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TEST WEIGHTS

Weights yesterday and today
For centuries now, weight pieces have been used in scales for weighing procedures. This original purpose has now almost disappeared. Today, weights are used almost exclusively for adjusting and testing = calibration of electronic balances. They are now named “test weights” as this is their contemporary purpose.

Adjustment or calibration?
▸ ***Adjusting*** a balance means that you are intervening in the weighing system, to make sure that the display is set to show the correct nominal value. With ▸ ***calibration*** on the other hand, there is no intervention, you are testing whether the display is correct and documenting any deviation.

Testing, the right way!
The internationally valid norm OIML R111:2004 classifies test weights hierarchically in accuracy classes, where E1 is the most accurate and M3 is the least accurate weight class. With KERN you get the whole test weight range in all OIML accuracy classes E1, E2, F1, F2, M1, M2, M3.

As the test weight only becomes an ▸ ***ISO 9000ff***-compliant test instrument when its accuracy has been proven, we offer the appropriate ▸ ***Calibration certificate with accreditation symbol*** (in connection with a box) for all KERN test weights. For further details see *Accredited Calibration Service.*

KERN offers you the appropriate test weight package for your balance, consisting of the test weight, box and Calibration certificate with accreditation symbol as proof of its accuracy. The best prerequisite for a correct adjustment or checking of your scales.

▸ ***See the Glossary***

Classes of accuracy of test weights E, F, M and their general relation to the types of balances.

The appropriate OIML tolerance class for the test weight is selected based on the scale’s resolution. The key factor for this is the scale’s increment count:

$$\text{Increment count [n]} = \frac{\text{Maximum capacity [Max]}}{\text{Division value [d]}}$$

E1	Test weights for customers who require a high degree of accuracy for the most demanding applications. For high-resolution balances with d > 1,000,000 Use recommended with Calibration certificate with accreditation symbol only.
E2	Most accurate test weights for high resolution analytical balances of verification class I ≥ 100,000 e
F1	Test weights for analytical balances/precision balances for verification class I/II ≤ 100,000 e
F2	Test weights for precision balances of verification class II ≤ 30,000 e
M1	Test weights for industrial and commercial scales of verification class III ≤ 10,000 e

The appropriate test weight for your new KERN balance can also be found directly in the accessories of the balance in our webshop.

KERN Delivery times & Shipping type	Total weight ≤ 30 kg (gross weight, incl. packaging)	Total weight > 30 kg (gross weight, incl. packaging)
Standard Service Class E2 – M3	4 DAYS	4 DAYS
Standard Service Class E1, 1 mg – 500 mg and recalibration 1 g – 10 kg with a known volume	10 DAYS	10 DAYS
Class E1, ≥ 1 g, incl. volume determination (new weights)	15 DAYS	15 DAYS
Special weights, Newton weights, heavy duty weights, weight carriers, containers for individual weight sets etc.	on request	

Just lean back – we have just the right test weight for your measuring device

KERN offers you a large range of OIML test weights, which you can use at any time to quickly and reliably check your measuring instrument. From milligram weights to tonne weights, from the classic OIML design to special weights which are specifically manufactured to your specifications, we can offer you just the right test weight, and naturally the weights have the relevant calibration certificate with accreditation symbol or factory calibration certificate.

On the following pages you will see a selection of standard test weights for OIML error limit classes E1, E2, F1, F2, M1, M2, M3. We will be happy to manufacture special (large) weights, weight containers, Newton weights or weights with special weight values for you on request. Our test weights product specialist will be happy to give you expert, comprehensive advice.

Note: In our webshop you can conveniently select test weights for your scale that have been calculated and matched to your safety requirements and intended use – with or without calibration. We will be happy to determine the minimum sample quantity according to USP Chapter <41> and recommend a KERN Safety Set especially designed for your scale.

PREMIUM^{+} TEST WEIGHTS

Note: Our highly-accurate OIML test weights are also available as **PREMIUM^{+} test weights** for that extra level of safety. Thanks to the most modern manufacturing technology, these test weights can also be adjusted within the specified error limit classes (= tolerances).

I.e. this means that these **PREMIUM^{+} test weights** have a significantly longer service life, thanks this guaranteed positive tolerance. This is of particular benefit with intensive use of the test weights.

For all the details on this **PREMIUM^{+} service** please see **www.kern-lab.com/premium+** or look at the weight you want in our online shop

Marking – never lose track again!

With the large variety of test equipment used then it is essential that they are identified accurately. We can help you with this and mark your test weights according to your ideas by etching, with impact numbers or laser engraved. Whether it's letters, numbers, your logo, barcodes or something else – it's your choice.
Our product specialist "Test weights" will gladly help you with any questions about this service, prices, etc.

SAFELY LOOKED AFTER

KERN weight boxes made of polyoxymethylene (“POM”) – for the most demanding requirements in highly-sensitive environments such as laboratories and clean rooms

You can rely on the highest quality and safety when storing your KERN test weights for clean room areas. KERN weight boxes made of polyoxymethylene (“POM”) are secure and easy to clean and are essential aids in clean rooms, laboratories or production environments because they protect your test weights perfectly and this enables consistently accurate and reliable measurements.

The robust construction means that there are no edges or padding which could collect dirt. This means that the boxes are particularly easy to clean hygienically.

For test weights in weight classes from E1 to M1, KERN clean room boxes offer further advantages in addition to protection, in order to meet the highest requirements in terms of cleanliness and absence of contamination. They do not require maintenance and are resistant to a range of cleaning products, acids, alkalis, disinfectants and solvents. They can also be cleaned in thermo disinfectors without any problems. In addition, repeated disinfection and cleaning ensures that they meet the highest standards of the clean room environment.

Please note: Our clean room boxes are also available in an antistatic version on request – for additional safety in hazardous areas.

All the advantages of KERN clean room boxes at a glance:

→ extremely stable and robust

→ can be fully disinfected

→ easy to clean

→ without padding or edges which could collect dirt

→ maintenance-free and long-lasting

→ for maximum safety and measurement results

Convenient screw thread without edges which could trap dirt – KERN clean room boxes in detail

→ Do you have any special requirements?

High-quality weight boxes e.g. on request we can also manufacture boxes for rectangular weights or complete weight sets to suit your individual requirements.

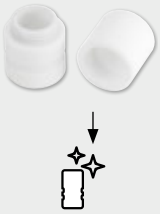
We will be happy to advise you.

Our KERN weight cases at a glance:

for individual weights **Plastic box**

for individual weights **Aluminium protected box**

for individual weights **Wooden box, lined / unlined**



for individual weights **Polyoxymethylene boxes POM, unlined**

for weight sets **Plastic case**

for weight sets **Aluminium protected case**

for weight sets **Wooden case, lined / unlined**

It's your choice!

To protect your test weights we can offer you an appropriate weight case. Choose the right box for your needs. You have the choice between plastic, aluminium protected, wood or polyoxymethylene. The available weight cases are shown as a symbol in the test weight tables on the following pages. This way you have all the materials, versions, sizes and prices at a glance, listed in a concise way.

On request only:
for weight sets
Clean room boxes POM (polyoxymethylene), unlined

It's so easy to order your suitable test weight

1 → **2** → **3** → **4**

According to your safety requirements or the specifications of your QM system, you select the test weight with the appropriate weight value and the required tolerance.

We offer many test weights in different designs, giving you complete freedom to decide which test weights you want to use for your application. It goes without saying that all our test weights comply with the OIML R111:2004 directive.

To protect your high-quality test equipment, we offer you cases in various designs.

A calibration certificate with accreditation symbol – the auditor's favourite! With this certificate you provide the standard-compliant proof of all important values of your test equipment and are on the safe side when operating and testing your measuring equipment.

1		2		3						4	
Weight	Tol +/- mg	Individual weights, compact shape		Individual weights, knob shape		Plastic box		Aluminium protected box		Wooden box		DAkkS-accredited certificate	
		KERN	€	KERN	€	KERN	€	KERN	€	KERN	€	KERN	€
1 g	0,03	316-01	41,-	317-01	51,-	317-020-400	5,-	317-010-600	14,-	317-010-100	32,-	962-331	36,-
2 g	0,04	316-02	42,-	317-02	53,-	317-020-400	5,-	317-020-600	14,-	317-020-100	30,-	962-332	36,-
5 g	0,05	316-03	43,-	317-03	55,-	317-030-400	5,-	317-030-600	14,-	317-030-100	32,-	962-333	36,-
10 g	0,06	316-04	47,-	317-04	57,-	317-040-400	5,-	317-040-600	14				36,-
20 g	0,08	316-05	48,-	317-05	64,-	317-050-400	5						
		316-06	53,-	317-06	71,-								

1	2		3		4	
Weight	Knob shape in plastic case		Knob shape in aluminium protected case		Knob shape in wooden case		DAkkS-accredited certificate	
	KERN	€	KERN	€	KERN	€	KERN	€
1 mg - 500 mg	328-22	165,-	328-226	230,-	-	-	962-450	128,-
1 mg - 50 g	333-024	365,-	333-026	410,-	333-02	370,-	962-401	215,-
1 mg - 100 g	333-034	400,-	333-036	450,-	333-03	405,-	962-402	225,-
1 mg - 200 g	333-044	480,-	333-046	520,-	333-04	490,-	962-403	250,-
1 mg - 500 g	333-054	540,-	333-056	600,-	333-05	560,-	962-404	260,-
1 mg - 1 kg	333-064	710,-	333-066	750,-				280,-
1 mg - 2 kg	333-074	950,-	333-076					

A balance can never be more accurate than the test weight that is used to adjust it, it all depends on its tolerance. **The accuracy of the test weight should correspond to the readout [d] of the balance, or rather be more precise.**

Nominal test weight value is shown in adjust mode “CAL” in the balance display. Given a choice, the heaviest weight is the most suitable for accurate measurement.

