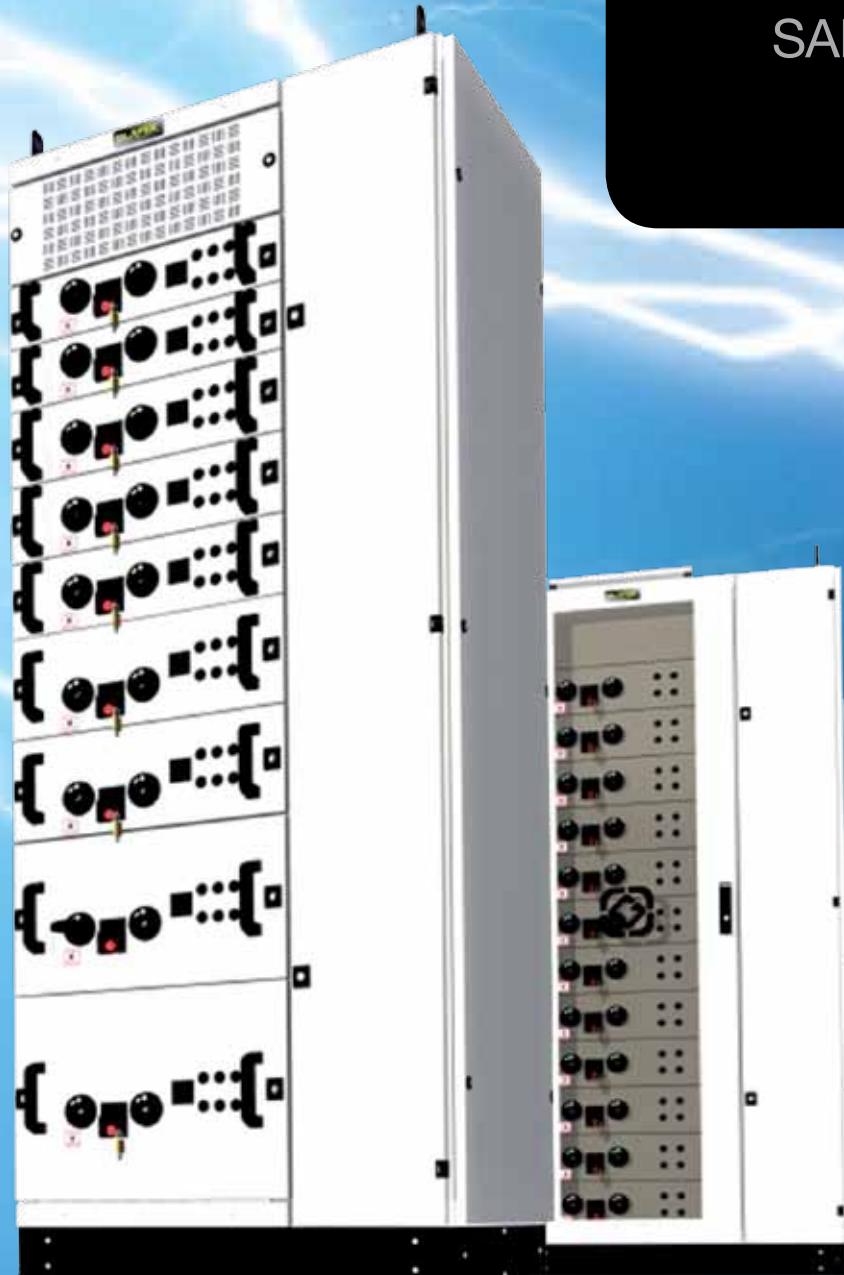


ME-CUB

Safety close at hand



SAFETY



 **GLAFER**

simple ideas for great projects



1

Protection levels: IP30 w/ open version, IP54 w/ transparent door and gasket. Other protection levels upon request.



2

Epoxy powder coating after phosphatizing in shade Ral 7035 (other shades on request).



3

Handling by rollers, crane, bridge crane, or forklift.



