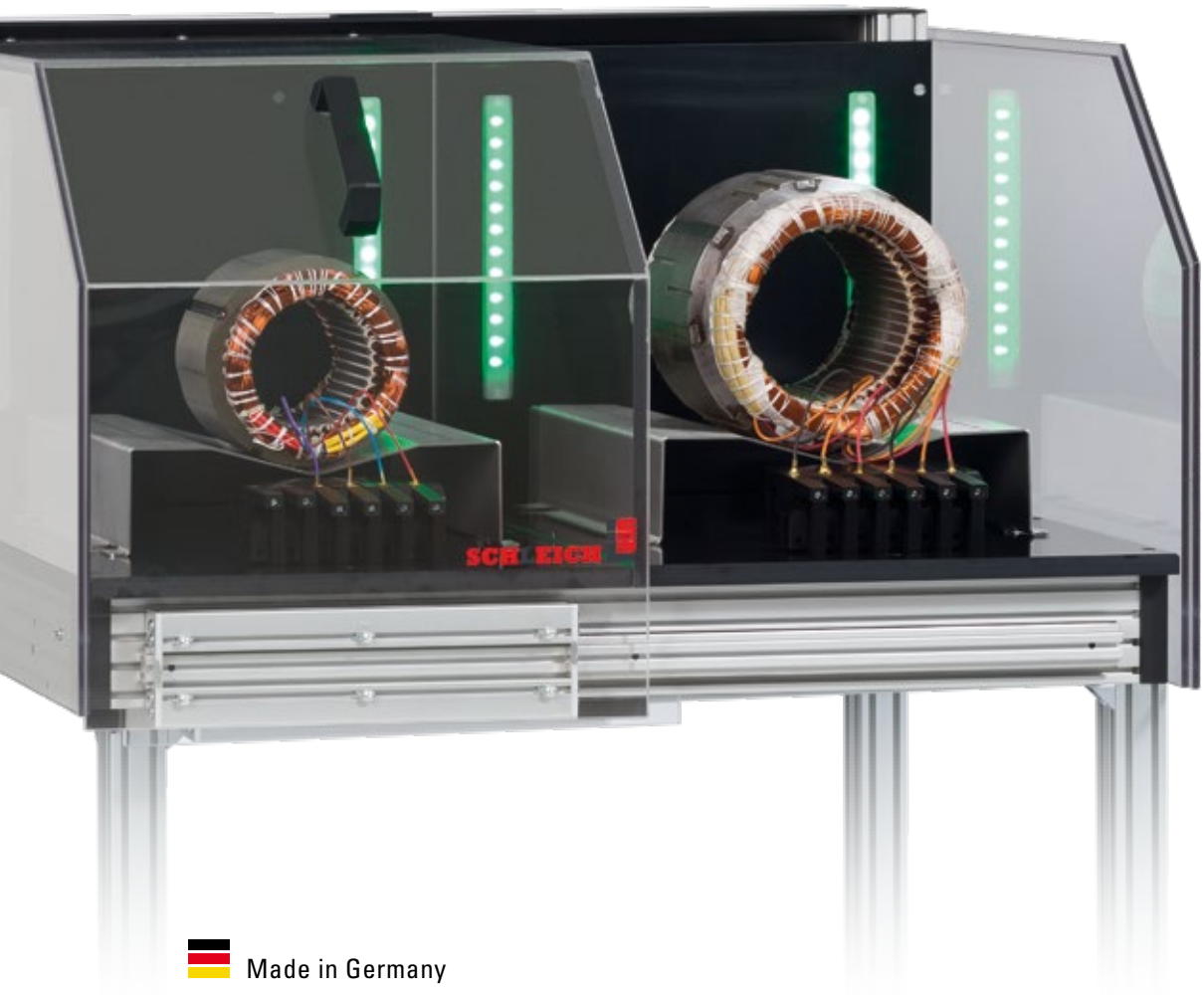
2012
2014
2016
2018

SCHLEICH
Advanced Test Technologies

Test covers | test cabins | protection devices

Personal protection against dangerous test voltages and mechanical hazards

- Single test covers
- Dual test covers
- Test cabins with protection door
- High-voltage test cabins
- Test bays
- Test stations with light curtain
- Protection devices



Made in Germany

Test covers

Protection devices with automatic protection against accidental contact

With the main focus on ergonomics and reliability, SCHLEICH test covers are a solid, long-lasting investment in reducing the risk of the operator. The DUT is safely covered so that it cannot be touched.

The smooth-running cover made of break-proof, transparent plastic covers the DUT and allows visual monitoring during the test. Testing is only possible when the test cover is closed. The status of the test cover is continuously monitored by a two-circuit safety-limit switch in conjunction with a safety-analysis module, which is approved and compliant with standards. This two-circuit safety switch meets the requirements for automatic protection against accidental contact.

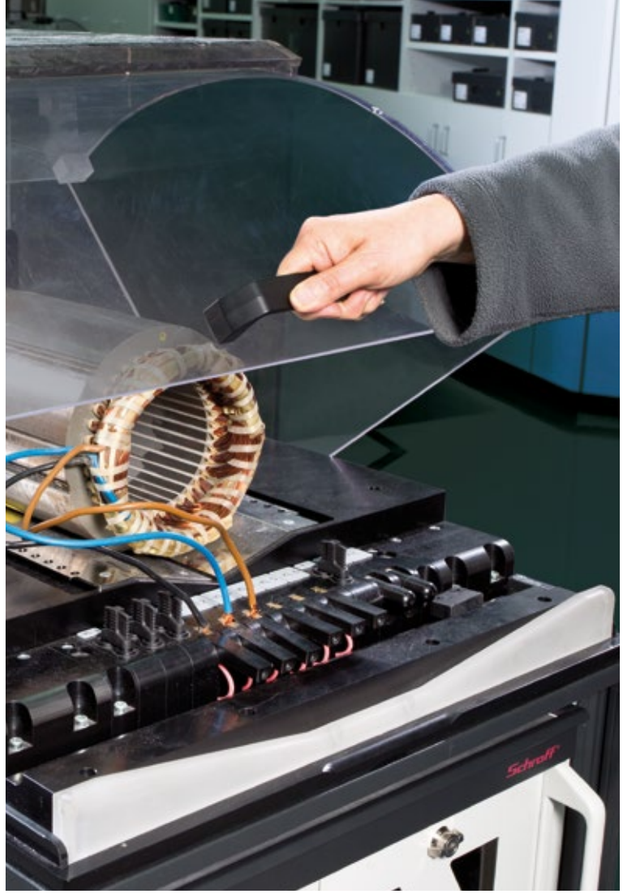
Closing the test cover starts the test process. Opening the test cover while the test is still in process will lead to immediate interruption. The voltage is released and the DUT is unloaded. It is possible to add a safety lock, which prevents that the cover is opened during the test.