Once accuracy and nominal test weight value are specified, the suitable test weight is selected according to the tolerances “Tol” of the individual accuracy classes E2 – M3, see column “Tol ± mg” at the respective weight.

Example:
Balance with weighing range [Max] 2000 g = 2 kg and readout [d] = 0,01 g = 10 mg

- The accuracy of the required test weight is determined by readout [d]: max. tolerance ± 10 mg.
- Displayed weight size on “CAL” mode: 1000 g or 2000 g. The required test weight has a 2 kg weight size.
- Suitable test weights with ± 10 mg tolerance and 2 kg weight size, can be found in accuracy class F1. KERN-No 326-12 or KERN-No 327-12.

Exception: analytical balances (readout [d] ≤ 0,1 mg):
E1 test weights are recommended. Depending on the safety requirements, E2 test weights with a calibration certificate with accreditation symbol will also be sufficient.

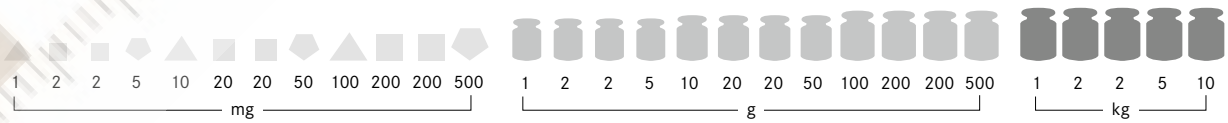
From finely turned to polished stainless steel – the right test weight for every situation





Test weight → / Features ↓	Knob shape with lifting knob, polished stainless steel	Compact shape with carrying grip, polished stainless steel	Knob shape with lifting knob, polished stainless steel	ECO shape, polished stainless steel	Knob shape with lifting knob, finely turned stainless steel
Conforms to OIML:R111	yes	yes	yes	yes	yes
Available classes	E1, E2	E2	F1	F1	F2, M1
Upper surface	polished	polished	polished	polished	finely turned
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Adjusting cavity	no	no	yes	yes, from 50 g, readjustment can only be carried out by KERN	yes, from 20 g
Marking (Milligram weights, generally none)	none	none	Nominal value, etched	Nominal value, etched	F2: Class + nominal value, etched; M1: Class + nominal value, adopted
Checking equipment for verification purposes	approved (E2)	approved	approved	approved	approved (M1)
Ideal as checking equipment in QM systems (e.g. ISO 9000 ff)	yes	yes	yes	yes	yes
Benefits	• High-quality test weight for analytical and precision balances • Highly-refined surface • Ideal shape of the top for good grip	• Affordable test weight for analytical and precision balances • Highly refined surface	• Ideal, high-quality test weight for precision balances • No visible adjustment chamber • High long-term stability • Ideal shape of the top for good grip	• Affordable test weight for analytical and precision balances • Highly refined surface • Optimum shape of the top for good grip	• Ideal test weight for commercial and industrial scales • Ideal shape of the top for good grip

Composition table, valid for all KERN test weight sets from 1 mg



Individual weights per set / Test weight set	
1 mg–500 mg	∑ = 1,11 g
1 mg–50 g	∑ = 111,11 g
1 mg–100 g	∑ = 211,11 g
1 mg–200 g	∑ = 611,11 g
1 mg–500 g	∑ = 1.111,11 g
1 mg–1 kg	∑ = 2.111,11 g
1 mg–2 kg	∑ = 6.111,11 g
1 mg–5 kg	∑ = 11.111,11 g
1 mg–10 kg	∑ = 21.111,11 g

The key points from the OIML norm R111:2004
OIML (Organisation Internationale de Métrologie Légale) has established the exact metrological requirements for weights in verified applications in approx. 100 states all over the world.

The OIML guideline R111 (2004 Edition) for weights relates to sizes 1 mg – 5000 kg. Statements are made on the accuracy, materials, geometric shape, marking and storage of the weights.

Error limits for weights of classes E1 to M3
The error limit classes are in fixed hierarchical levels in the proportion of 1:3, where E1 is the most accurate and M3 is the least accurate weight class. When testing weights with other weights, the correct test class is the next highest class.

Error limit classes (= tolerances)
The values given in the table below (tolerances ± ... mg) are the respective permitted fabrication tolerances.

They are to be equal to the
▸ ***measuring uncertainty*** of the weight, if no
▸ ***Calibration certificate with accreditation symbol*** is available.

Conventional mass
The problem is the air buoyancy, which makes the weight appear lighter. In order to avoid this "distortion" in daily use, all weights are adjusted to the unit specifications as given in R111, e.g. it is accepted that: material density of the weights is 8000 kg/m^3, air density is 1.2 kg/m^3 and measuring temperature is 20 °C.

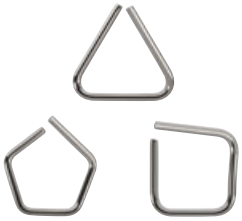
KERN test weights:
Unless otherwise specified, they conform to OIML R111:2004 in every detail.

▸ ***See the Glossary***

Nominal value — **OIML R111:2004 Maximum permissible errors for weights = permissible tolerances "Tol ± mg"**

↓	E1	E2	F1	F2	M1	M2	M3
1 mg	± 0,003 mg	± 0,006 mg	± 0,020 mg	± 0,06 mg	± 0,20 mg	-	-
2 mg	± 0,003 mg	± 0,006 mg	± 0,020 mg	± 0,06 mg	± 0,20 mg	-	-
5 mg	± 0,003 mg	± 0,006 mg	± 0,020 mg	± 0,06 mg	± 0,20 mg	-	-
10 mg	± 0,003 mg	± 0,008 mg	± 0,025 mg	± 0,08 mg	± 0,25 mg	-	-
20 mg	± 0,003 mg	± 0,010 mg	± 0,03 mg	± 0,10 mg	± 0,3 mg	-	-
50 mg	± 0,004 mg	± 0,012 mg	± 0,04 mg	± 0,12 mg	± 0,4 mg	-	-
100 mg	± 0,005 mg	± 0,016 mg	± 0,05 mg	± 0,16 mg	± 0,5 mg	± 1,6 mg	-
200 mg	± 0,006 mg	± 0,020 mg	± 0,06 mg	± 0,20 mg	± 0,6 mg	± 2,0 mg	-
500 mg	± 0,008 mg	± 0,025 mg	± 0,08 mg	± 0,25 mg	± 0,8 mg	± 2,5 mg	-
1 g	± 0,010 mg	± 0,03 mg	± 0,10 mg	± 0,3 mg	± 1,0 mg	± 3,0 mg	± 10 mg
2 g	± 0,012 mg	± 0,04 mg	± 0,12 mg	± 0,4 mg	± 1,2 mg	± 4,0 mg	± 12 mg
5 g	± 0,016 mg	± 0,05 mg	± 0,16 mg	± 0,5 mg	± 1,6 mg	± 5,0 mg	± 16 mg
10 g	± 0,020 mg	± 0,06 mg	± 0,20 mg	± 0,6 mg	± 2,0 mg	± 6,0 mg	± 20 mg
20 g	± 0,025 mg	± 0,08 mg	± 0,25 mg	± 0,8 mg	± 2,5 mg	± 8,0 mg	± 25 mg
50 g	± 0,03 mg	± 0,10 mg	± 0,3 mg	± 1,0 mg	± 3,0 mg	± 10 mg	± 30 mg
100 g	± 0,05 mg	± 0,16 mg	± 0,5 mg	± 1,6 mg	± 5,0 mg	± 16 mg	± 50 mg
200 g	± 0,10 mg	± 0,3 mg	± 1,0 mg	± 3,0 mg	± 10 mg	± 30 mg	± 100 mg
500 g	± 0,25 mg	± 0,8 mg	± 2,5 mg	± 8,0 mg	± 25 mg	± 80 mg	± 250 mg
1 kg	± 0,5 mg	± 1,6 mg	± 5,0 mg	± 16 mg	± 50 mg	± 160 mg	± 500 mg
2 kg	± 1,0 mg	± 3,0 mg	± 10 mg	± 30 mg	± 100 mg	± 300 mg	± 1 000 mg
5 kg	± 2,5 mg	± 8,0 mg	± 25 mg	± 80 mg	± 250 mg	± 800 mg	± 2 500 mg
10 kg	± 5,0 mg	± 16 mg	± 50 mg	± 160 mg	± 500 mg	± 1 600 mg	± 5 000 mg
20 kg	± 10 mg	± 30 mg	± 100 mg	± 300 mg	± 1 000 mg	± 3 000 mg	± 10 g
50 kg	± 25 mg	± 80 mg	± 250 mg	± 800 mg	± 2 500 mg	± 8 000 mg	± 25 g
100 kg	-	± 160 mg	± 500 mg	± 1 600 mg	± 5 000 mg	± 16 g	± 50 g
200 kg	-	± 300 mg	± 1 000 mg	± 3 000 mg	± 10 g	± 30 g	± 100 g
500 kg	-	± 800 mg	± 2 500 mg	± 8 000 mg	± 25 g	± 80 g	± 250 g
1 000 kg	-	± 1 600 mg	± 5 000 mg	± 16 g	± 50 g	± 160 g	± 500 g
2 000 kg	-	-	± 10 g	± 30 g	± 100 g	± 300 g	± 1 000 g
5 000 kg	-	-	± 25 g	± 80 g	± 250 g	± 800 g	± 2 500 g