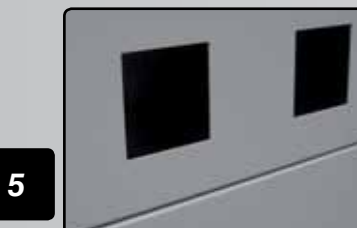
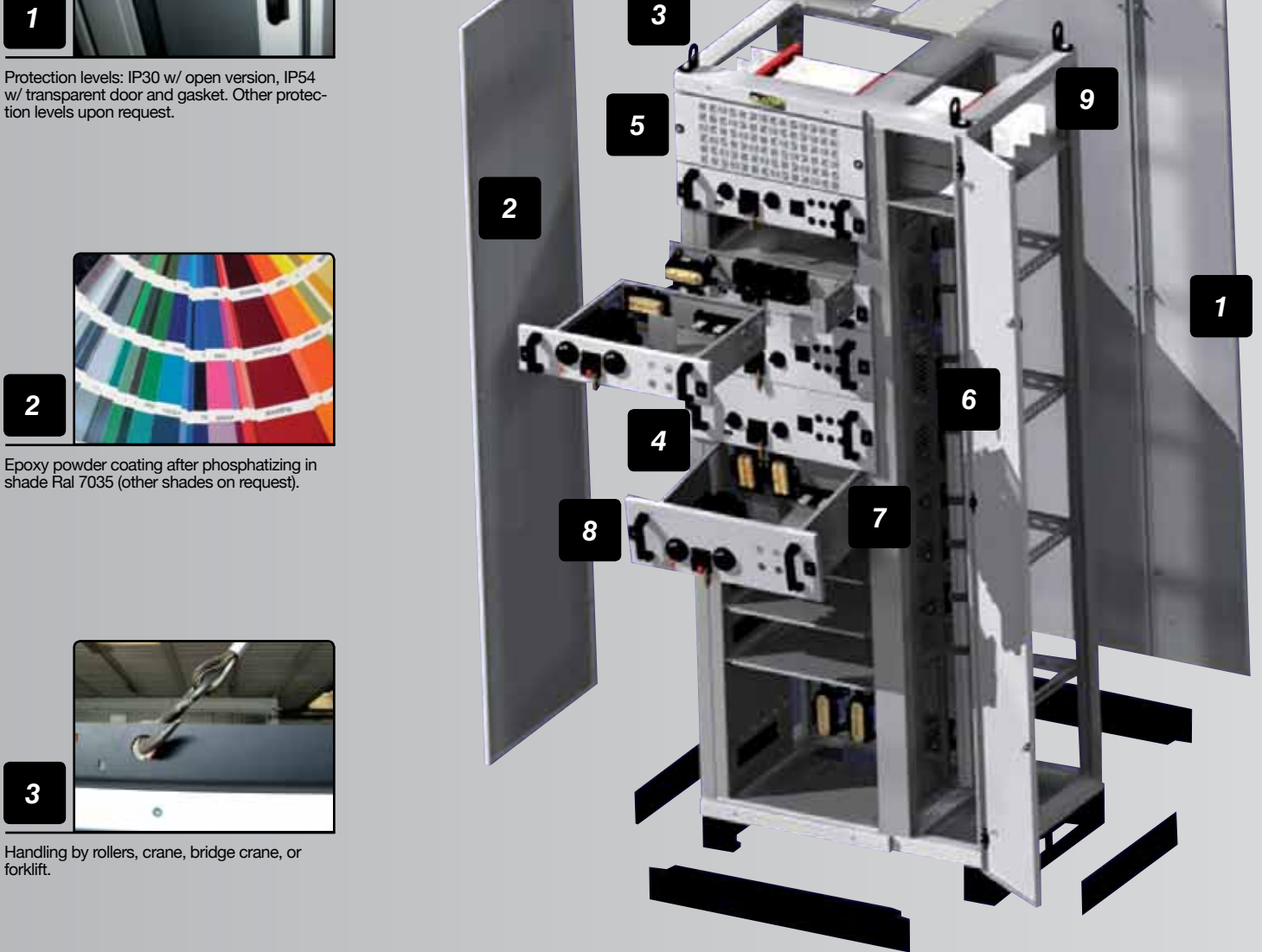
4

Mechanical locking system to prevent the withdrawable unit to accidentally fall resulting in damage to property and/or persons



7

Switchgear air inlet designed to ensure optimal cooling to both busbar and withdrawable units



5

Enclosure hole-cutting service so that these can contain any type of devices, of any make, used by the customer



6

Unmatched ease of access to the auxiliary contacts in order to simplify all wiring and maintenance procedures