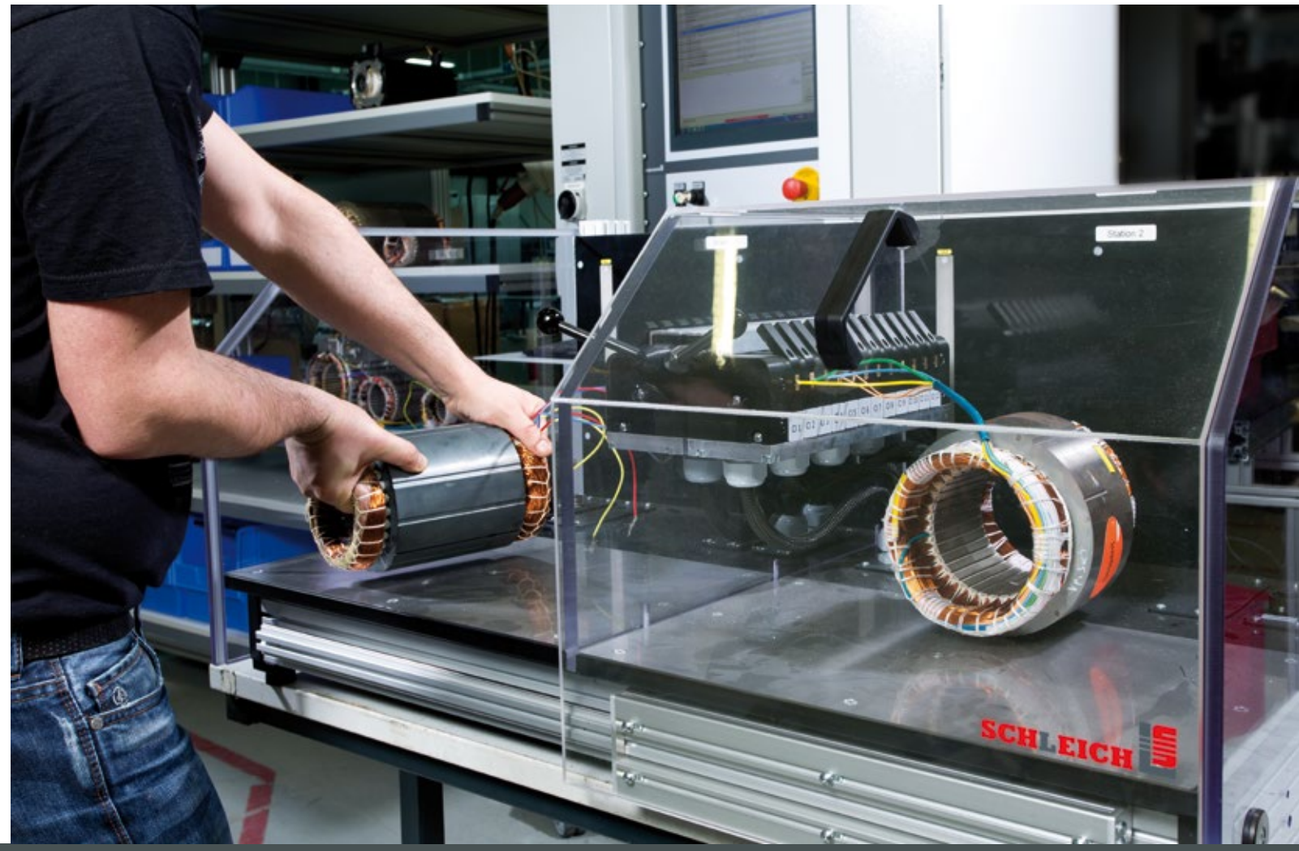
With the optional lock the test cover remains closed:
- until the DUT has been fully discharged
- until a mechanical motion or rotation has been completed
- in case of a negative test result (NO GO)

The complete isolation of the test area prevents voltages being exposed outside the enclosure. The operating personnel is optimally protected.

In order to protect sensitive DUTs from electrostatic charging and discharge, the test covers can be made of ESD-materials (for an extra charge).

The test covers can be used together with individual mechanical fixtures. The fixture can be firmly mounted on the base plate or it can come with an adapter. The test cover contains connections for contacting the test leads. Connection leads to the tester are, in general, firmly connected at the rear. The connection to the tester is realized with plug connectors.





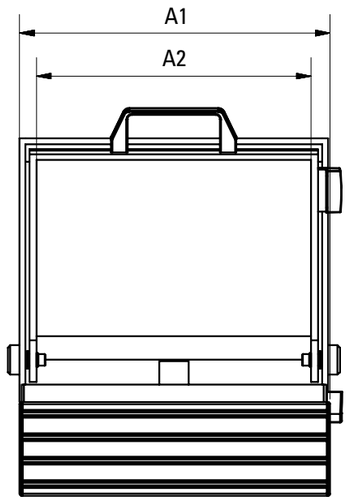
Single test covers

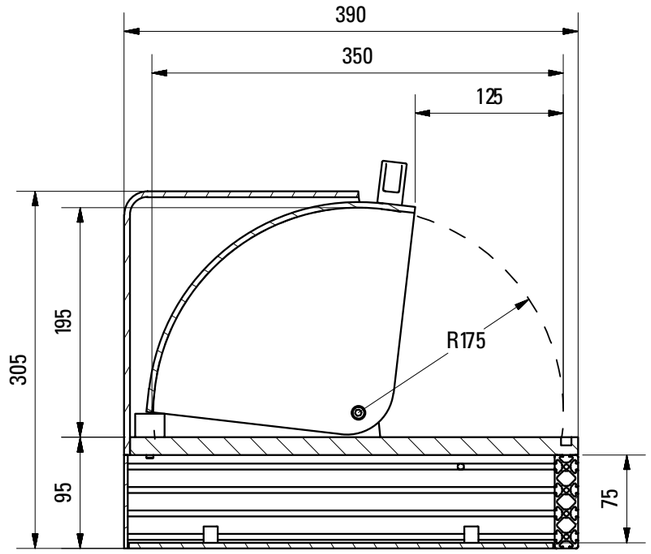
Test cover model 0

	Dimensions			Version
	Width			
	A1 (outside)	A2 (inside)		
1	265 mm	234 mm		M0-265-390-305

Further dimensions on request.

Further details:	
Height of test-cover bottom case	95 mm
Mounting height for components in test-cover bottom case	75 mm
Swivel range of test cover	nearly 90° mechanically
Test voltage	max. 3 kV AC / 3 kV DC
Loading capacity	15 kg
Locking during the test	optional
Automatic opening	no
Automatic closing	no
Test cover as full ESD-version	optional
Table frame	no
Installation in rolling table	optional



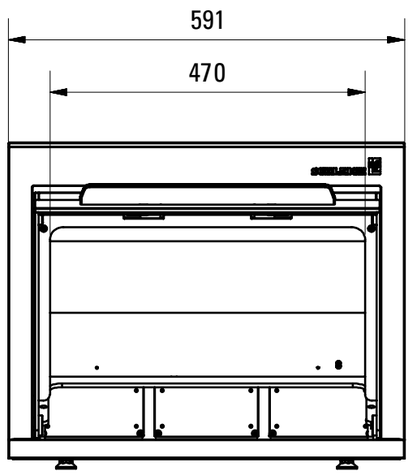


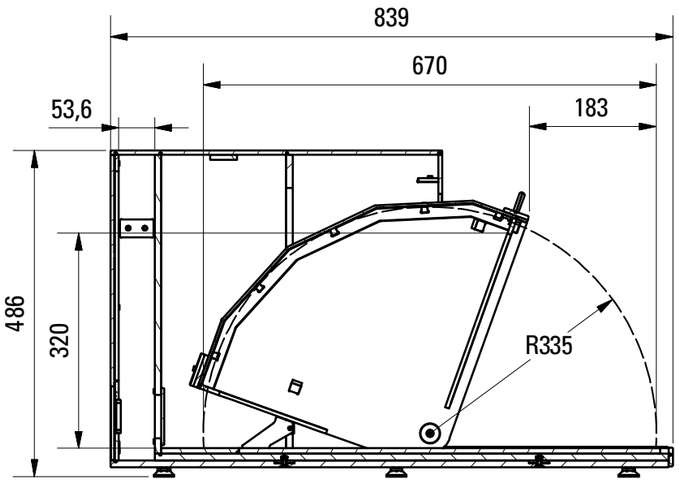
Test cover model 13

	Dimensions							Version
	Width		Depth		Height			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)	C1 (outside)	C2 (inside)		
1	591 mm	470 mm	839 mm	670 mm	486 mm	320 mm		M13-591-839-486

Further dimensions not available.

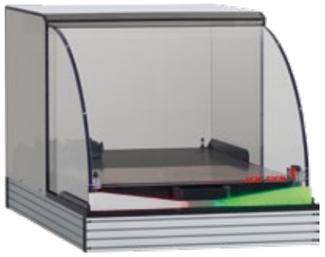
Further details:	
Swivel range of test cover	nearly 90° mechanically
Test voltage	max. 6 KV AC / 8 KV DC
Loading capacity	15 kg
Locking during the test	no
Automatic opening	no
Automatic closing	no
Table frame	no
Installation in rolling table	optional