TEST WEIGHTS AND BOXES CLASS E1



Milligram weights, wire shape

Individual weights, knob shape

Wooden box, for milligram weights

Plastic box, lined, for individual weights ≤ 50 g

Plastic box, lined, for individual weights ≥ 100 g

Wooden box, lined, for individual weights ≤ 500 g

Wooden box, lined, for individual weights ≥ 1 kg

Milligram weight set in plastic case (308-42)

Milligram weight set in aluminium protected case, lined (308-426)

Plastic case, lined, for weight sets, compact shape/knob shape

Aluminium protected case, lined, for weight sets, knob shape

Wooden case, lined, for weight sets, knob shape

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Class E1 · Milligram weights, wire shape

Test weight material: stainless steel

Weight	Tol +/- mg	Milligram weight, wire shape	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 mg	0,003	308-31	347-009-400	317-009-600	338-090-200	962-251
2 mg	0,003	308-32	347-009-400	317-009-600	338-090-200	962-252
5 mg	0,003	308-33	347-009-400	317-009-600	338-090-200	962-253
10 mg	0,003	308-34	347-009-400	317-009-600	338-090-200	962-254
20 mg	0,003	308-35	347-009-400	317-009-600	338-090-200	962-255
50 mg	0,004	308-36	347-009-400	317-009-600	338-090-200	962-256
100 mg	0,005	308-37	347-009-400	317-009-600	338-090-200	962-257
200 mg	0,006	308-38	347-009-400	317-009-600	338-090-200	962-258
500 mg	0,008	308-39	347-009-400	317-009-600	338-090-200	962-259

Class E1 · Individual weights, knob shape

Test weight material: stainless steel polished

Weight	Tol +/- mg	Individual weight, knob shape	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate Initial calibration*	DAkkS-accredited certificate Recalibration
		KERN	KERN	KERN	KERN	KERN	KERN
1 g	0,010	307-01	317-020-400	317-010-600	317-010-100	963-231	962-231 R
2 g	0,012	307-02	317-020-400	317-020-600	317-020-100	963-232	962-232 R
5 g	0,016	307-03	317-030-400	317-030-600	317-030-100	963-233	962-233 R
10 g	0,020	307-04	317-040-400	317-040-600	317-040-100	963-234	962-234 R
20 g	0,025	307-05	317-050-400	317-050-600	317-050-100	963-235	962-235 R
50 g	0,030	307-06	317-060-400	317-060-600	317-060-100	963-236	962-236 R
100 g	0,050	307-07	317-070-400	317-070-600	317-070-100	963-237	962-237 R
200 g	0,100	307-08	317-080-400	317-080-600	317-080-100	963-238	962-238 R
500 g	0,250	307-09	317-090-400	317-090-600	317-090-100	963-239	962-239 R
1 kg	0,500	307-11	317-110-400	317-110-600	317-110-100	963-241	962-241 R
2 kg	1,000	307-12	317-120-400	317-120-600	317-120-100	963-242	962-242 R
5 kg	2,500	307-13	317-130-400	317-130-600	317-130-100	963-243	962-243 R
10 kg	5,000	307-14	317-140-400	317-140-600	317-140-100	963-244	962-244 R
20 kg	10,000	307-15	-	317-150-600	317-150-100	963-245	962-245 R
50 kg	25,000	307-16	-	317-160-600	317-160-100	963-246	962-246 R

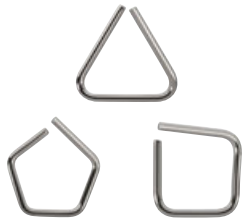
*** For E1 weights > 1g at the point of DAkkS-accredited initial calibration, a volume determination will be carried out in accordance with OIML:R111. When DAkkS-accredited recalibration, this is not required.**

Class E1 · Weight sets, knob shape

Test weight material: stainless steel polished

Weight set	Knob shape in plastic case	Knob shape in aluminium protected case	Knob shape in wooden case	DAkkS-accredited certificate Initial calibration*	DAkkS-accredited certificate Recalibration
	KERN	KERN	KERN	KERN	KERN
1 mg – 500 mg	308-42	308-426		962-250	962-250 R
1 mg – 50 g	303-024	303-026	303-02	963-201	962-201 R
1 mg – 100 g	303-034	303-036	303-03	963-202	962-202 R
1 mg – 200 g	303-044	303-046	303-04	963-203	962-203 R
1 mg – 500 g	303-054	303-056	303-05	963-204	962-204 R
1 mg – 1 kg	303-064	303-066	303-06	963-205	962-205 R
1 mg – 2 kg	303-074	303-076	303-07	963-206	962-206 R
1 mg – 5 kg	303-084	303-086	303-08	963-207	962-207 R
1 mg – 10 kg	-	303-096	303-09	963-208	962-208 R
1 g – 50 g	304-024	304-026	304-02	963-215	962-215 R
1 g – 100 g	304-034	304-036	304-03	963-216	962-216 R
1 g – 200 g	304-044	304-046	304-04	963-217	962-217 R
1 g – 500 g	304-054	304-056	304-05	963-218	962-218 R
1 g – 1 kg	304-064	304-066	304-06	963-219	962-219 R
1 g – 2 kg	304-074	304-076	304-07	963-220	962-220 R
1 g – 5 kg	304-084	304-086	304-08	963-221	962-221 R
1 g – 10 kg	-	304-096	304-09	963-222	962-222 R

TEST WEIGHTS AND BOXES CLASS E2



Milligram weights, wire shape

Milligram weights, flat polygonal sheet

Individual weights, compact shape

Individual weights, knob shape

Plastic box, lined, for individual weights ≤ 50 g

Plastic box, lined, for individual weights ≥ 100 g

Aluminium protected box, lined, for individual weights

Wooden box, lined, for individual weights ≤ 500 g

Wooden box, lined, for individual weights ≥1 kg

Milligram weight set in plastic case (318-22)

Milligram weight set in aluminium protected case, lined (318-226)

Plastic case, lined, for weight sets, compact shape/knob shape

Aluminium protected case, lined, for weight sets, compact shape/knob shape

Wooden case, lined, for weight sets, compact shape/knob shape

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Class E2 · Milligram weights, wire shape

Test weight material: stainless steel

Weight	Tol +/- mg	Milligram weight, flat polygonal sheet	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 mg	0,006	318-31	347-009-400	317-009-600	338-090-200	962-351
2 mg	0,006	318-32	347-009-400	317-009-600	338-090-200	962-352
5 mg	0,006	318-33	347-009-400	317-009-600	338-090-200	962-353
10 mg	0,008	318-34	347-009-400	317-009-600	338-090-200	962-354
20 mg	0,010	318-35	347-009-400	317-009-600	338-090-200	962-355
50 mg	0,012	318-36	347-009-400	317-009-600	338-090-200	962-356
100 mg	0,016	318-37	347-009-400	317-009-600	338-090-200	962-357
200 mg	0,020	318-38	347-009-400	317-009-600	338-090-200	962-358
500 mg	0,025	318-39	347-009-400	317-009-600	338-090-200	962-359
1 mg - 500 mg	-	318-42	-	-	-	-

Class E2 · Milligram weights, flat polygonal sheet

Test weight material: stainless steel

Weight	Tol +/- mg	Milligram weight, flat polygonal sheet	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 mg	0,006	318-01	347-009-400	317-009-600	338-090-200	962-351
2 mg	0,006	318-02	347-009-400	317-009-600	338-090-200	962-352
5 mg	0,006	318-03	347-009-400	317-009-600	338-090-200	962-353
10 mg	0,008	318-04	347-009-400	317-009-600	338-090-200	962-354
20 mg	0,010	318-05	347-009-400	317-009-600	338-090-200	962-355
50 mg	0,012	318-06	347-009-400	317-009-600	338-090-200	962-356
100 mg	0,016	318-07	347-009-400	317-009-600	338-090-200	962-357
200 mg	0,020	318-08	347-009-400	317-009-600	338-090-200	962-358
500 mg	0,025	318-09	347-009-400	317-009-600	338-090-200	962-359

Class E2 · Individual weights, compact shape or knob shape

Test weight material: stainless steel polished

Weight	Tol +/- mg	Individual weights, compact shape	Individual weights, knob shape	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN	KERN
1 g	0,03	316-01	317-01	317-020-400	317-010-600	317-010-100	962-331
2 g	0,04	316-02	317-02	317-020-400	317-020-600	317-020-100	962-332
5 g	0,05	316-03	317-03	317-030-400	317-030-600	317-030-100	962-333
10 g	0,06	316-04	317-04	317-040-400	317-040-600	317-040-100	962-334
20 g	0,08	316-05	317-05	317-050-400	317-050-600	317-050-100	962-335
50 g	0,10	316-06	317-06	317-060-400	317-060-600	317-060-100	962-336
100 g	0,16	316-07	317-07	317-070-400	317-070-600	317-070-100	962-337
200 g	0,30	316-08	317-08	317-080-400	317-080-600	317-080-100	962-338
500 g	0,80	316-09	317-09	317-090-400	317-090-600	317-090-100	962-339
1 kg	1,60	316-11	317-11	317-110-400	317-110-600	317-110-100	962-341
2 kg	3,00	316-12	317-12	317-120-400	317-120-600	317-120-100	962-342
5 kg	8,00	316-13	317-13	317-130-400	317-130-600	317-130-100	962-343
10 kg	16,00	316-14	317-14	317-140-400	317-140-600	317-140-100	962-344
20 kg	30,00	-	317-15	-	317-150-600	317-150-100	962-345
50 kg	80,00	-	317-16	-	317-160-600	317-160-100	962-346