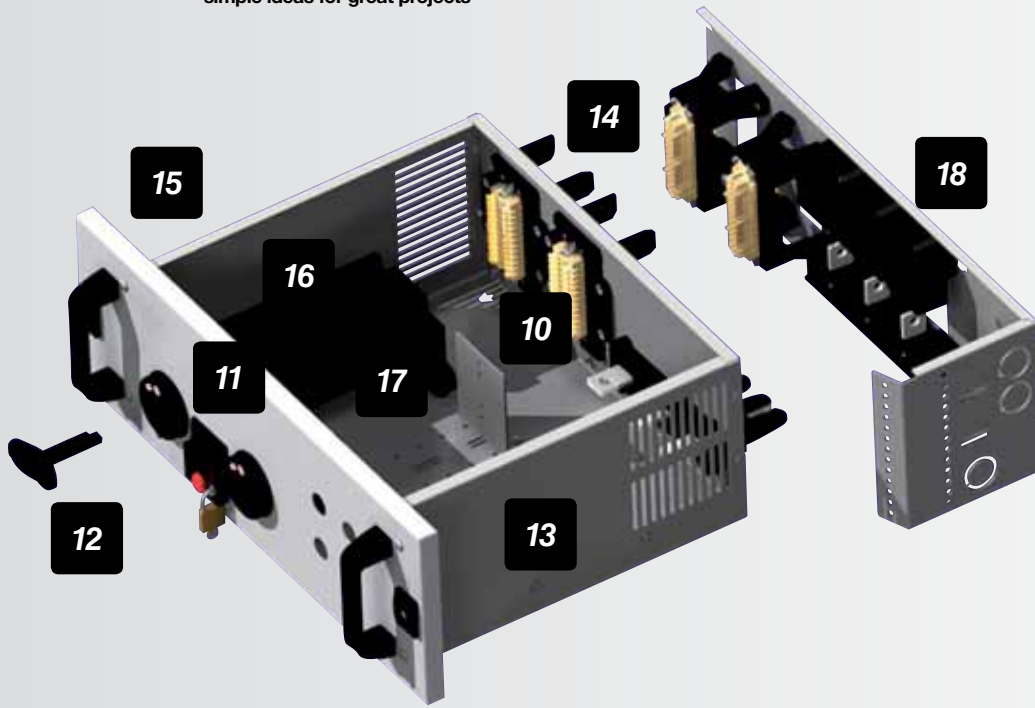
8

Withdrawable unit always in the same position during operating, test, and disconnection procedures thanks to an innovative system that ensures optimal connection between live parts and excellent terminal block coupling



9

Tin / Silver plated busbar system upon request



10

Rear functional units supporting both terminal block and withdrawable unit terminal connections outgoing, all removable from the front, allowing the bench wiring



11

User-friendly operating, test, and disconnection procedures (innovative straightforwardness) thanks to the interlock between vacuum and power switch-disconnector (patented)



12

Universal SWITCHLAF™ Key excluding the use of other handles.

ME-CUB

Safety close at hand



13

Withdrawable unit with removable side panels to ease the bench wiring procedures



14

Highly reliable male-female coupling of the auxiliary contacts by means of an innovative and safe plug-in system



15

Plug-units to side busbar plug mechanism, providing safe and long-lasting contact



16

Intelligent shutting system that separates the side busbar after the disconnection of the withdrawable unit, precluding any accidental contact



17

Upon request it is possible to pre-arrange two position switches interlocked by SWITCHLAF™ to display the withdrawable unit status (operating /disconnected)



18

Switchgear-enclosures with full rear access are also available. These extremely compact configurations allow access to both the auxiliary contacts area and the power cables one from the rear side of the cabinet.

ME-CUB

Main Features

With a wealth of twenty years experience in manufacturing low-voltage switchgear enclosures, LAFER presents an innovative product relying on 3 key concepts: reliability, safety and ease-of-use. Completing Lafer's range of products, ME-CUB is the brand-new concept of MCC in withdrawable unit design. This new cabinet series perfectly matches all other Lafer enclosure systems and it is devoted to motors control and protection plants, and particularly to all manufacturing, chemical, oil and marine engineering plants that require continuous operation.

