are available individually or in weight sets.
Please see OIML Price List for details.



Class E1 and E2 weights are of solid construction. Class F1 and F2 weights are standard with an adjusting cavity unless otherwise specified at time of order.

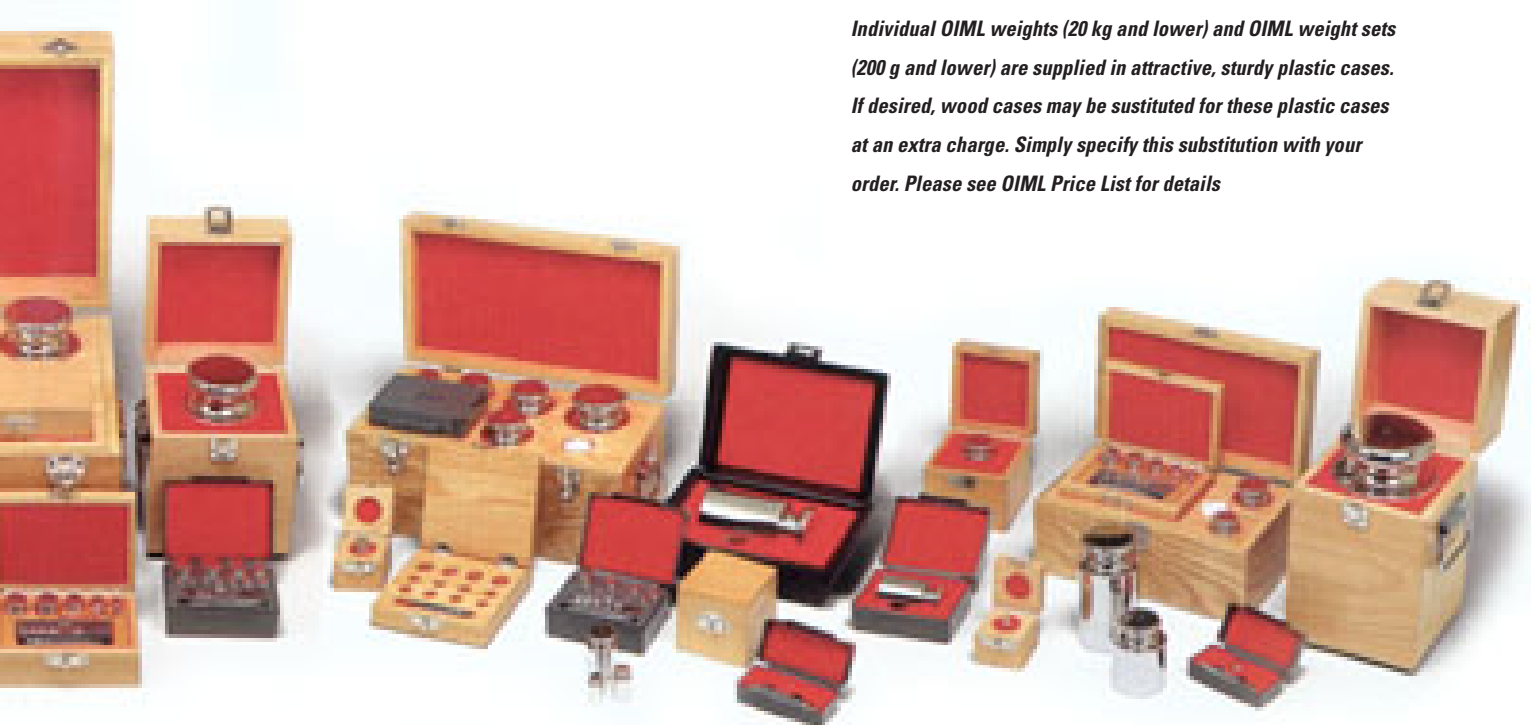
CLASS F1				
Nominal Mass Value	+/- mg	Individual Weight Order No.	Individual Weight with UKAS Certificate Order No.	Individual Weight with NIST/NVLAP Certificate Order No.
1 mg	0.020	7537-F1P	7537-F1PNA	7537-F1PW
2 mg	0.020	7536-F1P	7536-F1PNA	7536-F1PW
5 mg	0.020	7534-F1P	7534-F1PNA	7534-F1PW
10 mg	0.025	7533-F1P	7533-F1PNA	7533-F1PW
20 mg	0.03	7532-F1P	7532-F1PNA	7532-F1PW
50 mg	0.04	7530-F1P	7530-F1PNA	7530-F1PW
100 mg	0.05	7529-F1P	7529-F1PNA	7529-F1PW
200 mg	0.06	7528-F1P	7528-F1PNA	7528-F1PW
500 mg	0.08	7526-F1P	7526-F1PNA	7526-F1PW
1 g	0.10	7525-F1P	7525-F1PNA	7525-F1PW
2 g	0.12	7524-F1P	7524-F1PNA	7524-F1PW
5 g	0.15	7522-F1P	7522-F1PNA	7522-F1PW
10 g	0.20	7521-F1P	7521-F1PNA	7521-F1PW
20 g	0.25	7520-F1P	7520-F1PNA	7520-F1PW
50 g	0.30	7518-F1P	7518-F1PNA	7518-F1PW
100 g	0.5	7517-F1P	7517-F1PNA	7517-F1PW
200 g	1.0	7516-F1P	7516-F1PNA	7516-F1PW
500 g	2.5	7514-F1P	7514-F1PNA	7514-F1PW
1 kg	5	7513-F1P	7513-F1PNA	7513-F1PW
2 kg	10	7512-F1P	7512-F1PNA	7512-F1PW
5 kg	25	7510-F1P	7510-F1PNA	7510-F1PW
10 kg	50	7509-F1P	7509-F1PNA	7509-F1PW
20 kg	100	7508-F1P	7508-F1PNA	7508-F1PW
50 kg	250	7505-F1	—	—