Tip:
Our highly-accurate OIML test weights are also available as **PREMIUM+ weights** for that extra level of safety. See all details page 175 or on www.kern-lab.com/premium+

Class E2 · Weight sets, compact shape

Test weight material: Milligram weights stainless steel, individual weights: polished stainless steel

Weight sets	Compact shape in plastic case	Compact shape in aluminium protected case	DAkkS-accredited certificate
	KERN	KERN	KERN
1 mg - 500 mg	318-22	318-226	962-350
1 g - 50 g	312-024	312-026	962-315
1 g - 100 g	312-034	312-036	962-316
1 g - 200 g	312-044	312-046	962-317
1 g - 500 g	312-054	312-056	962-318
1 g - 1 kg	312-064	312-066	962-319
1 g - 2 kg	312-074	312-076	962-320
1 g - 5 kg	312-084	312-086	962-321
1 g -10 kg	-	312-096	962-322

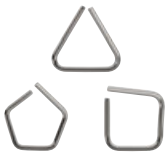
Class E2 · Weight sets, knob shape

Test weight material: Milligram weights stainless steel, individual weights: polished stainless steel

Weight sets	Knob shape in plastic case	Knob shape in aluminium protected case	Knob shape in wooden case	DAkkS-accredited certificate
	KERN	KERN	KERN	KERN
1 mg - 500 mg	318-22	318-226		962-350
1 mg - 50 g	313-024	313-026	313-02	962-301
1 mg - 100 g	313-034	313-036	313-03	962-302
1 mg - 200 g	313-044	313-046	313-04	962-303
1 mg - 500 g	313-054	313-056	313-05	962-304
1 mg - 1 kg	313-064	313-066	313-06	962-305
1 mg - 2 kg	313-074	313-076	313-07	962-306
1 mg - 5 kg	313-084	313-086	313-08	962-307
1 mg - 10 kg	-	313-096	313-09	962-308
1 g - 50 g	314-024	314-026	314-02	962-315
1 g - 100 g	314-034	314-036	314-03	962-316
1 g - 200 g	314-044	314-046	314-04	962-317
1 g - 500 g	314-054	314-056	314-05	962-318
1 g - 1 kg	314-064	314-066	314-06	962-319
1 g - 2 kg	314-074	314-076	314-07	962-320
1 g - 5 kg	314-084	314-086	314-08	962-321
1 g -10 kg	-	314-096	314-09	962-322

Tip:
Our highly-accurate OIML test weights are also available as **PREMIUM+ weights** for that extra level of safety. See all details page 175 or on www.kern-lab.com/premium+

TEST WEIGHTS AND BOXES CLASS F1

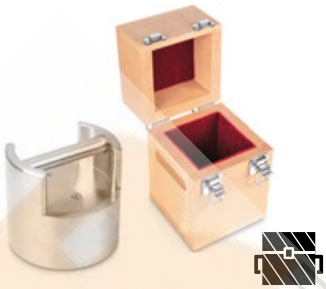


Milligram weights,
wire shape

Milligram weights,
flat polygonal sheet

Individual weights/
Weight sets,
ECO shape

Individual weights/
Weight sets,
knob shape



Test weights (10 – 50 kg),
polished stainless steel,
KERN 327-141 ff,
optional: Wooden box

Block weight,
polished stainless steel

Plastic box, lined, for
- individual weights ≤ 200 g
- individual weights ≥ 500 g

Aluminium protected box, lined,
for individual weights

Wooden box, lined, for
- individual weights ≤ 500 g
- individual weights ≥ 1 kg

Milligram weight
set in plastic case
(328-22)

Milligram weight
set in aluminium
protected case,
lined (328-226)

Plastic case, lined for weight sets,
ECO shape/knob shape

Aluminium protected case, lined,
for weight sets ECO shape/
knob shape

Wooden case, lined, for weight sets
ECO shape/knob shape

Class F1 · Milligram weights, wire shape

Test weight material: stainless steel

Weight	Tol +/- mg	Milligram weight, flat polygonal sheet	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 mg	0,02	328-31	347-009-400	317-009-600	338-090-200	962-451
2 mg	0,02	328-32	347-009-400	317-009-600	338-090-200	962-452
5 mg	0,02	328-33	347-009-400	317-009-600	338-090-200	962-453
10 mg	0,025	328-34	347-009-400	317-009-600	338-090-200	962-454
20 mg	0,03	328-35	347-009-400	317-009-600	338-090-200	962-455
50 mg	0,04	328-36	347-009-400	317-009-600	338-090-200	962-456
100 mg	0,05	328-37	347-009-400	317-009-600	338-090-200	962-457
200 mg	0,06	328-38	347-009-400	317-009-600	338-090-200	962-458
500 mg	0,08	328-39	347-009-400	317-009-600	338-090-200	962-459
1 mg - 500 mg	-	328-42	-	-	-	-

Class F1 · Milligram weights, flat polygonal sheet

Test weight material: stainless steel

Weight	Tol +/- mg	Milligram weight, flat polygonal sheet	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 mg	0,02	328-01	347-009-400	317-009-600	338-090-200	962-451
2 mg	0,02	328-02	347-009-400	317-009-600	338-090-200	962-452
5 mg	0,02	328-03	347-009-400	317-009-600	338-090-200	962-453
10 mg	0,025	328-04	347-009-400	317-009-600	338-090-200	962-454
20 mg	0,03	328-05	347-009-400	317-009-600	338-090-200	962-455
50 mg	0,04	328-06	347-009-400	317-009-600	338-090-200	962-456
100 mg	0,05	328-07	347-009-400	317-009-600	338-090-200	962-457
200 mg	0,06	328-08	347-009-400	317-009-600	338-090-200	962-458
500 mg	0,08	328-09	347-009-400	317-009-600	338-090-200	962-459

Class F1 · Individual weights, ECO shape or knob shape

Test weight material: stainless steel polished

Weight	Tol +/- mg	Individual weight, ECO shape	Individual weight, knob shape	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN	KERN
1 g	0,10	326-01	327-01	347-030-400	317-010-600	317-010-100	962-431
2 g	0,12	326-02	327-02	347-030-400	317-020-600	317-020-100	962-432
5 g	0,16	326-03	327-03	347-030-400	317-030-600	317-030-100	962-433
10 g	0,20	326-04	327-04	347-050-400	317-040-600	317-040-100	962-434
20 g	0,25	326-05	327-05	347-050-400	317-050-600	317-050-100	962-435
50 g	0,30	326-06	327-06	347-070-400	317-060-600	317-060-100	962-436
100 g	0,50	326-07	327-07	347-070-400	317-070-600	317-070-100	962-437
200 g	1,00	326-08	327-08	347-080-400	317-080-600	317-080-100	962-438
500 g	2,50	326-09	327-09	347-090-400	317-090-600	317-090-100	962-439
1 kg	5,00	326-11	327-11	347-110-400	317-110-600	317-110-100	962-441
2 kg	10	326-12	327-12	347-120-400	317-120-600	317-120-100	962-442
5 kg	25	326-13	327-13	347-130-400	317-130-600	317-130-100	962-443
10 kg	50	326-14	327-14	347-140-400	317-140-600	317-140-100	962-444
20 kg	100	–	327-15	–	317-150-600	317-150-100	962-445
50 kg	250	–	327-16	–	317-160-600	317-160-100	962-446

Class F1 · Block weights

Block weight material: stainless steel polished

Weight	Tol +/- mg	Block weight	Aluminium protected box	DAkkS-accredited certificate
		KERN	KERN	KERN
5 kg	25	326-36	346-060-600	962-443
10 kg	50	326-37	346-070-600	962-444
20 kg	100	326-38	346-080-600	962-445
50 kg	250	326-39	346-090-600	962-446

Class F1 · Test weights, stackable

Test weight material: stainless steel polished

Weight	Tol +/- mg	Test weight	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN
5 kg	25	327-131	337-131-100	962-443
10 kg	50	327-141	337-141-100	962-444
20 kg	100	327-151	337-151-100	962-445
50 kg	250	327-161	337-161-100	962-446

Class F1 · Weight sets, ECO shape

Test weight material: Milligram weights stainless steel, Individual weights: polished stainless steel

Weight sets	ECO shape in plastic case	ECO shape in aluminium protected case	ECO shape in wooden case	DAkkS-accredited certificate
	KERN	KERN	KERN	KERN
1 mg - 500 mg	328-22	328-226	-	962-450
1 mg - 50 g	325-024	325-026	325-022	962-401
1 mg - 100 g	325-034	325-036	325-032	962-402
1 mg - 200 g	325-044	325-046	325-042	962-403
1 mg - 500 g	325-054	325-056	325-052	962-404
1 mg - 1 kg	325-064	325-066	325-062	962-405
1 mg - 2 kg	325-074	325-076	325-072	962-406
1 mg - 5 kg	325-084	325-086	325-082	962-407
1 mg - 10 kg	-	325-096	325-092	962-408
1 g - 50 g	326-024	326-026	326-022	962-415
1 g - 100 g	326-034	326-036	326-032	962-416
1 g - 200 g	326-044	326-046	326-042	962-417
1 g - 500 g	326-054	326-056	326-052	962-418
1 g - 1 kg	326-064	326-066	326-062	962-419
1 g - 2 kg	326-074	326-076	326-072	962-420
1 g - 5 kg	326-084	326-086	326-082	962-421
1 g - 10 kg	-	326-096	326-092	962-422