Technical Features

ME-CUB switchgear main structure is constituted by metal sheet 20/10 mm and all internal components are industrial zinc-plated (sendzimir/aluzinc). The internal structure is divided into 3 areas:

- **Main busbar area.** Located in the upper part of the cabinet, separated by metal sheets, with top, front, and rear access
- **Side busbar area.** Located in the left part of the cabinet, separated and with side access
- **Compartment area.** Located in the fore part of the cabinet and devoted to both fixed and withdrawable outgoing feeders.
- **Aux. contacts/wiring area.** Located in the right fore part of the cabinet, with front and rear access, which allows much easier operating procedures.

Ease-of-use and benefits

All ME-CUB switchgear enclosures have been designed relying on 2 key concepts:

- Contact efficiency of both auxiliary contacts and power plug-units, introducing an innovative plug-in system definitely replacing obsolete slide contacts
 - Efficiency and ease of wiring: the new SWITCHLAF system guarantees straightforward operating, test, and disconnection procedures for an error-free withdrawable unit handle, ensuring highest safety for the operating personnel.
- The enclosures total modularity suits a huge range of extremely compact configurations enabling the exchange of withdrawable units of different heights.

Necessary screws and tools

- M6 self-tapping screws with hex key (size 5) and/or spanner (size 10)
- M6 Philips screws No. 2
- M12 hex key (size 8)

Transport

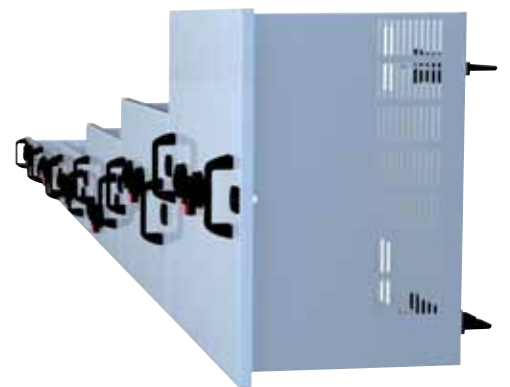
All ME-CUB Switchgear enclosures can be handled according to the customer's requirements:

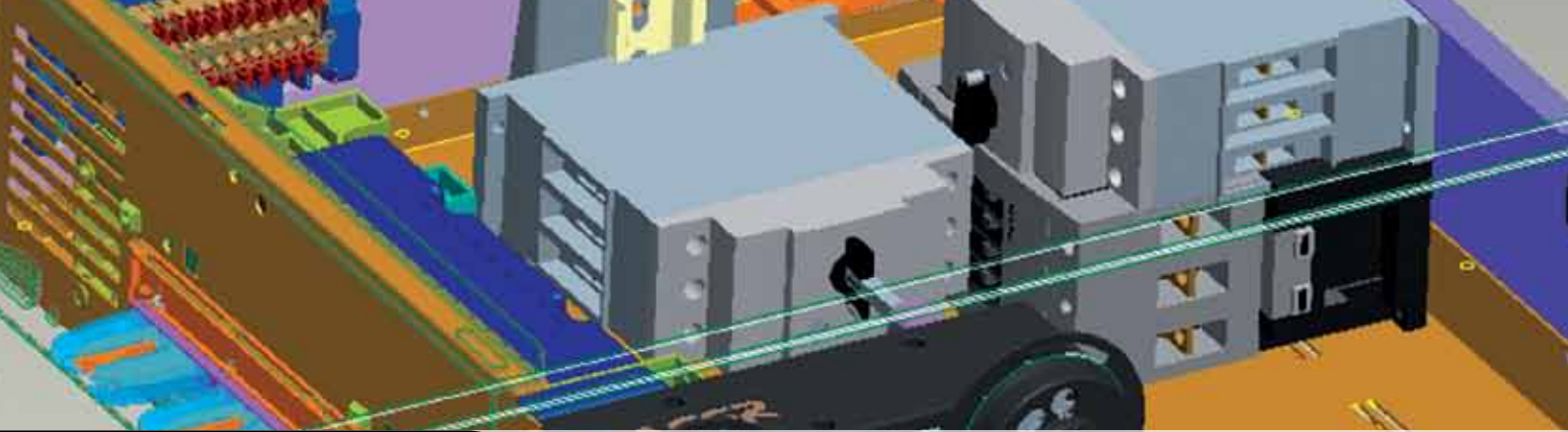
Thanks to: plinths with removable plates – L-shaped lifting bars

It is possible to: palletize the switchgear - Handle it by rollers, crane or bridge crane

LAFER reminds you that in all handling procedures it is advisable to check that the ropes and chains are in good conditions and that the correct centre of gravity of the structure to be handled has been correctly assessed.