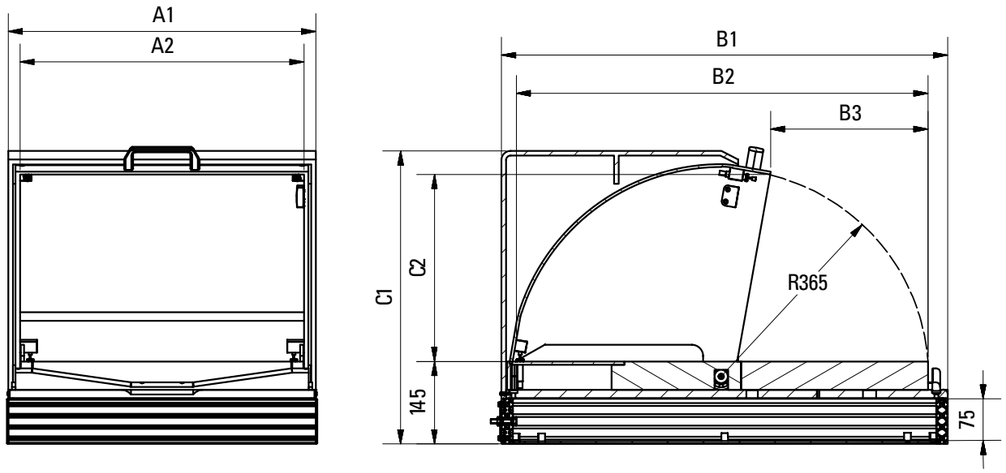
Single test covers

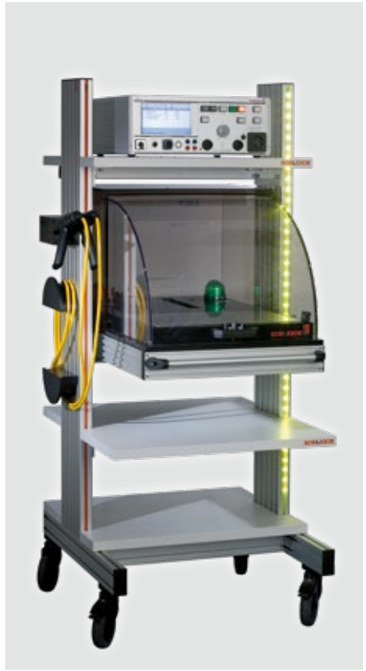
Test cover model 1



	Dimensions								Version
	Width		Depth		Opening width	Height			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)	B3	C1 (outside)	C2 (inside)		
1	546 mm	504 mm	792 mm	730 mm	280 mm	520 mm	332 mm		M1-546-792-520
2	746 mm	704 mm	792 mm	730 mm	280 mm	520 mm	332 mm		M1-746-792-520
3	946 mm	904 mm	792 mm	730 mm	280 mm	520 mm	332 mm		M1-946-792-520

Further details:	
Height of test-cover bottom case	145 mm
Mounting height for components in test-cover bottom case	75 mm
Swivel range of test cover	nearly 90° mechanically
Integrated LED result lamps	GO and NO GO
Test voltage	max. 8 kV AC / 10 kV DC
Loading capacity	50 kg
Locking during the test	optional
Automatic opening	optional
Automatic closing	no
Test cover as full ESD-version	optional
Table frame with adjustable feet / adjustable ESD-feet	optional, height 780 mm with height adjustment from -20 to +20 mm
Table frame with castors or ESD-castors	optional, height 780 mm
Installation in rolling table	optional





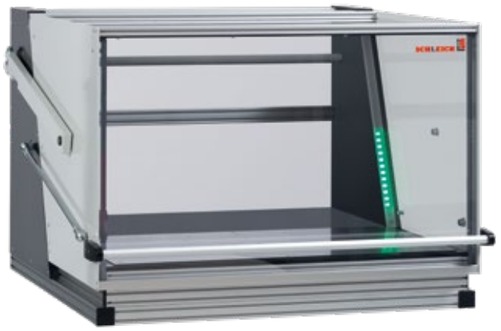
Test cover integrated in a rolling table for mobile and flexible test stations.

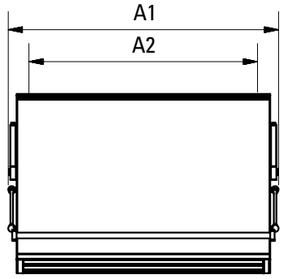
Test cover installed on top of at test system integrated in a rolling container.

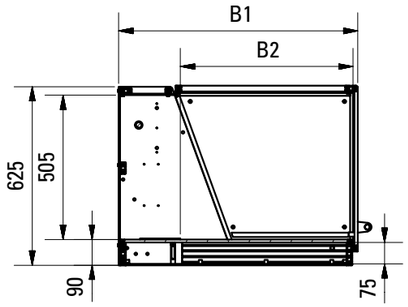
Test cover integrated in a customized test table as complete testing system.

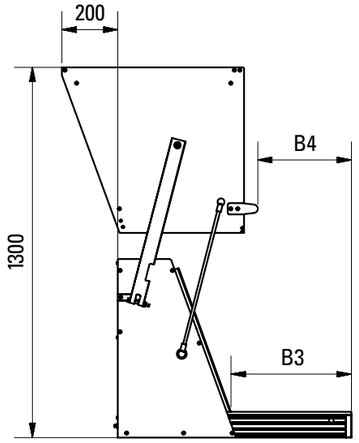
Single test covers

Test cover model 10









	Dimensions							Version
	Width		Depth		Opening width			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)	B3	B4		
1	946 mm	800 mm	837 mm	604 mm	420 mm	350 mm		M10-946-837-625
2	1046 mm	900 mm	837 mm	604 mm	420 mm	350 mm		M10-1046-837-625
3	1146 mm	1000 mm	837 mm	604 mm	420 mm	350 mm		M10-1146-837-625
4	1246 mm	1100 mm	837 mm	604 mm	420 mm	350 mm		M10-1246-837-625
5	946 mm	800 mm	987 mm	754 mm	570 mm	500 mm		M10-946-987-625

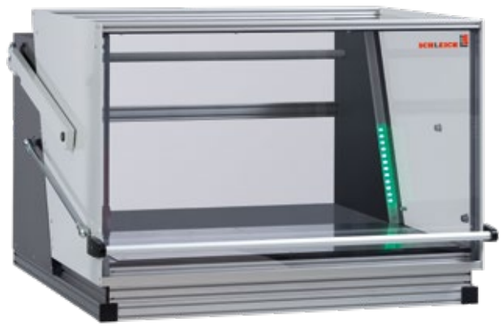
Further details:	
Height of test-cover bottom case	90 mm
Mounting height for components in test-cover bottom case	75 mm
Swivel range of test cover	nearly 90° mechanically
Integrated LED result lamps	GO and NO GO
Test voltage	max. 6 kV AC / 8 kV DC
Loading capacity	15 kg, optional extension to 150 kg
Locking during the test	optional
Automatic opening	optional
Automatic closing	no
Test cover as full ESD-version	optional
Table frame with adjustable feet / adjustable ESD-feet	optional, height 780 mm with height adjustment from -20 to +20 mm
Table frame with castors or ESD-castors	optional, height 780 mm
Transfer belt for workpiece carriers	optional, width max. 400 mm
Ball castors in work surface of test cover	optional

Test cover mounted on a table frame with integrated contacting module for charging cables.

Rolling castors integrated into the work surface for an easy positioning of DUT carriers.

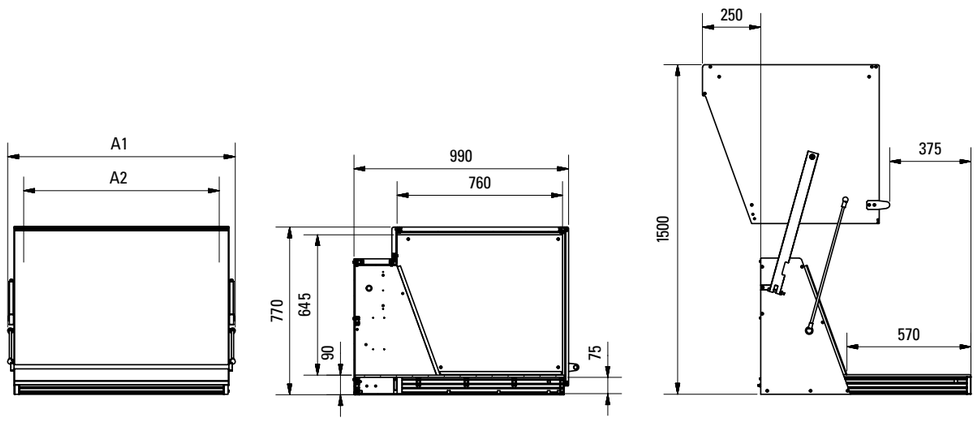
Single test covers

Test cover model 10



	Dimensions			Version
	Width			
	A1 (outside)	A2 (inside)		
1	1046 mm	900 mm		M10-1046-900-770

Further details:	
Height of test-cover bottom case	90 mm
Mounting height for components in test-cover bottom case	75 mm
Swivel range of test cover	nearly 90° mechanically
Integrated LED result lamps	GO and NO GO
Test voltage	max. 6 kV AC / 8 kV DC
Loading capacity	15 kg, optional extension to 150 kg
Locking during the test	optional
Automatic opening	optional
Automatic closing	no
Test cover as full ESD-version	optional
Table frame with adjustable feet / adjustable ESD-feet	optional, height 780 mm with height adjustment from -20 to +20 mm
Table frame with castors or ESD-castors	optional, height 780 mm
Transfer belt for workpiece carriers	optional, width max. 400 mm
Ball castors in work surface of test cover	optional



Dual station for alternate testing in two single test covers.