CLASS F2				
Nominal Mass Value	+/- mg	Individual Weight Order No.	Individual Weight with UKAS Certificate Order No.	Individual Weight with NIST/NVLAP Certificate Order No.
1 mg	0.06	7537-F2P	7537-F2PNA	7537-F2PW
2 mg	0.06	7536-F2P	7536-F2PNA	7536-F2PW
5 mg	0.06	7534-F2P	7534-F2PNA	7534-F2PW
10 mg	0.08	7533-F2P	7533-F2PNA	7533-F2PW
20 mg	0.10	7532-F2P	7532-F2PNA	7532-F2PW
50 mg	0.12	7530-F2P	7530-F2PNA	7530-F2PW
100 mg	0.15	7529-F2P	7529-F2PNA	7529-F2PW
200 mg	0.20	7528-F2P	7528-F2PNA	7528-F2PW
500 mg	0.25	7526-F2P	7526-F2PNA	7526-F2PW
1 g	0.3	7525-F2P	7525-F2PNA	7525-F2PW
2 g	0.4	7524-F2P	7524-F2PNA	7524-F2PW
5 g	0.5	7522-F2P	7522-F2PNA	7522-F2PW
10 g	0.6	7521-F2P	7521-F2PNA	7521-F2PW
20 g	0.8	7520-F2P	7520-F2PNA	7520-F2PW
50 g	1.0	7518-F2P	7518-F2PNA	7518-F2PW
100 g	1.5	7517-F2P	7517-F2PNA	7517-F2PW
200 g	3.0	7516-F2P	7516-F2PNA	7516-F2PW
500 g	7.5	7514-F2P	7514-F2PNA	7514-F2PW
1 kg	15	7513-F2P	7513-F2PNA	7513-F2PW
2 kg	30	7512-F2P	7512-F2PNA	7512-F2PW
5 kg	75	7510-F2P	7510-F2PNA	7510-F2PW
10 kg	150	7509-F2P	7509-F2PNA	7509-F2PW
20 kg	300	7508-F2P	7508-F2PNA	7508-F2PW
50 kg	750	7505-F2	—	—

CASES FOR OIML WEIGHTS:

Individual OIML weights (20 kg and lower) and OIML weight sets (200 g and lower) are supplied in attractive, sturdy plastic cases.

If desired, wood cases may be substituted for these plastic cases at an extra charge. Simply specify this substitution with your order. Please see OIML Price List for details



WEIGHT SETS



* Density Certification is highly recommended for one-piece weights used as reference standards. To order a Troemner Density Certification, use part number WDC-1111.