VERSATILITY





ME-CUB

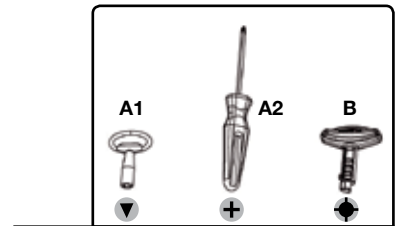
Switchlaf™ system user guide

EASE OF USE

Switchlaf™ system user guide

Required tools

- A1** - Front panels quarter turn triangular key (included)
- A2** - Crosshead screwdriver n°2 for glass door model
- B** - SWITCHLAF™ Key system (included)



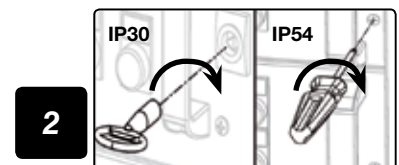
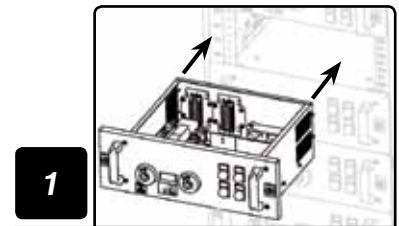
400V withdrawable unit indicative sizing

Normal starting with fuses and breaker			
Unit Height	Direct starting kW	Reversing contactor kW	Star Delta kW
150	18,5	18,5	11
200	30	30	18,5
250	45	45	30
300	75	75	45
400	110	110	75
500	132	132	110
600			132

Withdrawable unit “disconnected” position

From the actual plug-in of the withdrawable unit into the cabinet to “disconnected” positioning of the withdrawable unit:

- Put the withdrawable unit into the cabinet by leaning it on the separating baffle plate and pushing it to end of stroke position (Pic.1)
- Secure the withdrawable unit locks by rotating them 90° clockwise with A1 tool (open design model) or A2 tool (glass door model) (Pic.2)

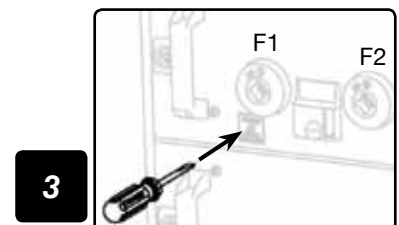


Heavy starting with fuses and breaker			
Unit Height	Direct starting kW	Reversing contactor kW	Star Delta kW
150	11	11	7,5
200	18,5	18,5	11
250	30	30	18,5
300	55	55	45
400	90	90	75
500	132	132	90
600			132

Withdrawable unit “Test” position

From “disconnected” to “test” withdrawable unit positioning

- At withdrawable unit “disconnected” status push test button by means of B tool, in order to properly check the withdrawable unit plug-in. In case of positive test F1 rotary handle device will open (Pic.3), in the negative case please repeat the previous operations.

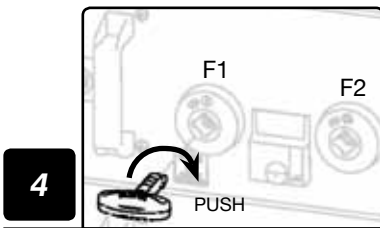


Optional: By using the optional position switch, SWITCHLAF™ system can be interlocked with the auxiliary circuit. In this case a further circuit electrical test is available, and it can be displayed by suitable signals on the front panel (pilot light or similar).

ME-CUB

Switchlaf™ system user guide

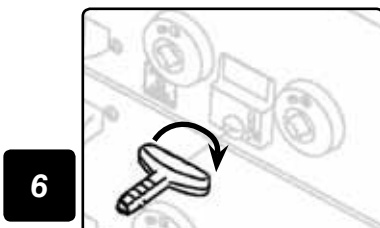
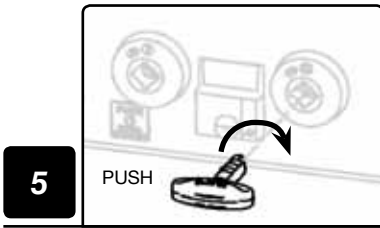
POWER