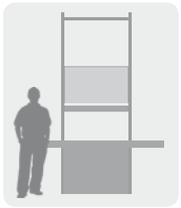
Test cover with manual roller conveyor.

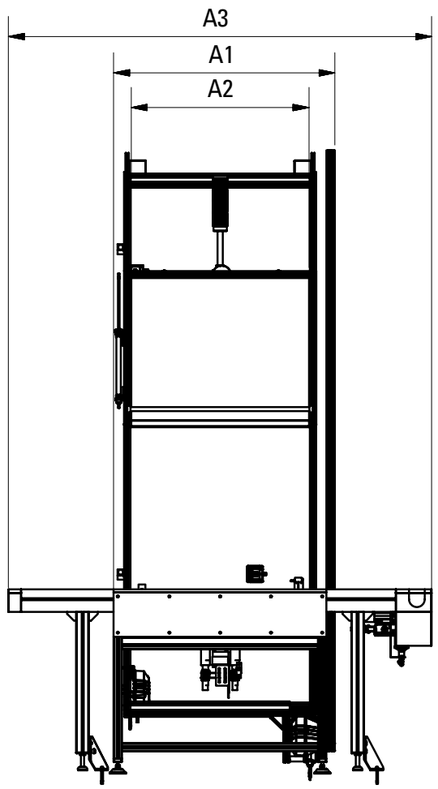
Test cover mounted on a table frame plus integrated pull-out drawers for test adapters, test leads etc

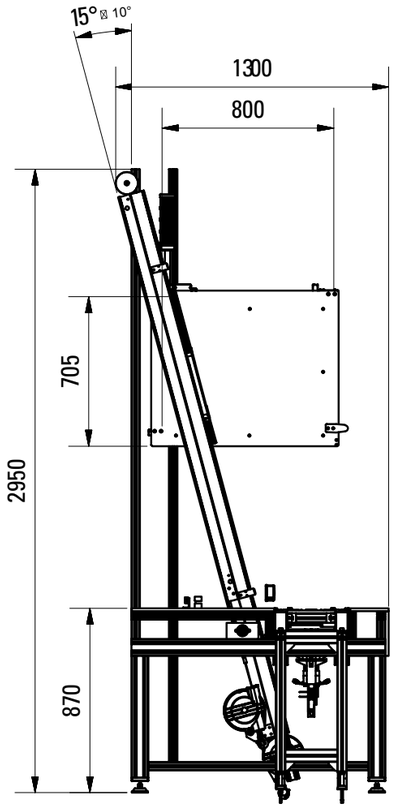
Single test covers

Test cover model 20

The illustrations show an integrated test set-up. Customized optional extras do not belong to the standard equipment of test covers.







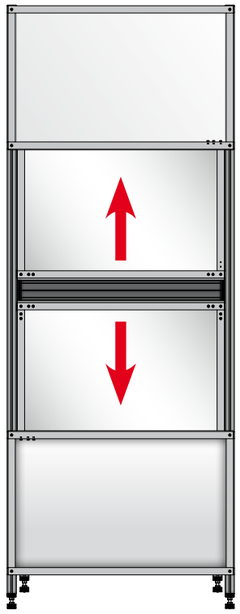
	Dimensions				Version
	Width				
	A1 (outside)	A2 (inside)	A3 (table width)		
1	1050 mm	800 mm	2000 mm		M20-1050-800-705

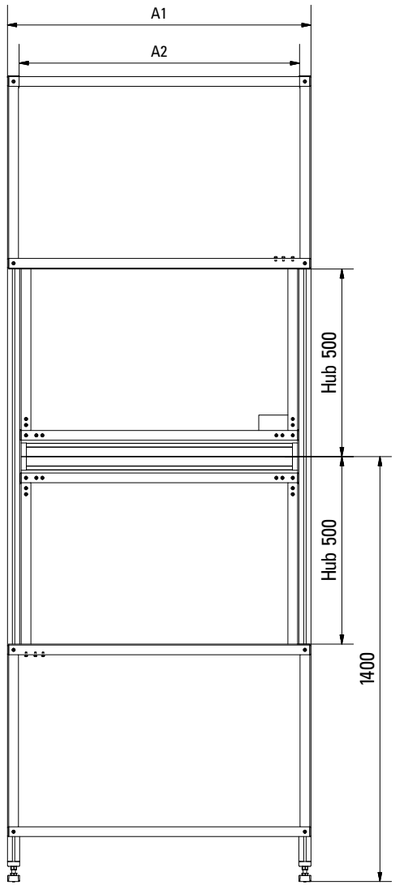
Further details:	
Swivel range of test cover	10° to 15° to the back
Integrated LED result lamps	GO and NO GO
Test voltage	max. 6 kV AC / 8 kV DC
Loading capacity	25 kg, optional extension to 150 kg
Locking during the test	optional
Automatic opening	yes
Automatic closing	yes
Test cover as full ESD-version	optional
Test cover as Faraday cage	optional
Table frame	yes, height 870 mm with height adjustment from -20 to +20 mm

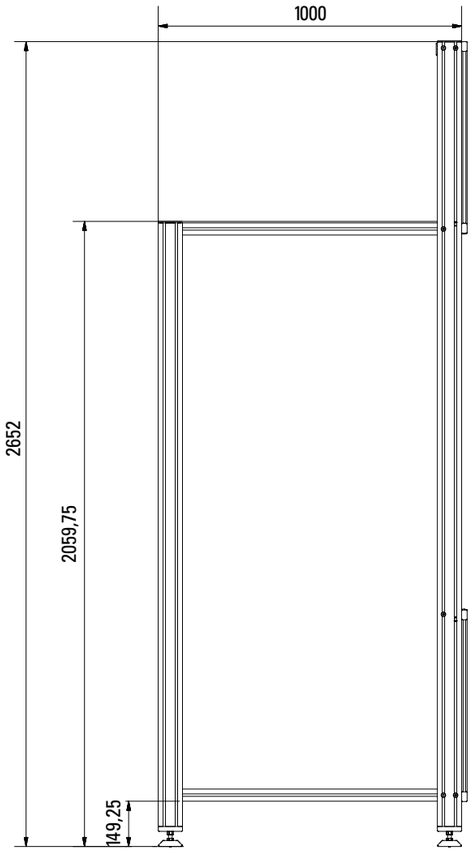
The displayed single test cover is designed as a Faraday cage to all sides. This allows to perform highly accurate measurements without external influences.