CLASS E1*			
Nominal Mass Value	Weight Set Order No.	Weight Set with UKAS Certificate Order No.	Weight Set with NIST/NVLAP Certificate Order No.
500 mg-1mg	7440-E1P	7440-E1PNA	7440-E1PW
5g-1mg	7441-E1P	7441-E1PNA	7441-E1PW
50g-1mg	7433-E1P	7433-E1PNA	7433-E1PW
50g-1g	7429-E1P	7429-E1PNA	7429-E1PW
100g-1mg	7428-E1P	7428-E1PNA	7428-E1PW
100g-1g	7424-E1P	7424-E1PNA	7424-E1PW
200g-1mg	7423-E1P	7423-E1PNA	7423-E1PW
200g-1g	7422-E1P	7422-E1PNA	7422-E1PW
500g-1mg	7419-E1	7419-E1NA	7419-E1W
500g-1g	7418-E1	7418-E1NA	7418-E1W
1kg-1mg	7417-E1	7417-E1NA	7417-E1W
1kg-1g	7416-E1	7416-E1NA	7416-E1W
2kg-1mg	7415-E1	7415-E1NA	7415-E1W
2kg-1g	7414-E1	7414-E1NA	7414-E1W
5kg-1mg	7411-E1	7411-E1NA	7411-E1W
5kg-1g	7410-E1	7410-E1NA	7410-E1W
5kg-1kg	7442-E1	7442-E1NA	7442-E1W
10kg-1mg	7409-E1	7409-E1NA	7409-E1W
10kg-1g	7408-E1	7408-E1NA	7408-E1W
20kg-1mg	7407-E1	7407-E1NA	7407-E1W
20kg-1g	7406-E1	7406-E1NA	7406-E1W

CLASS E2*			
Nominal Mass Value	Weight Set Order No.	Weight Set with UKAS Certificate Order No.	Weight Set with NIST/NVLAP Certificate Order No.
500 mg-1mg	7440-E2P	7440-E2PNA	7440-E2PW
5g-1mg	7441-E2P	7441-E2PNA	7441-E2PW
50g-1mg	7433-E2P	7433-E2PNA	7433-E2PW
50g-1g	7429-E2P	7429-E2PNA	7429-E2PW
100g-1mg	7428-E2P	7428-E2PNA	7428-E2PW
100g-1g	7424-E2P	7424-E2PNA	7424-E2PW
200g-1mg	7423-E2P	7423-E2PNA	7423-E2PW
200g-1g	7422-E2P	7422-E2PNA	7422-E2PW
500g-1mg	7419-E2	7419-E2NA	7419-E2W
500g-1g	7418-E2	7418-E2NA	7418-E2W
1kg-1mg	7417-E2	7417-E2NA	7417-E2W
1kg-1g	7416-E2	7416-E2NA	7416-E2W
2kg-1mg	7415-E2	7415-E2NA	7415-E2W
2kg-1g	7414-E2	7414-E2NA	7414-E2W
5kg-1mg	7411-E2	7411-E2NA	7411-E2W
5kg-1g	7410-E2	7410-E2NA	7410-E2W
5kg-1kg	7442-E2	7442-E2NA	7442-E2W
10kg-1mg	7409-E2	7409-E2NA	7409-E2W
10kg-1g	7408-E2	7408-E2NA	7408-E2W
20kg-1mg	7407-E2	7407-E2NA	7407-E2W
20kg-1g	7406-E2	7406-E2NA	7406-E2W

CLASS F1			
Nominal Mass Value	Weight Set Order No.	Weight Set with UKAS Certificate Order No.	Weight Set with NIST/NVLAP Certificate Order No.
500 mg-1mg	7440-F1P	7440-F1PNA	7440-F1PW
5g-1mg	7441-F1P	7441-F1PNA	7441-F1PW
50g-1mg	7433-F1P	7433-F1PNA	7433-F1PW
50g-1g	7429-F1P	7429-F1PNA	7429-F1PW
100g-1mg	7428-F1P	7428-F1PNA	7428-F1PW
100g-1g	7424-F1P	7424-F1PNA	7424-F1PW
200g-1mg	7423-F1P	7423-F1PNA	7423-F1PW
200g-1g	7422-F1P	7422-F1PNA	7422-F1PW
500g-1mg	7419-F1	7419-F1NA	7419-F1W
500g-1g	7418-F1	7418-F1NA	7418-F1W
1kg-1mg	7417-F1	7417-F1NA	7417-F1W
1kg-1g	7416-F1	7416-F1NA	7416-F1W
2kg-1mg	7415-F1	7415-F1NA	7415-F1W
2kg-1g	7414-F1	7414-F1NA	7414-F1W
5kg-1mg	7411-F1	7411-F1NA	7411-F1W
5kg-1g	7410-F1	7410-F1NA	7410-F1W
5kg-1kg	7442-F1	7442-F1NA	7442-F1W
10kg-1mg	7409-F1	7409-F1NA	7409-F1W
10kg-1g	7408-F1	7408-F1NA	7408-F1W
20kg-1mg	7407-F1	7407-F1NA	7407-F1W
20kg-1g	7406-F1	7406-F1NA	7406-F1W