Class F1 · Weight sets, knob shape

Test weight material: Milligram weights stainless steel, Individual weights: polished stainless steel

Weight sets	Knob shape in plastic case	Knob shape in aluminium protected case	Knob shape in wooden case	DAkkS-accredited certificate
	KERN	KERN	KERN	KERN
1 mg - 500 mg	328-22	328-226	-	962-450
1 mg - 50 g	323-024	323-026	323-02	962-401
1 mg - 100 g	323-034	323-036	323-03	962-402
1 mg - 200 g	323-044	323-046	323-04	962-403
1 mg - 500 g	323-054	323-056	323-05	962-404
1 mg - 1 kg	323-064	323-066	323-06	962-405
1 mg - 2 kg	323-074	323-076	323-07	962-406
1 mg - 5 kg	323-084	323-086	323-08	962-407
1 mg - 10 kg	-	323-096	323-09	962-408
1 g - 50 g	324-024	324-026	324-02	962-415
1 g - 100 g	324-034	324-036	324-03	962-416
1 g - 200 g	324-044	324-046	324-04	962-417
1 g - 500 g	324-054	324-056	324-05	962-418
1 g - 1 kg	324-064	324-066	324-06	962-419
1 g - 2 kg	324-074	324-076	324-07	962-420
1 g - 5 kg	324-084	324-086	324-08	962-421
1 g - 10 kg	-	324-096	324-09	962-422

TEST WEIGHTS AND BOXES CLASS F2

Milligram weights,
flat polygonal sheet

Individual weights/Weight sets,
knob shape

Block weight, stainless steel

Test weights (10 – 50 kg),
finely turned stainless steel,
KERN 337-141 ff,
optional: Wooden box

Plastic box,
lined, for
individual
weights
≤ 200 g

Plastic box,
lined, for
individual
weights
≥ 500 g

Aluminium protected box, lined,
for individual weights

Wooden box, not lined
for individual weights ≤ 500 g

Wooden box, not lined,
for individual weights ≥1 kg

Milligram weight
set in plastic case
(338-22)

Milligram weight
set in aluminium
protected case,
lined (338-226)

Plastic case, lined, for weight sets,
knob shape

Aluminium protected case, lined,
for weight sets, knob shape

Wooden case, for weight sets,
knob shape

Class F2 · Milligram weights, flat polygonal sheet

Test weight material: stainless steel

Weight	Tol +/- mg	Milligram weight, flat polygonal sheet	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 mg	0,06	338-01	347-009-400	317-009-600	338-090-200	962-451
2 mg	0,06	338-02	347-009-400	317-009-600	338-090-200	962-452
5 mg	0,06	338-03	347-009-400	317-009-600	338-090-200	962-453
10 mg	0,08	338-04	347-009-400	317-009-600	338-090-200	962-454
20 mg	0,10	338-05	347-009-400	317-009-600	338-090-200	962-455
50 mg	0,12	338-06	347-009-400	317-009-600	338-090-200	962-456
100 mg	0,16	338-07	347-009-400	317-009-600	338-090-200	962-457
200 mg	0,20	338-08	347-009-400	317-009-600	338-090-200	962-458
500 mg	0,25	338-09	347-009-400	317-009-600	338-090-200	962-459

Class F2 · Individual weights, knob shape

Test weight material: finely turned stainless steel

Weight	Tol +/- mg	Individual weight, knob shape	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 g	0,3	337-01	347-030-400	317-010-600	337-010-200	962-431
2 g	0,4	337-02	347-030-400	317-020-600	337-020-200	962-432
5 g	0,5	337-03	347-030-400	317-030-600	337-030-200	962-433
10 g	0,6	337-04	347-050-400	317-040-600	337-040-200	962-434
20 g	0,8	337-05	347-050-400	317-050-600	337-050-200	962-435
50 g	1,0	337-06	347-070-400	317-060-600	337-060-200	962-436
100 g	1,6	337-07	347-070-400	317-070-600	337-070-200	962-437
200 g	3,0	337-08	347-080-400	317-080-600	337-080-200	962-438
500 g	8,0	337-09	347-090-400	317-090-600	337-090-200	962-439
1 kg	16	337-11	347-110-400	317-110-600	337-110-200	962-441
2 kg	30	337-12	347-120-400	317-120-600	337-120-200	962-442
5 kg	80	337-13	347-130-400	317-130-600	337-130-200	962-443
10 kg	160	337-14	347-140-400	317-140-600	337-140-200	962-444
20 kg	300	337-15	-	317-150-600	337-150-200	962-445
50 kg	800	337-16	-	317-160-600	337-160-200	962-446

Class F2 · Test weights, stackable

Test weight material: finely turned stainless steel

Weight	Tol +/- mg	Test weight	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN
5 kg	80	337-131	337-131-200	962-443
10 kg	160	337-141	337-141-200	962-444
20 kg	300	337-151	337-151-200	962-445
50 kg	800	337-161	337-161-200	962-446

Class F2 · Block weights

Block weight material: stainless steel glass bead blasted

Weight	Tol +/- mg	Block weight	Aluminium protected box	DAkkS-accredited certificate
		KERN	KERN	KERN
5 kg	80	336-36	346-060-600	962-443
10 kg	160	336-37	346-070-600	962-444
20 kg	300	336-38	346-080-600	962-445
50 kg	800	336-39	346-090-600	962-446

Class F2 · Weight sets, knob shape

Test weight material: Milligram weights stainless steel, individual weights finely turned stainless steel

Weight	Knob shape in plastic case	Knob shape in aluminium protected case	Knob shape in wooden case	DAkkS-accredited certificate
	KERN	KERN	KERN	KERN
1 mg - 500 mg	328-22	328-226	-	962-450
1 mg - 50 g	333-024	333-026	333-02	962-401
1 mg - 100 g	333-034	333-036	333-03	962-402
1 mg - 200 g	333-044	333-046	333-04	962-403
1 mg - 500 g	333-054	333-056	333-05	962-404
1 mg - 1 kg	333-064	333-066	333-06	962-405
1 mg - 2 kg	333-074	333-076	333-07	962-406
1 mg - 5 kg	333-084	333-086	333-08	962-407
1 mg - 10 kg	-	333-096	333-09	962-408
1 g - 50 g	334-024	334-026	334-02	962-415
1 g - 100 g	334-034	334-036	334-03	962-416
1 g - 200 g	334-044	334-046	334-04	962-417
1 g - 500 g	334-054	334-056	334-05	962-418
1 g - 1 kg	334-064	334-066	334-06	962-419
1 g - 2 kg	334-074	334-076	334-07	962-420
1 g - 5 kg	334-084	334-086	334-08	962-421
1 g -10 kg	-	334-096	334-09	962-422

TEST WEIGHTS AND BOXES CLASS M1

Milligram weights,
flat polygonal sheet

Individual weights/weight sets,
knob shape, finely turned
stainless steel

Hook weights, finely turned
stainless steel

Slotted weights, finely turned
stainless steel

Plastic box, for individual
weights ≤ 200 g, for hook
weights and slotted weights
≤ 50 g

Plastic box, lined, for
individual weights ≥ 500 g,
for hook weights and
slotted weights ≥ 100 g

Aluminium protected box,
lined, for individual weights

Wooden box, not lined,
for individual weights
≤ 500 g

Wooden box, not lined,
for individual weights ≥1 kg

Milligram weight
set in plastic case
(348-22)

Milligram weight
set in aluminium
protected case,
lined (348-226)

Plastic case, lined, for weight sets,
knob shape, finely turned
stainless steel

Aluminium protected case, lined,
for weight sets, knob shape,
finely turned stainless steel

Wooden case, for weight sets,
knob shape, finely turned
stainless steel

Test weights (10 – 50 kg), finely turned
stainless steel KERN 347-141 ff,
optional: Wooden box

Beam bars, aluminium or
stainless steel

Block weights, lacquered cast iron/stainless steel glass bead blasted,
optional: Aluminium protected box, lined

Class M1 · Milligram weights, flat polygonal sheet

Test weight material: stainless steel

Weight	Tol +/- mg	Milligram weight, flat polygonal sheet	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 mg	0,20	348-01	347-009-400	317-009-600	338-090-200	962-651
2 mg	0,20	348-02	347-009-400	317-009-600	338-090-200	962-652
5 mg	0,20	348-03	347-009-400	317-009-600	338-090-200	962-653
10 mg	0,25	348-04	347-009-400	317-009-600	338-090-200	962-654
20 mg	0,30	348-05	347-009-400	317-009-600	338-090-200	962-655
50 mg	0,40	348-06	347-009-400	317-009-600	338-090-200	962-656
100 mg	0,50	348-07	347-009-400	317-009-600	338-090-200	962-657
200 mg	0,60	348-08	347-009-400	317-009-600	338-090-200	962-658
500 mg	0,80	348-09	347-009-400	317-009-600	338-090-200	962-659