Single test covers

Test cover model 21







	Dimensions			Version
	Width			
	A1 (outside)	A2 (inside)		
1	1000 mm	980 mm		M21-980-1000-1000

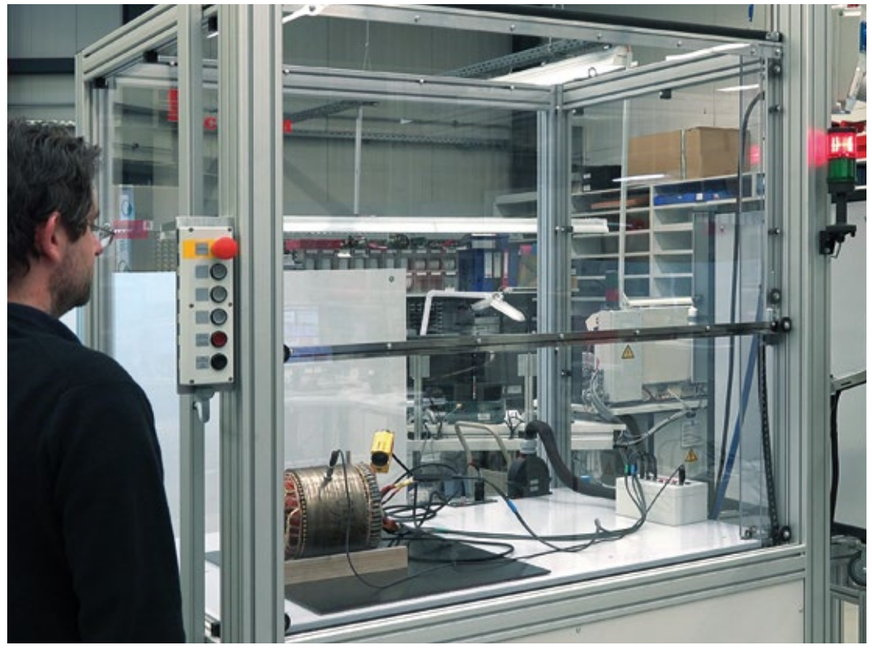
Further details:	
Integrated LED result lamps	GO and NO GO
Test voltage	max. 6 kV AC / 8 kV DC
Loading capacity	100 kg, optional extension to 250 kg
Locking during the test	optional
Automatic opening	yes
Automatic closing	yes
Test cover as full ESD-version	optional

For opening, the two doors move automatically down and up. Behind the doors, you find a test space of approx. 1 x 1 x 1 m (W x H x D).
When closing the doors, an anti-crush guard protects against possible dangers.

System solutions with test covers

Test cover with integrated noise protection.

Fully-automatic test system with special test cover and automatic roller conveyor.
The inlets and outlets at the sides open and close automatically.



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for product video!

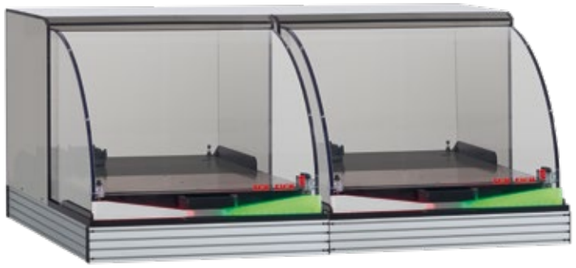
Test cover with horizontally divided two-piece front door that closes upward.

Test system with customized test cover and manual roller conveyor.

Test system with customized test cover and automatic roller conveyor. A gripper system lifts the DUT off the product carrier and moves it to the testing position, where the automatic contacting takes place.

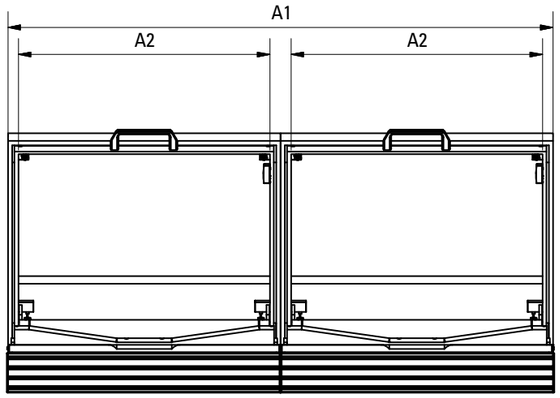
Dual test covers

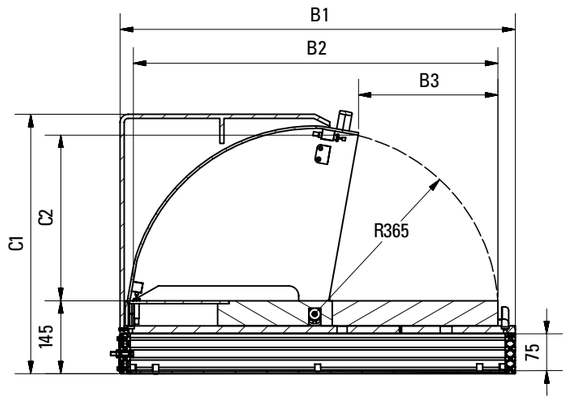
2 x test cover model 1

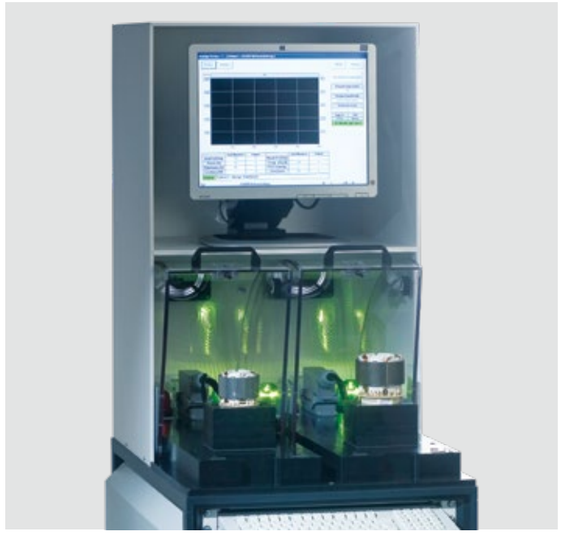


	Dimensions								Version
	Width		Depth		Opening width	Height			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)	B3	C1 (outside)	C2 (inside)		
1	1092 mm	502 mm	792 mm	730 mm	280 mm	520 mm	305 mm		2xM1-1092-792-520
2	1492 mm	702 mm	792 mm	730 mm	280 mm	520 mm	305 mm		2xM1-1492-792-520

Further details:	
Height of test-cover bottom case	145 mm
Mounting height for components in test-cover bottom case	75 mm
Swivel range of test cover	nearly 90° mechanically
Integrated LED result lamps, per station	GO and NO GO
Test voltage	max. 8 kV AC / 10 kV DC
Loading capacity	15 kg, optional extension to 50 kg
Locking during the test	optional
Automatic opening	optional
Automatic closing	no
Test cover as full ESD-version	optional
Table frame with adjustable feet / adjustable ESD-feet	optional, height 780 mm with height adjustment from -20 to +20 mm
Table frame with castors or ESD-castors	optional, height 780 mm





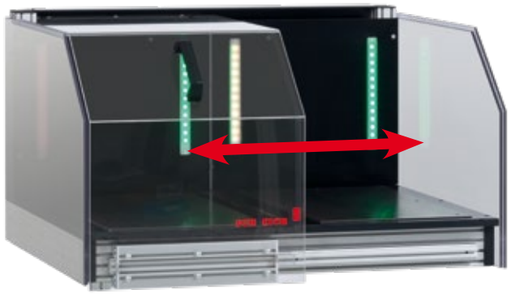


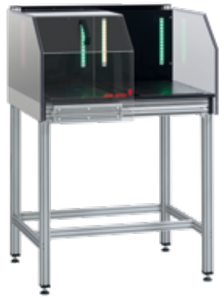
Two narrow single test covers mounted on a rolling container.

Dual test station consisting of two individual test covers.

Dual test covers

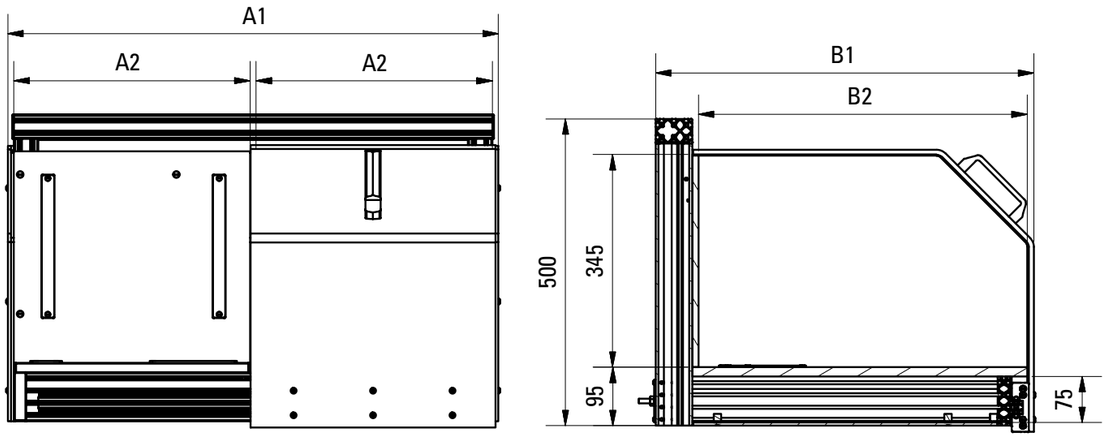
Test cover model 3





	Dimensions					Version
	Width		Depth			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)		
1	800 mm	385 mm	617 mm	536 mm		M3-800-617-500
2	1000 mm	488 mm	617 mm	536 mm		M3-1000-617-500
3	1200 mm	588 mm	617 mm	536 mm		M3-1200-617-500
4	1400 mm	688 mm	617 mm	536 mm		M3-1400-617-500