CLASS F2			
Nominal Mass Value	Weight Set Order No.	Weight Set with UKAS Certificate Order No.	Weight Set with NIST/NVLAP Certificate Order No.
500 mg-1mg	7440-F2P	7440-F2PNA	7440-F2PW
5g-1mg	7441-F2P	7441-F2PNA	7441-F2PW
50g-1mg	7433-F2P	7433-F2PNA	7433-F2PW
50g-1g	7429-F2P	7429-F2PNA	7429-F2PW
100g-1mg	7428-F2P	7428-F2PNA	7428-F2PW
100g-1g	7424-F2P	7424-F2PNA	7424-F2PW
200g-1mg	7423-F2P	7423-F2PNA	7423-F2PW
200g-1g	7422-F2P	7422-F2PNA	7422-F2PW
500g-1mg	7419-F2	7419-F2NA	7419-F2W
500g-1g	7418-F2	7418-F2NA	7418-F2W
1kg-1mg	7417-F2	7417-F2NA	7417-F2W
1kg-1g	7416-F2	7416-F2NA	7416-F2W
2kg-1mg	7415-F2	7415-F2NA	7415-F2W
2kg-1g	7414-F2	7414-F2NA	7414-F2W
5kg-1mg	7411-F2	7411-F2NA	7411-F2W
5kg-1g	7410-F2	7410-F2NA	7410-F2W
5kg-1kg	7442-F2	7442-F2NA	7442-F2W
10kg-1mg	7409-F2	7409-F2NA	7409-F2W
10kg-1g	7408-F2	7408-F2NA	7408-F2W
20kg-1mg	7407-F2	7407-F2NA	7407-F2W
20kg-1g	7406-F2	7406-F2NA	7406-F2W

WEIGHT SETS

■ Weights contained in the set

● Weights with a marking to indicate second weight of same nominal value

Range	Cont.	mg	g	kg
500 mg - 1 mg	1	■		
Total Contents:	2	■ ●		
1.1 g	5	■		
12 weights	10	■		
	20	■ ●		
	50	■		
	100	■		
	200	■ ●		
	500	■		
5 g - 1 mg	1	■	■	
Total Contents:	2	■ ●	■ ●	
11.11 g	5	■	■	
16 weights	10	■		
	20	■ ●		
	50	■		
	100	■		
	200	■ ●		
	500	■		
50 g - 1 mg	1	■	■	
Total Contents:	2	■ ●	■ ●	
111.11 g	5	■	■	
20 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●		
	500	■		
100 g - 1 mg	1	■	■	
Total Contents:	2	■ ●	■ ●	
211.11 g	5	■	■	
21 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●		
	500	■		
200 g - 1 mg	1	■	■	
Total Contents:	2	■ ●	■ ●	
611.11 g	5	■	■	
23 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●	■ ●	
	500	■		
500 g - 1 mg	1	■	■	
Total Contents:	2	■ ●	■ ●	
1111.11 g	5	■	■	
24 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●	■ ●	
	500	■		

Range	Cont.	mg	g	kg
1 kg - 1 mg	1	■	■	■
Total Contents:	2	■ ●	■ ●	■ ●
2,111.1 g	5	■	■	
25 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●	■ ●	
	500	■	■	
2 kg - 1 mg	1	■	■	■
Total Contents:	2	■ ●	■ ●	■ ●
6,111.11 g	5	■	■	
27 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●	■ ●	
	500	■	■	
5 kg - 1 mg	1	■	■	■
Total Contents:	2	■ ●	■ ●	■ ●
11,111.11 g	5	■	■	
28 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●	■ ●	
	500	■	■	
10 kg - 1 mg	1	■	■	■
Total Contents:	2	■ ●	■ ●	■ ●
21,111.11 g	5	■	■	
29 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●	■ ●	
	500	■	■	
20 kg - 1 mg	1	■	■	■
Total Contents:	2	■ ●	■ ●	■ ●
41,111.11 g	5	■	■	
30 weights	10	■		
	20	■ ●	■ ●	
	50	■	■	
	100	■		
	200	■ ●	■ ●	
	500	■	■	
5 kg - 1 kg	1			■
Total Contents:	2			■ ●
10,000 g	5			■
4 weights	10			
	20			
	50			
	100			
	200			
	500			



SPECIAL & CUSTOM WEIGHTS

Meeting your special weight needs is a Troemner specialty. We can custom make precisely the weight you need: In any size, any denomination, any material, any shape, any tolerance. Contact us for a no-obligation quotation.

WEIGHT RECALIBRATION

Troemner will recalibrate and certify virtually any size or type of weight—from a few micrograms to 2000 kg—from any manufacturer.

To ensure quick turnaround for customers outside the U.S., we cover all air freight charges for weight sets up to and including 1 kg.