Class M1 · Individual weights, knob shape

Test weights material: stainless steel

Weight	Tol +/- mg	Individual weight	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 g	1,0	347-01	347-030-400	317-010-600	337-010-200	962-631
2 g	1,2	347-02	347-030-400	317-020-600	337-020-200	962-632
5 g	1,6	347-03	347-030-400	317-030-600	337-030-200	962-633
10 g	2,0	347-04	347-050-400	317-040-600	337-040-200	962-634
20 g	2,5	347-05	347-050-400	317-050-600	337-050-200	962-635
50 g	3,0	347-06	347-070-400	317-060-600	337-060-200	962-636
100 g	5,0	347-07	347-070-400	317-070-600	337-070-200	962-637
200 g	10	347-08	347-080-400	317-080-600	337-080-200	962-638
500 g	25	347-09	347-090-400	317-090-600	337-090-200	962-639
1 kg	50	347-11	347-110-400	317-110-600	337-110-200	962-641
2 kg	100	347-12	347-120-400	317-120-600	337-120-200	962-642
5 kg	250	347-13	347-130-400	317-130-600	337-130-200	962-643
10 kg	500	347-14	347-140-400	317-140-600	337-140-200	962-644

Class M1 · Block weights

Block weight material: lacquered cast iron, surface and edges machined or unmachined (ECO)

Weight	Tol +/- g	Block weight	ECO Block weight	Aluminium protected box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN
5 kg	0,25	346-86	346-76	346-060-600	962-643
10 kg	0,50	346-87	346-77	346-070-600	962-644
20 kg	1,00	346-88	346-78	346-080-600	962-645
50 kg	2,50	346-89	346-79	346-090-600	962-646

Class M1 · Block weights

Block weight material: stainless steel glass bead blasted

Weight	Tol +/- g	Block weight	Aluminium protected box	DAkkS-accredited certificate
		KERN	KERN	KERN
5 kg	0,25	346-06	346-060-600	962-643
10 kg	0,50	346-07	346-070-600	962-644
20 kg	1,00	346-08	346-080-600	962-645
50 kg	2,50	346-09	346-090-600	962-646

Class M1 · Test weights, stackable

Test weight material: finely turned stainless steel

Weight	Tol +/- g	Test weight	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN
5 kg	0,25	347-131	337-131-200	962-643
10 kg	0,5	347-141	337-141-200	962-644
20 kg	1,0	347-151	337-151-200	962-645
50 kg	2,5	347-161	337-161-200	962-646

Class M1 · Heavy duty weights, stackable

Heavy duty weight material: lacquered steel
Designed to be lifted with forklift trucks or cranes, delivery time is approx. 6–8 weeks
Dimensions: see internet

Weight	Tol +/- g	Heavy duty weight	DAkkS-accredited certificate
		KERN	KERN
100 kg	5	346-81	962-691
200 kg	10	346-82	962-692
500 kg	25	346-83	962-693
1000 kg	50	346-84	962-694
2000 kg	100	346-85	962-695

Class M1 · Weight sets, knob shape

Test weight material: Milligram weights stainless steel, individual weights finely turned stainless steel

Weight	Knob shape, in plastic case	Knob shape, in aluminium protected case	Knob shape, in wooden case	DAkkS-accredited certificate
	KERN	KERN	KERN	KERN
1 mg - 500 mg	348-22	348-226	-	962-650
1 mg – 50 g	343-024	343-026	343-02	962-601
1 mg – 100 g	343-034	343-036	343-03	962-602
1 mg – 200 g	343-044	343-046	343-04	962-603
1 mg – 500 g	343-054	343-056	343-05	962-604
1 mg – 1 kg	343-064	343-066	343-06	962-605
1 mg – 2 kg	343-074	343-076	343-07	962-606
1 mg – 5 kg	343-084	343-086	343-08	962-607
1 mg – 10 kg	-	343-096	343-09	962-608
1 g – 50 g	344-024	344-026	344-02	962-615
1 g – 100 g	344-034	344-036	344-03	962-616
1 g – 200 g	344-044	344-046	344-04	962-617
1 g – 500 g	344-054	344-056	344-05	962-618
1 g – 1 kg	344-064	344-066	344-06	962-619
1 g – 2 kg	344-074	344-076	344-07	962-620
1 g – 5 kg	344-084	344-086	344-08	962-621
1 g – 10 kg	-	344-096	344-09	962-622

Tip:
We also offer a large range of heavy-duty weights in other materials, (e.g. stainless steel) and in other forms (e.g. discs) or individual weight containers, please ask for details.

Class M1 · Slotted weights

Slotted weight material: finely turned stainless steel

Weight	Tol +/- mg	Slotted weight	Plastic box, lined	DAkkS-accredited certificate
		KERN	KERN	KERN
1 g	1,0	347-015	347-030-400	962-631
2 g	1,2	347-025	347-030-400	962-632
5 g	1,6	347-035	347-030-400	962-633
10 g	2,0	347-045	347-030-400	962-634
20 g	2,5	347-055	347-080-400	962-635
50 g	3,0	347-065	347-080-400	962-636
100 g	5,0	347-075	347-090-400	962-637
200 g	10	347-085	347-090-400	962-638
500 g	25	347-095	347-110-400	962-639
1 kg	50	347-115	347-130-400	962-641
2 kg	100	347-125	347-130-400	962-642
5 kg	250	347-135	347-140-400	962-643
10 kg	500	347-145	347-140-400	962-644

Class M1 · Beam bars, for fixing slotted weights

Beam bars material: 10 g: aluminium, 100 g–1 kg: finely turned stainless steel

Own weight beam bar	Maximum total load [1]	Largest slotted weight possible	Material	Length	Beam bar	DAkkS-accredited certificate
					KERN	KERN
10 g	200 g	100 g	Aluminium	117,5	347-445-100*	962-634
100 g	2 kg	1 kg	Stainless steel	238	347-075-100**	962-637
500 g	20 kg	10 kg	Stainless steel	639	347-095-100***	962-639
1 kg	40 kg	10 kg	Stainless steel	1020	347-115-100***	962-641

[1] is exclusive of the own weight of the beam bar, e.g. the maximum possible total weight is calculated from "Maximum total load" + "own weight beam bar"

Class M1 · Slotted weights

Slotted weight material: finely turned stainless steel (only compatible with the 347-...7-100 series supporting bars)

Weight	Tol +/- mg	Slotted weight	DAkkS-accredited certificate
		KERN	KERN
5 g	1,6	347-037	962-633
10 g	2,0	347-047	962-634
20 g	2,5	347-057	962-635
50 g	3,0	347-067	962-636
100 g	5,0	347-077	962-637
200 g	10	347-087	962-638
500 g	25	347-097	962-639
1 kg	50	347-117	962-641
2 kg	100	347-127	962-642
5 kg	250	347-137	962-643
10 kg	500	347-147	962-644

Class M1 · Beam bars, for fixing slotted weights

Beam bars material: 10 g: aluminium, 100 g–1 kg: finely turned stainless steel (only compatible with the 347-...7 series slotted weights)

Own weight beam bar	Maximum total load [1]	Largest slotted weight possible	Material	Length	Tol +/- mg	Beam bar	DAkkS-accredited certificate
						KERN	KERN
1 kg	46 kg	10 kg	Stainless steel	300 mm	50	347-117-100	962-641
5 kg	95 kg	10 kg	Stainless steel	600 mm	250	347-137-100	962-643
10 kg	126 kg	10 kg	Stainless steel	800 mm	500	347-147-100	962-644

[1] is exclusive of the own weight of the beam bar, e.g. the maximum possible total weight is calculated from "Maximum total load" + "own weight beam bar"

Class M1 · Hook weights

Hook weight material: finely turned stainless steel

Weight	Tol +/- mg	Hook weight	Plastic box, linned	DAkkS-accredited certificate
		KERN	KERN	KERN
1 g	1,0	347-016	347-030-400	962-631
2 g	1,2	347-026	347-030-400	962-632
5 g	1,6	347-036	347-030-400	962-633
10 g	2,0	347-046	347-050-400	962-634
20 g	2,5	347-056	347-050-400	962-635
50 g	3,0	347-066	347-070-400	962-636
100 g	5,0	347-076	347-090-400	962-637
200 g	10,0	347-086	347-090-400	962-638
500 g	25,0	347-096	347-110-400	962-639
1 kg	50,0	347-116	347-120-400	962-641
2 kg	100,0	347-126	347-130-400	962-642
5 kg	250,0	347-136	347-140-400	962-643
10 kg	500,0	347-146	–	962-644

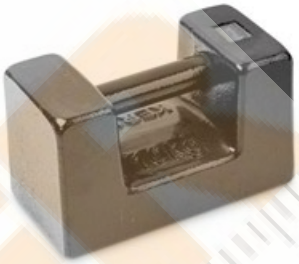
Newton weights (N):

All hook and slotted weights as well as beam bars are available **with N adjustment according to M1 tolerances**
We need to know the exact location of use of the newton weights (street, postcode, city and country).
Calibration certificates with accreditation symbol for N weights: identical to DAkkS prices for individual weights **M1**

TEST WEIGHTS AND BOXES CLASSES M2 · M3

Individual weights/Weight sets,
knob shape, stainless steel

Individual weights/Weight sets,
knob shape, lacquered cast iron



Block weights,
lacquered cast iron

Plastic box, lined,
for individual weights

Aluminium protected box,
lined, for individual weights

Wooden box, not lined, for
individual weights ≤ 500 g,
! not appropriate for
cast iron weights

Wooden box, not lined, for
individual weights ≥1 kg,
! not appropriate for
cast iron weights