Further details:	
Height of test-cover bottom case	95 mm
Mounting height for components in test-cover bottom case	75 mm
Integrated LED result lamps	GO and NO GO
Test voltage	max. 6 kV AC / 8 kV DC
Loading capacity	20 kg, optional extension to 50 kg
Locking during the test	yes
Automatic opening	no
Automatic closing	no
Test cover as full ESD-version	optional
Table frame with adjustable feet / adjustable ESD-feet	optional, height 780 mm with height adjustment from -20 to +20 mm
Table frame with castors or ESD-castors	optional, height 780 mm

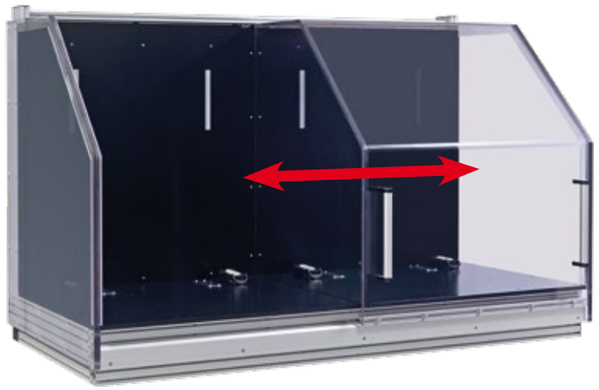


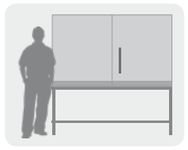
Test cover mounted on a rolling container with test system.

Test cover mounted directly to the 19“-cabinet of a test system.

Dual test covers

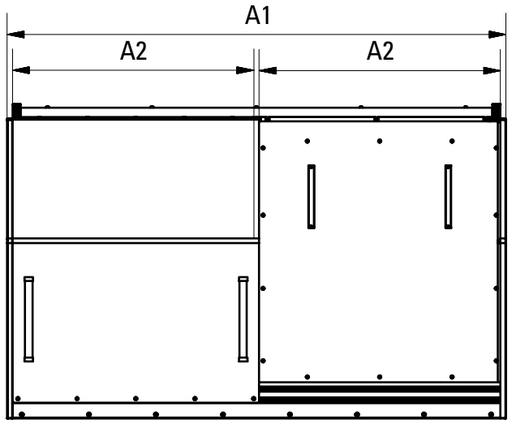
Test cover model 12

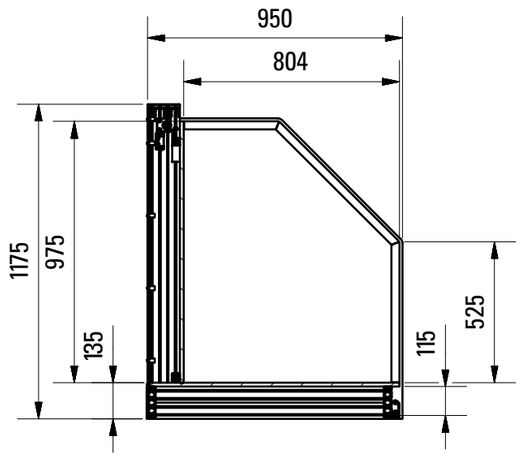




Dimensions				Version
	Width			
	A1 (outside)	A2 (inside)		
1	1860 mm	900 mm		M12-1860-950-1175

Further details:	
Height of test-cover bottom case	135 mm
Mounting height for components in test-cover bottom case	115 mm
Integrated LED result lamps, per station	GO and NO GO
Test voltage	max. 6 kV AC / 8 kV DC
Loading capacity	50 kg, optional extension to 150 kg
Locking during the test	yes
Automatic opening	no
Automatic closing	no
Test cover as full ESD-version	optional
Table frame with adjustable feet / adjustable ESD-feet	optional, height 780 mm with height adjustment from -20 to +20 mm
Table frame with castors or ESD-castors	optional, height 780 mm





System solution with integrated DUT fixture in dual test cover.

Test cabins

Protection devices with automatic protection against accidental contact

With the main focus on ergonomics and reliability, SCHLEICH test cabins are a solid, long-lasting investment in reducing the risk of the operator.

Test cabins have a door, which prevents the DUT from being touched. The easy-to-open protection door made of break-proof, transparent plastic covers the DUT and allows visual monitoring during the test. Testing is only possible when the protection door is closed. The status of the protection door is continuously monitored by a two-circuit safety-limit switch in conjunction with a safety-analysis module, which is approved and compliant with standards. This two circuit safety switch meets the requirements for for automatic protection against accidental contact.

Closing the test cabin starts the test process. Opening the test cabin while the test is still in process will lead to immediate interruption. The voltage is discharged and the DUT is unloaded. It is possible to add a safety lock, which prevents the door being opened during the test.

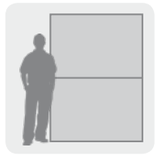
The complete isolation of the test area prevents voltages from being exposed outside the enclosure.. The operating personnel is optimally protected.

In order to protect sensitive DUTs from electrostatic charging and discharge, the test cabins can be made of ESD-materials (for an extra charge).

Test cabins with protection door

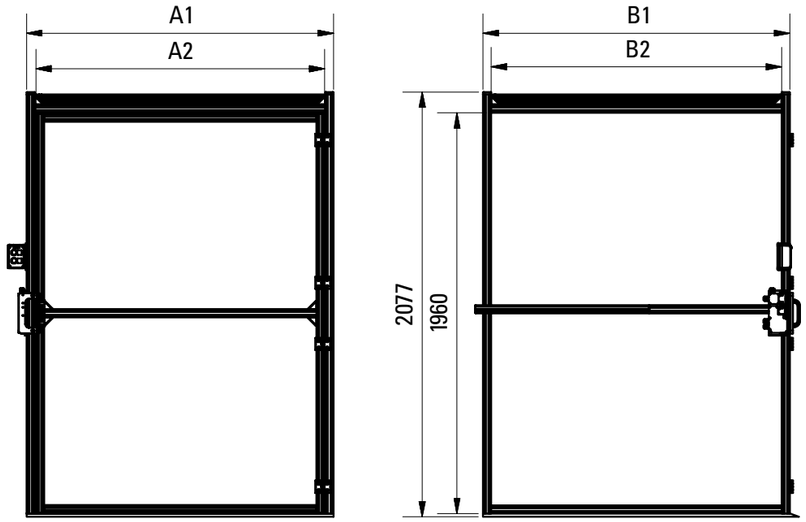
Test cabin with hinged door

The illustration shows an integrated contacting unit. Customized optional extras do not belong to the standard equipment of test cabins.



	Dimensions					Version
	Width		Depth			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)		
1	1500 mm	1413 mm	1500 mm	1420 mm		PKT-1500-1500-2077

Further details:	
Integrated LED result lamps	GO and NO GO, optional
Test voltage	max. 6 kV AC / 8 kV DC
Loading capacity	2000 kg
Locking during the test	optional
Automatic opening	no
Automatic closing	no



Test cabins with roll-up door

Test cabin with roll-up door

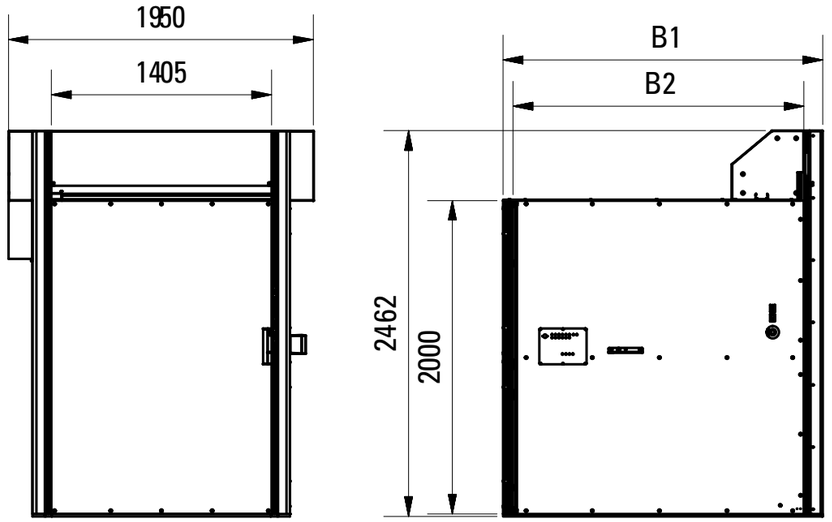
The illustration shows an integrated contacting unit. Customized optional extras do not belong to the standard equipment of test cabins.