In addition to adjustment and recalibration, Troemner's refinishing services can return your used weights to like-new condition—with precise polishing and refinishing. This option extends the life of your weight set(s) and helps avoid costly replacement. Weight cases can be restored or replaced also.

Fees vary with accuracy class, construction and quantity of weights involved. Please contact us for free estimates, shipping information or technical assistance.

OIML WEIGHT ACCESSORIES

Troemner offers a number of useful accessories to aid in the proper handling of OIML weights. Available in several sizes, these include plastic forceps, anti-magnetic stainless steel forceps with silicon tips, weight lifting forks and weight lifters with handles for heavier weights. Please see OIML Price List for details.

TROEMNER ULTRACLASS CALIBRATION & CERTIFICATION



Troemner's Calibration & Certification Laboratory, accredited by U.S. NIST/NVLAP and its U.K. equivalent, UKAS

Troemner offers economical, fast and highly reliable calibration and certification services. Today, with mass laboratories built to specifications recommended by the U.S. NIST-administered National Voluntary Laboratory Accreditation Program (NVLAP), we provide a new, higher level of service over a broad range from 1 mg to 30 kg—Troemner UltraClass Calibration & Certification.

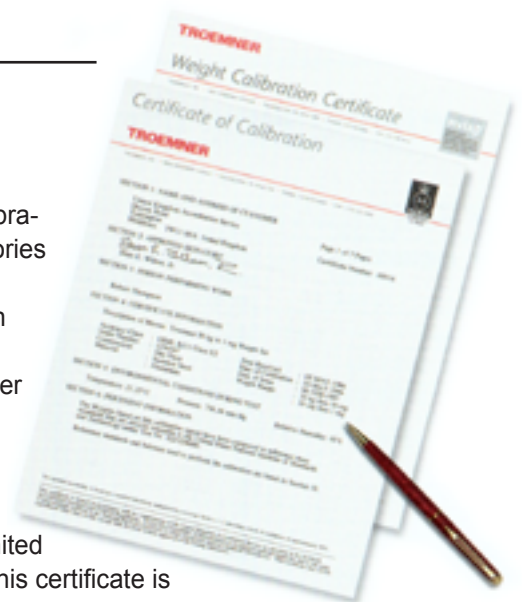
Troemner UKAS Certificate of Calibration—The format and content of this multi-page certificate, as well as the enhanced measurement processes utilized, meet the United Kingdom Accreditation Service (UKAS) requirements. This certificate is universally accepted throughout the world. Troemner (UKAS Calibration Laboratory No. 0516) is presently the only UKAS-accredited U.S. mass metrology laboratory offering its customers this internationally recognized service. Additionally, Troemner's UKAS accreditation fulfills the requirements of ISO/IEC 1725 and EN 45001—the widely accepted European standard for competence of calibration laboratories. Laboratories meeting the Guide requirements comply for calibration activities with the relevant requirements of the ISO 9001 series of standards.

The document contains: customer name, address, date of calibration, equipment and standards used in calibration, accuracy class, true mass value (mass in a vacuum), "as found" mass correction (for recalibration), "as left" mass corrections for each weight, uncertainty of measurement process for each weight, environmental conditions during test, construction and density of weights, calibration procedures used, statement of traceability to NIST and a helpful list of terms and definitions.

Troemner NVLAP Calibration Certificate—Similar to the UKAS Certificate, this certificate is developed using procedures and processes prescribed by the U.S. NIST-administered National Voluntary Laboratory Accreditation Program (NVLAP). It contains all the customer, calibration and correction data detailed in the UKAS description above. It also meets all ISO, FDA, GMP, GLP, ANSI/NCSL Z540-1 and Nuclear requirements, as does the UKAS Certificate.

Troemner NIST-MMAP Report of Mass Values—As a participant in U.S. NIST's Mass Measurement Assurance Program (MMAP), Troemner offers a detailed statistical analysis of mass values, generated by NIST, of our measurements of customer's weights. MMAP certification follows a carefully designed calibration procedure—resulting in the highest possible statistical confidence level. MMAP certification meets all NIST/NVLAP and UKAS requirements. A NIST/NVLAP Calibration Certificate is provided along with a multi-page NIST/MMAP report—the same report one receives if weights are submitted directly with NIST for calibration.

Troemner Density Certification—Troemner can also provide a series of measurements traceable to NIST detailing the density of your one-piece weights. Submersing a balance and the weight(s) in a fluor-inert liquid, we compare your weight(s) to other artifacts of known density. This process can determine the density of material with very low uncertainties. The process is highly recommended for Class E1 and E2 one-piece weights used as reference standards.



Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code 105013.

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