Aluminium protected case,
lined, for block weights

Aluminium protected case, lined, for weight
sets knob shape, finely turned stainless steel,
! not appropriate for cast iron weights

Wooden case, for weight sets, knob shape,
finely turned stainless steel

Wooden block, for weight sets,
knob shape, lacquered cast iron

Class M2 · Individual weights, knob shape

Test weight material: finely turned stainless steel

Weight	Tol +/- mg	Individual weight, knob shape	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 g	3	357-01	347-030-400	317-010-600	337-010-200	962-631
2 g	4	357-02	347-030-400	317-020-600	337-020-200	962-632
5 g	5	357-03	347-030-400	317-030-600	337-030-200	962-633
10 g	6	357-04	347-050-400	317-040-600	337-040-200	962-634
20 g	8	357-05	347-050-400	317-050-600	337-050-200	962-635
50 g	10	357-06	347-070-400	317-060-600	337-060-200	962-636
100 g	16	357-07	347-070-400	317-070-600	337-070-200	962-637
200 g	30	357-08	347-080-400	317-080-600	337-080-200	962-638
500 g	80	357-09	347-090-400	317-090-600	337-090-200	962-639
1 kg	160	357-11	347-110-400	317-110-600	337-110-200	962-641
2 kg	300	357-12	347-120-400	317-120-600	337-120-200	962-642
5 kg	800	357-13	347-130-400	317-130-600	337-130-200	962-643
10 kg	1600	357-14	347-140-400	317-140-600	337-140-200	962-644

Class M2 · Block weights

Block weight material: lacquered cast iron, surface and edges machined or unmachined (ECO)

Weight	Tol +/- g	Block weight	ECO block weight	Aluminium protected box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN
5 kg	0,8	356-86	356-76	346-060-600	962-643
10 kg	1,6	356-87	356-77	346-070-600	962-644
20 kg	3,0	356-88	356-78	346-080-600	962-645
50 kg	8,0	356-89	356-79	346-090-600	962-646

Class M2 · Weight sets, knob shape

Test weight material: finely turned stainless steel

Weight	Knob shape, in aluminium protected case	Knob shape, in wooden case	DAkkS-accredited certificate
	KERN	KERN	KERN
1 g – 50 g	354-026	354-02	962-615
1 g – 100 g	354-036	354-03	962-616
1 g – 200 g	354-046	354-04	962-617
1 g – 500 g	354-056	354-05	962-618
1 g – 1 kg	354-066	354-06	962-619
1 g – 2 kg	354-076	354-07	962-620
1 g – 5 kg	354-086	354-08	962-621
1 g – 10 kg	354-096	354-09	962-622

Class M3 · Individual weights, knob shape

Test weight material: finely turned stainless steel

Weight	Tol +/- mg	Individual weight, knob shape	Plastic box	Aluminium protected box	Wooden box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN	KERN
1 g	10	367-01	347-030-400	317-010-600	337-010-200	962-631
2 g	12	367-02	347-030-400	317-020-600	337-020-200	962-632
5 g	16	367-03	347-030-400	317-030-600	337-030-200	962-633
10 g	20	367-04	347-050-400	317-040-600	337-040-200	962-634
20 g	25	367-05	347-050-400	317-050-600	337-050-200	962-635
50 g	30	367-06	347-070-400	317-060-600	337-060-200	962-636
100 g	50	367-07	347-070-400	317-070-600	337-070-200	962-637
200 g	100	367-08	347-080-400	317-080-600	337-080-200	962-638
500 g	250	367-09	347-090-400	317-090-600	337-090-200	962-639
1 kg	500	367-11	347-110-400	317-110-600	337-110-200	962-641
2 kg	1000	367-12	347-120-400	317-120-600	337-120-200	962-642

Class M3 · Individual weights, knob and cylindrical shape

Test weight material: lacquered cast iron

Weight	Tol +/- g	Individual weight, knob and cylindrical shape	DAkkS-accredited certificate
		KERN	KERN
100 g*	0,05	366-91	962-637
200 g*	0,10	366-92	962-638
500 g**	0,25	366-93	962-639
1 kg**	0,50	366-94	962-641
2 kg**	1,0	366-95	962-642
5 kg**	2,5	366-96	962-643
10 kg**	5,0	366-97	962-644

Class M3 · Block weights

Block weight material: lacquered cast iron, surface and edges machined or unmachined (ECO)

Weight	Tol +/- g	Block weight	ECO block weight	Aluminium protected box	DAkkS-accredited certificate
		KERN	KERN	KERN	KERN
5 kg	2,5	366-86	366-76	346-060-600	962-643
10 kg	5,0	366-87	366-77	346-070-600	962-644
20 kg	10	366-88	366-78	346-080-600	962-645
50 kg	25	366-89	366-79	346-090-600	962-646

Class M3 · Weight sets, knob and cylindrical shape

Test weight material: ≤ 50 g stainless steel, ≥ 100 g lacquered cast iron

Weight	Knob and cylindrical shape, in wooden block	DAkkS-accredited certificate
	KERN	KERN
1 g – 1 kg	362-96	962-619
1 g – 2 kg	362-97	962-620
1 g – 5 kg	362-98	962-621
1 g – 10 kg	362-99	962-622

Weight set
1 g – 10 kg

Tweezers, weight grips, gloves, dusting brush

Tweezers
to be able to safely grip small test weights

For class	For weight	Length	Version	KERN
E1 - M3	1 mg – 200 g	105 mm	1 Stainless steel with silicone-coated tips	315-243
E1 - M3	500 g – 2 kg	250 mm	1 Stainless steel with silicone-coated tips	315-245
E1 - M3	≤ 5 g	130 mm	2 Stainless steel, curved, high-quality plastic tips	315-246*
E1 - M3	≤ 5 g	136 mm	3 Stainless steel, straight, high quality plastic tips	315-247
E1 - M3	≤ 200 g	225 mm	4 Stainless steel, straight, high-quality plastic tips, with a special shape for gripping weights of various shapes and sizes	315-248*
F2 – M3	1 mg – 200 g	100 mm	5 Stainless steel	335-240*
E1 – M3	1 mg – 200 g	100 mm	6 Plastic	315-242

! * ONLY WHILE STOCKS LAST

Weight grip
plastic coated

For class	For knob shaped weights	KERN
E1 - M3	2 kg	315-273
E1 - M3	5 kg	315-274
E1 - M3	10 kg	315-275
E1 - M3	20 kg	315-276

! not appropriate for cast iron weights

Gloves
Cotton, 1 pair. Help to protect the test weights when being used daily, from grease from fingers, damp etc.
Suitable for test weights up to 2 kg.

KERN
317-280

Gloves
Leather/cotton, 1 pair. Help to protect the test weights when being used daily, from grease from fingers, damp etc.
Ideal for test weights from 2 kg.

KERN
317-290

Premium gloves
Nylon, 1 pair.
Particularly elastic, one size fits all, with special fingertip coating to ensure a safe grip. Helps to protect the test weights in everyday use from grease from fingers, damp etc.
Ideal for all test weights.

KERN
317-281

Dusting brush
to clean the weights

KERN
318-270

Bellows
for cleaning weights

KERN
318-271

Microfibre cloth
for cleaning weights

KERN
318-272

Boxes for individual weights

For weights ≤ 200 g, OIML class E1 - E2:
Box with lid

Box material: Plastic, lined, suitable for single weights, KERN No. 307, 316, 317, 327, 337, 347

Plastic box, lined
for single weights E1 – E2

For weights		KERN
1 - 500 mg	(single)	347-009-400
1 – 2 g	(single)	317-020-400
5 g		317-030-400
10 g		317-040-400
20 g		317-050-400
50 g		317-060-400
100 g		317-070-400
200 g		317-080-400
500 g		317-090-400
1 kg		317-110-400
2 kg		317-120-400
5 kg		317-130-400
10 kg		317-140-400

For weights ≥ 500 g, OIML class E1 - M3:
Box with screw cap

Box material: Plastic, not lined, suitable for single weights, KERN No. 307, 316, 317, 327, 337, 347

Plastic box, not lined
for single weights E1 – M3

For weights		KERN
1 - 500 mg	(single)	347-009-400
1 g - 5 g	(single)	347-030-400
10 g - 20 g	(single)	347-050-400
50 g - 100 g	(single)	347-070-400
200 g		347-080-400
500 g		347-090-400
1 kg		347-110-400
2 kg		347-120-400
5 kg		347-130-400
10 kg		347-140-400

For weights ≤ 500 g, OIML class E1 – F1 | For weights ≥ 1 kg, OIML class E1 – F1

Box material: Wood, lined, suitable for single weights, KERN No. 307, 316, 317, 326, 327

Wooden box, lined
for single weights E1 – F1

For weights	KERN
-	-
1 g	317-010-100
2 g	317-020-100
5 g	317-030-100
10 g	317-040-100
20 g	317-050-100
50 g	317-060-100
100 g	317-070-100
200 g	317-080-100
500 g	317-090-100
1 kg	317-110-100
2 kg	317-120-100
5 kg	317-130-100
10 kg	317-140-100
20 kg	317-150-100
50 kg	317-160-100

For weights ≤ 500 g, OIML class F2 – M3 | For weights ≥ 1 kg, OIML class F2 – M3

Box material: Wood, not lined, suitable for single weights, KERN No. 337, 347, 357, 367
! not suitable for cast iron weights