Click here

for product video!

	Dimensions			Version
	Depth			
	B1 (outside)	B2 (inside)		
1	2400 mm	1856 mm		PKR-1950-2040-2462

Further details:	
Integrated LED result lamps	GO and NO GO, optional
Test voltage	max. 6 kV AC / 8 kV DC
Loading capacity	2000 kg
Locking during the test	yes
Automatic opening	yes
Automatic closing	yes



Test cabins ≥ 10 kV AC/DC

Protection devices with automatic protection against accidental contact

With the main focus on ergonomics and reliability, SCHLEICH test cabins are a solid, long-lasting investment in reducing the risk of the operator.

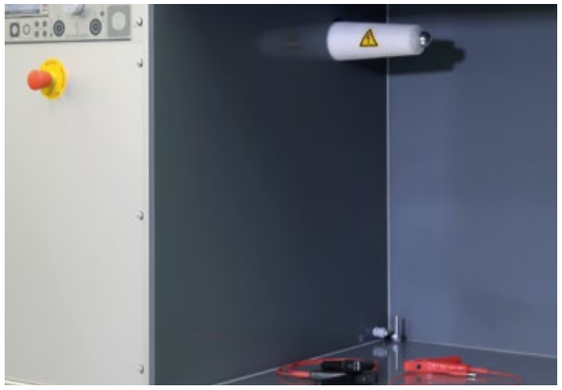
The high-voltage test cabins are a compact unit consisting of test cabin, integrated testing device and high-voltage transformer respectively electronic high-voltage source combined with optimum safety.

The protection door made of break-proof, transparent specialty plastic with integrated high-voltage dissipation allows visual monitoring during the test. High-voltage testing is only possible when the protection door is closed. The status of the protection door is continuously monitored by a two-circuit safety-limit switch in conjunction with a safety-analysis module, which is approved and compliant with standards. This two-circuit safety switch meets the requirements for automatic protection against accidental contact.

Closing the test cabin starts the test process. Opening the test cabin while the test is still in process will lead to immediate interruption. The voltage is released and the DUT is unloaded. It is possible to add a safety lock, which prevents that the door is opened during the test.

In order to avoid dangerous voltages from being exposed outside the enclosure, the inside of the test cabin is electrically isolated. The operating personnel is optimally protected.

A high-voltage-proof air extractor (ozone) can be integrated as an option.



In this example, the high voltage is supplied via a connection tube with ball installed inside the test cabin.

Test cabins ≥ 10 kV AC/DC

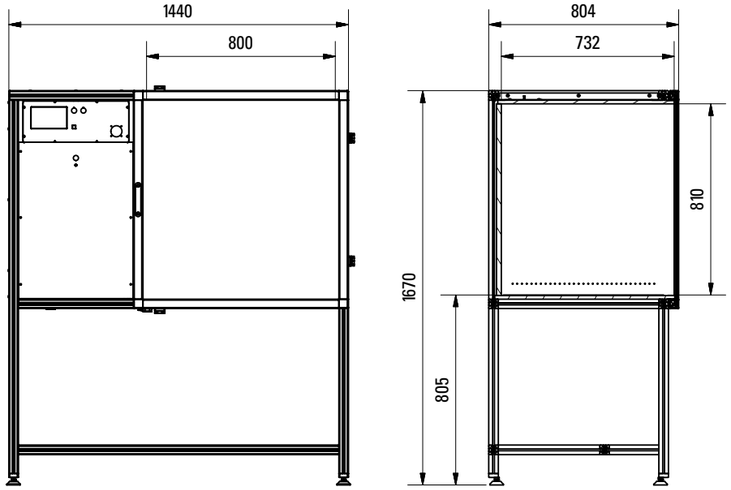
Test cabin with integrated high-voltage tester

Click here

for product video!

	Dimensions							Version
	Width		Depth		Height			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)	C1 (outside)	C2 (inside)		
1	1440 mm	800 mm	804 mm	732 mm	1670 mm	810 mm		PKT-HV-800-732-810

Further details:	
Test voltage	various models up to max. 50 kV AC/DC
Loading capacity	15 kg, optional extension to 150 kg
Locking during the test	yes
Automatic opening	no
Table frame with adjustable feet / adjustable ESD-feet	optional, height 780 mm with height adjustment from -20 to +20 mm
Table frame with castors or ESD-castors	optional, height 780 mm
Air extractor (ozone)	optional



Test bays

Protection devices with automatic protection against accidental contact

With the main focus on ergonomics and reliability, SCHLEICH test bays are a solid, long-lasting investment in reducing the risk of the operator. Test bays are used for bulky and heavy DUTs.

They have a protection fence and one or more protection doors, which prevents the DUT from being touched. For optimizing material flow or accessibility, you can use several protection doors. The protection door is made of the same grid material as the fence.

All metal components of the fence and the protection door are electrically connected to each other and grounded over a large surface. In the event that voltages reach the protection device, the complete grounding of the test bay makes sure that they are safely dissipated to ground. This protects the operator standing outside.

Testing is only possible when the protection door is closed. The status of the protection door is continuously monitored by a two-circuit safety-limit switch in conjunction with a safety-evaluation module, which is approved and compliant with standards. This two-circuit safety switch meets the requirements for automatic protection against accidental contact.

Warning lamps at various positions around the fence warn of increased danger.

It is not possible to open the protection door(s) while a test is in progress. A locking device makes sure that the protection door(s) cannot be opened.

To cancel the test process in the event of critical situations, Emergency-Stop switches are positioned at the fence.

Test bays

SCHLEICH test bays are configured to meet your special requirements. There are virtually no limits for the wishes of our customers. In order to offer you a tailor-made test bay, please provide us with the information to be entered below.

Dimensions

Width _____ m

Depth _____ m

Height _____ m

If the shape of your test bay is other than square or rectangle, please enter the dimensioned drawing below:

Doors

Amount _____ pcs.

Width door 1 _____ m

Width door 2 _____ m

Width door 3 _____ m

Number of leaves door 1 _____ pcs.

Number of leaves door 2 _____ pcs.

Number of leaves door 3 _____ pcs.

Door 1, movable yes ☐ no ☐

Door 2, movable yes ☐ no ☐

Door 3, movable yes ☐ no ☐

Door 1, hinged yes ☐ no ☐

Door 2, hinged yes ☐ no ☐

Door 3, hinged yes ☐ no ☐

With locking yes ☐ no ☐

Warning lights

Type of light _____

Amount _____ pcs.

Emergency Stop

Amount _____ pcs.

Test stations with safety-light curtains

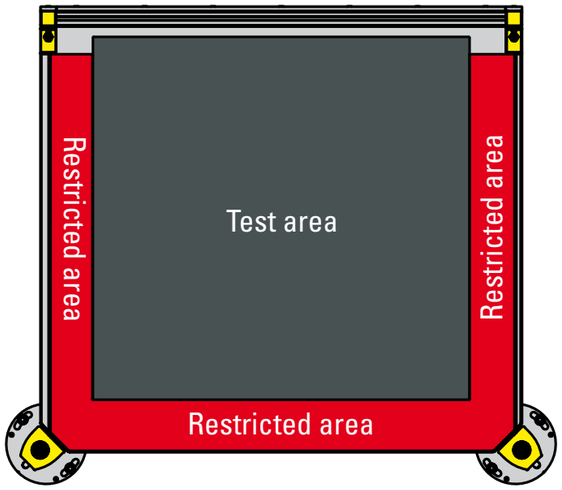
Protection devices without automatic protection against accidental contact

With the main focus on ergonomics and reliability, SCHLEICH test stations with safety-light curtains are a solid, long-lasting investment in reducing the risk of the operator.

By using opto-electronic safety-light curtains, operation of the system will not be impaired You will improve productivity with a maximum level of safety. An appropriate set-up ensures that when a person falls into the test area, the DUT is disconnected from the power supply and stays disconnected. For example, electric motors with freely accessible shaft ends must stop very quickly before they can be touched. For the design, the respective reaction phase must be taken into consideration.

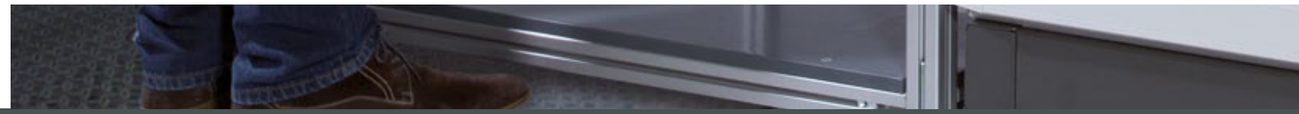
The minimum distance between optical protection device and the outer outline of the DUT must be determined precisely. We will plan the complete set-up and the required safety distances for you. Optical protection devices can identify leads that are running outside of the test area only with great effort. Thin test leads may not be detected. Dangerous exposed voltages could be transferred to the outside.

These factors may require additional safety measures.



Connection leads to the tester are, in general, firmly connected at the rear. The connection to the tester is realized with plug connectors.

In order to protect sensitive DUTs from electrostatic charging and discharge, the test stations with safety-light curtains can be made of ESD-materials (for an extra charge).



Test station with safety-light curtain

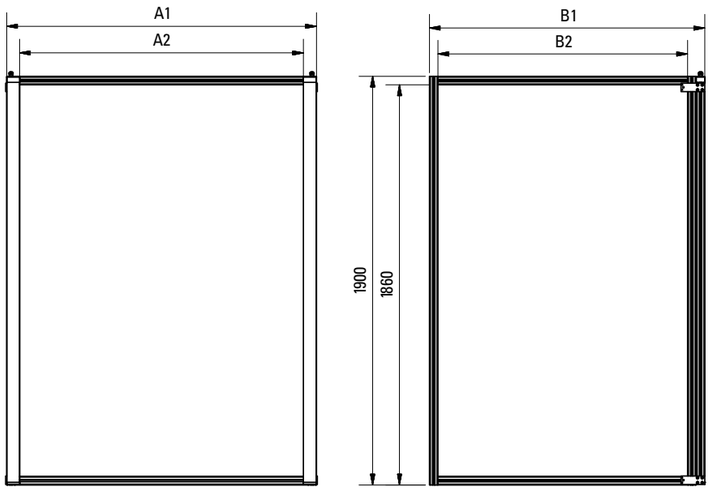
Test station with light curtain

The illustration shows an integrated contacting unit and a DUT. Customized optional extras do not belong to the standard equipment of test stations with safety-light curtain.

	Dimensions					Version
	Width		Depth			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)		
1	1440 mm	1320 mm	1280 mm	1160 mm		PKL-1440-1280-1900

Further details:	
Number of firmly closed sides	3
Number of sides safeguarded by light curtain	1
Safety category	4
Smallest detection height	14 mm
Evaluation of safety-light curtain	certified evaluation module

The closed sides consist of impact-proof transparent plastic, which allows to monitor the test process.



Luminaire-test system with cabin with three closed sides.

Test system with cabin with three closed sides. In the front of the work surface and at the top, the restricted area is colored in red.

Motor-test system with cabin with three closed sides.

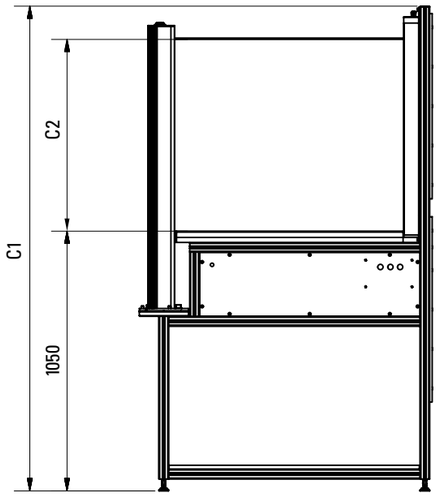
Test station with safety-light curtain

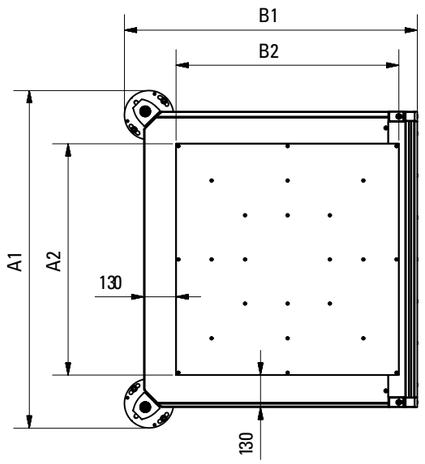
Test table with light curtain

Dimensions								Version
	Width		Depth		Height			
	A1 (outside)	A2 (inside)	B1 (outside)	B2 (inside)	C1 (outside)	C2 (inside)		
1	1370 mm	940 mm	1190 mm	905 mm	1970 mm	650 mm		PTL-1370-1190-??

Further details:	
Number of firmly closed sides	1
Number of sides safeguarded by light curtain	3
Safety category	4
Smallest detection height	14 mm
Evaluation of safety-light curtain	certified evaluation module

The closed rear panel consist of impact-proof transparent plastic, which allows to monitor the test process.





Dual test system with two test stations and two deflector mirrors each. While testing in one test station, the other test station is unloaded and loaded with the next DUT.

Protection devices

without automatic protection against accidental contact

SCHLEICH protection devices without automatic protection against accidental contact serve to reduce the risk of the operator and signal possible dangers.

Typical applications include not only manual, but also automatic testing. This applies in particular to testing large DUTs that cannot be tested in a test cabin due to large dimensions or high weights.

Owing to the lack of mechanical contact protection between the operator and the DUT, these protection devices do, however, not offer the same high protection level as test covers or test cabins.

The only option is to ensure that there is sufficient space between the operator or other persons and the DUT. This can be done, for example, by means of barrier chains with warning signs, partition walls etc. In addition, red warning lights indicate that the test is in progress and there is an imminent danger.

During the test, the operator in charge must be able to view the complete test area. If there is a risk of injury, he must cancel the test immediately.

When working with dangerous test voltages, the operator is requested to proceed with great care and strictly adhere to applicable safety measures!

Protection devices
without automatic protection against accidental contact

Barrier with warning sign

1

1 2 posts, barrier chain with warning sign

Result lights

1 2 3

Result lights serve to indicate, whether the test result is GO or NO GO. green = test result GO / red = test result NO GO

1 Result lights, horizontal, cable length: 2 m
2 Result lights, vertical, cable length: 2 m
3 Result lights, vertical, with magnet attachment, cable length: 2 m

Warning lights

1 2 3 4

Warning lights serve to indicate, whether the DUT is connected to voltage, which means danger to life.
red = DUT under voltage – danger to life! / green = DUT not connected to voltage – no danger

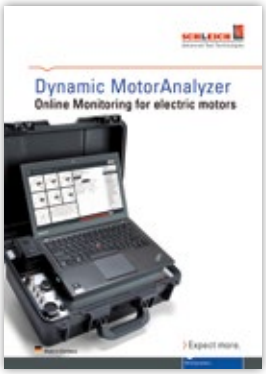
According to EN 50191, the warning-light function can also be adjusted in a way that the warning is already given, when the testing device is ready for operation.
red = testing device ready for operation – danger to life! / green = testing device not ready for operation – no danger

1 Warning lights, horizontal, cable length: 2 m
2 Warning lights, vertical, cable length: 2 m
3 Warning lights, vertical, with magnet attachment, cable length: 2 m
4 Warning lights with Emergency Stop, horizontal, mounted to barrier post

Expect more!

Whatever you want to test, SCHLEICH has the solution! As a leading supplier of electric safety and function test systems as well as motor and winding testers, we offer solutions for any task. The owner-managed company, founded more than 50 years ago, is present in over 40 countries around the globe.

Testers for electric motors and windings



Electrical safety- and function testers

SCHLEICH®
Advanced Test Technologies

SCHLEICH GmbH
An der Schleuse 11
58675 Hemer | Germany
Phone +49 (0) 2372 9498-9498
Fax +49 (0) 2372 9498-99
info@schleich.com
www.schleich.com

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