Wooden box, not lined
for single weights F2 – M3

For weights		KERN
1 - 500 mg	(single)	338-090-200
1 g		337-010-200
2 g		337-020-200
5 g		337-030-200
10 g		337-040-200
20 g		337-050-200
50 g		337-060-200
100 g		337-070-200
200 g		337-080-200
500 g		337-090-200
1 kg		337-110-200
2 kg		337-120-200
5 kg		337-130-200
10 kg		337-140-200
20 kg		337-150-200
50 kg		337-160-200

For test weights ≥ 10 kg, OIML class F1 – M1

Box material: Wood, lined/not lined, suitable for single weights, KERN No. 327, 337, 347
! not suitable for cast iron weights

Wooden box, not lined
for test weights F1 – M1

For weights	KERN
5 kg	337-131-200
10 kg	337-141-200
20 kg	337-151-200
50 kg	337-161-200

Wooden box, lined
for test weights F1

For weights	KERN
5 kg	337-131-100
10 kg	337-141-100
20 kg	337-151-100
50 kg	337-161-100

Boxes for individual weights

For weights ≤ 5 kg, OIML class E1 – M3

Box material: Aluminium protected, lined, suitable for mg and single weights, KERN No. 307, 308, 316, 317, 318, 326, 327, 328, 337, 338, 347, 348, 357, 367
! not suitable for cast iron weights

Aluminium protected box, lined
for individual weights, knob and compact shape, class E1 – M3

For weights	KERN
1 - 500 mg (single)	317-009-600
1 g	317-010-600
2 g	317-020-600
5 g	317-030-600
10 g	317-040-600
20 g	317-050-600
50 g	317-060-600
100 g	317-070-600
200 g	317-080-600
500 g	317-090-600
1 kg	317-110-600
2 kg	317-120-600
5 kg	317-130-600

For weights ≤ 10 kg, OIML class E1 – M3

Box material: Aluminium protected, lined, suitable for single weights, KERN No. 307, 316, 317, 326, 327, 337, 347, 357, 367
! not suitable for cast iron weights

Aluminium protected box, lined
for individual weights, knob and compact shape, class E1 – M3

For weights	KERN
10 kg	317-140-600
20 kg	317-150-600
50 kg	317-160-600

For block weight ≥ 5 kg, OIML class F1 – M3

Box material: Aluminium protected, lined, suitable for block weights, KERN No. 326, 336, 346, 356, 366

Aluminium protected box, lined
for individual weights F1 – M3

For weights	KERN
5 kg	346-060-600
10 kg	346-070-600
20 kg	346-080-600
50 kg	346-090-600

Clean room boxes

For weights ≤ 500 g, OIML class E1 - M1
For weights 1 g – 2 kg, OIML class E1 - M1

Box material: POM (Polyoxymethylen), not lined, suitable for single weights, KERN No. 307, 316, 317, 327, 337, 347

Polyoxymethylene boxes POM, unlined
for single weights E1 – M1

For weights	KERN
1 - 500 mg (single)	317-009-700
1 g	317-010-700
2 g	317-020-700
5 g	317-030-700
10 g	317-040-700
20 g	317-050-700
50 g	317-060-700
100 g	317-070-700
200 g	317-080-700
500 g	317-090-700
1 kg	317-110-700
2 kg	317-120-700

For weights 10 kg - 20 kg, OIML class E1 - M1
*Box with handle

Box material: POM (Polyoxymethylen), not lined, suitable for single weights, KERN No. 307, 316, 317, 327, 337, 347

Polyoxymethylene boxes POM, unlined
for single weights E1 – M1

For weights	KERN
5 kg*	317-130-700
10 kg*	317-140-700
20 kg*	317-150-700

Carrying cases/boxes for individual weight sets

Individual weight sets
Configure your weight set according to your requirements.

KERN will manufacture a custom-fit wooden case or plastic case for you – drilled and padded according to your specifications.
Please note: These universal cases are custom-made and therefore cannot be returned. The largest individual weight which will fit is given in the table.

Sample order:
Your individual weight set (class F1):
1 × 50 g, 2 × 100 g, 1 × 500 g, 2 × 1 kg, 1 × 2 kg.

The correct individual box is **KERN No. 313-080-400** (plastic) or **KERN No. 315-070-100** (wood, lined)

Plastic case
for individual weight sets classes E1 – M3,
not appropriate for cast iron weights

Largest possible weight	KERN
≤ 500 g	313-050-400
≤ 5 kg	313-080-400

Wooden case
lined, for individual weight sets classes E1 – F1
* with side handles

Largest possible weight	KERN
≤ 200 g	315-040-100
≤ 1 kg	315-060-100
≤ 2 kg	315-070-100
≤ 5 kg*	315-080-100
≤ 10 kg*	315-090-100

Wooden case not lined, for individual weight set classes F2 – M3, not appropriate for cast iron weights * with side handles

Largest possible weight	KERN
≤ 200 g	335-040-200
≤ 500 g	335-050-200
≤ 1 kg	335-060-200
≤ 2 kg	335-070-200
≤ 5 kg*	335-080-200
≤ 10 kg*	335-090-200

Carrying cases for standard weight sets

Plastic case for weight sets
with standard denomination classes E1 – M3,
not appropriate for cast iron weights

Largest possible weight	KERN
≤ 500 g	313-052-400
≤ 5 kg	313-082-400

Fig. shows
313-010-600

Aluminium protected case for safe storage and transportation under harsh industrial conditions.

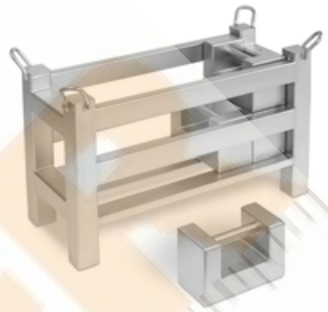
Aluminium protected case
for weight sets with standard denomination classes E1 – M2
*no handle **1 front handle ***2 side handles

For weights	For class	KERN
1 mg - 500 mg	E1 - M1	313-010-600*
1 mg - 50 g	E1 - M1	313-020-600*
1 mg - 100 g	E1 - M1	313-030-600*
1 mg - 200 g	E1 - M1	313-040-600*
1 mg - 500 g	E1 - M1	313-050-600*
1 mg - 1 kg	E1 - M1	313-060-600*
1 mg - 2 kg	E1 - M1	313-070-600**
1 mg - 5 kg	E1 - M1	313-080-600***
1 mg - 10 kg	E1 - M1	313-090-600***
1 g - 50 g	E1 - M2	314-020-600*
1 g - 100 g	E1 - M2	314-030-600*
1 g - 200 g	E1 - M2	314-040-600*
1 g - 500 g	E1 - M2	314-050-600*
1 g - 1 kg	E1 - M2	314-060-600*
1 g - 2 kg	E1 - M2	314-070-600*
1 g - 5 kg	E1 - M2	314-080-600***
1 g - 10 kg	E1 - M2	314-090-600***

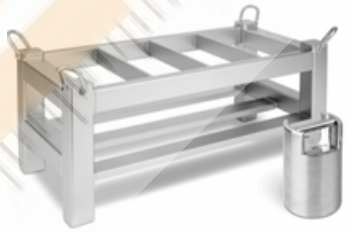
Weight containers for rectangular weights or other test weights, stainless steel glass bead blasted, adjusted to OIML class M1

Preconfigured weight containers for testing high-load floor scales, pallet scales, pallet truck scales, crane scales, etc. This can also be used for storing the weights. This means the weight container and the weights can be placed on the balance in one go, saving you time and money. The weight container is adjusted to OIML accuracy class M1.
Other OIML accuracy classes are also available, please ask.

Weight of the weight container, OIML class M1	Tol +/- g	Possible equipment, rectangular weights, OIML class M1	Maximum total weight (weight container incl. weights)	KERN
20 kg	1,0	5 × 20 kg	120 kg	346-022-005
40 kg	1,5	8 × 20 kg	200 kg	346-042-008
50 kg	2,5	10 × 20 kg	250 kg	346-052-010
50 kg	2,5	4 × 50 kg	250 kg	346-055-004
50 kg	2,5	9 × 50 kg	500 kg	346-055-009
60 kg	3,0	8 × 50 kg and 2 × 20 kg	500 kg	346-065-009



Weight of the weight container, OIML class M1	Tol +/- g	Possible equipment, test weights, OIML class M1	Maximum total weight (weight container incl. weights)	KERN
20 kg	1,0	max. 10 × 10 kg or 5 × 20 kg	120 kg	347-022-005
40 kg	2,0	max. 16 × 10 kg or 8 × 20 kg	200 kg	347-042-008
50 kg	2,5	max. 20 × 10 kg or 10 × 20 kg	250 kg	347-052-010
60 kg	3,0	max. 22 × 20 kg	500 kg	347-062-022



Individual weight containers for rectangular weights or other test weights, calibrated to OIML class M1

Individual weight carriers for testing high capacity floor scales, pallet scales, pallet truck scales, crane scales, etc. This can also be used for storing the weights. This means the weight container and the weights can be placed on the scale in one go, saving time and money.

The weight container can be calibrated to OIML accuracy classes M1 – M3.
On request, KERN will make you a “tailor-made” weight carrier to your specifications.

Example:

3 block weights	each 50 kg, class M1	=	150 kg
1 weight container	each 50 kg, class M1	=	50 kg
Total		=	200 kg

Weight of the weight container, OIML class M1	KERN
Individual weight container for rectangular weights	346-000-000
Individual weight container for test weights	347-000-000

Example illustration