Withdrawable unit “operating” position

From “test” to “operating” withdrawable unit positioning

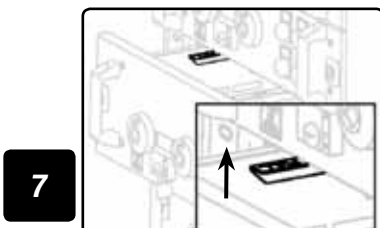
- At withdrawable unit “test” status insert SWITCHLAF™ Key into F1 rotary handle device hole, push and rotate it 180° clockwise to “I” position so that F2 rotary handle device unlocks (Pic.4)
- Insert the SWITCHLAF™ Key into F2 rotary handle device hole, push and rotate it 90° clockwise to “I” position (Pic.5)



Removing the withdrawable unit

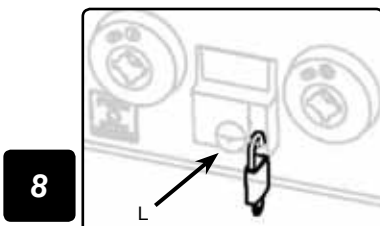
From “operating” status to the actual removal of the withdrawable unit

- At “operating” status perform all previous operations backwards (except for test operation)
- After loosening the triangular locks by means of A1 or A2 tool, pull the withdrawable to the mechanical security lock, (which stops the withdrawable unit and prevents it to accidentally fall)
- Manually Lift the security lock lever (Pic.7)
- Pull the unit completely out of the cabinet



Attention!

After performing every “test” and/or “disconnected” procedure, it is possible to padlock the withdrawable unit. To enable the padlocking (Pic.8), lower L lever by rotating it 90° with SWITCHLAF™ Key (Pic.6). Through this operation, SWITCHLAF™ system will automatically lock both F1 and F2 devices holes, in order to avoid staff mishandling. To unlock the devices holes perform all previous operations backwards



690V withdrawable unit indicative sizing

Normal starting with fuses and breaker			
Unit Height	Direct starting kW	Reversing contactor kW	Star Delta kW
150	18,5	18,5	11
200	37	37	30
250	75	75	55
300	110	110	75
400	160	160	110
500	200	200	160
600			200

Heavy starting with fuses and breaker			
Unit Height	Direct starting kW	Reversing contactor kW	Star Delta kW
150	18.5	18.5	11
200	30	30	18.5
250	55	30	45
300	90	55	75
400	132	90	90
500	160	132	132
600			160

RELIABILITY

Certifications

Lafer guarantees

All ME-CUB switchgear enclosures have been conceived and studied respecting the current national and international standards, CEI EN 61439-1, CEI EN 61439-2, CEI EN 60529, CEI 17-86 IEC/TR 61641.

ME-CUB switchgear enclosures have been tested and certified according to the tests required by the norm procedures and their performance is guaranteed in the actual conditions of use.

All internal components and accessories required for manufacturing the switchgear meet the type testing.

The calculation methods followed for designing and manufacturing LAFER distribution systems also rigorously comply with CEI 17-52 and CEI EN 60865 standards. Furthermore LAFER declares that the complete design of its distribution systems is based on extrapolation from a series of type tests.

ME-CUB switchgear enclosures have been subjected to type testing according to the standard:

Short circuit verification

Connection efficiency verification between the equipment masses and the protection circuit

Protection circuit short circuit withstand verification

- Test no. B0008006 short circuit withstand with $I_n=2500$ A and $I_{cc}=70$ kA for 1 s. ME-CUB cabinet

Overtemperature limits verification

Dielectric properties verification: industrial frequency impulse tests

Clearance and creepage distance verification

- Test no. B0007840 overtemperature limits check ME-CUB cabinet

Internal arc fault verification

- Test no. B0009515 Internal Arc Fault Verification with 70 ka for 300 ms. ME-CUB cabinet

These tests are certified by CESI and are available to all customers who wish to view them.

By virtue of these certifications all LAFER can bear the **CE** Mark



UNI EN ISO 9001

The complete product is manufactured exclusively by production units with a Certified System pursuant to EN 29001 (ISO 9001).

MAIN FEATURES

ELECTRICAL DATA	RATED VOLTAGE VALUES	Insulation voltage [U _i]	1000 V	
		Rated operating voltage [U _e]	690 V	
		Rated impulse withstanding voltage [U _{imp}]	6/8/12 kV	
		Rated frequency	50/60 Hz	
	RATED CURRENT	Main Busbar	Rated current [I _e]	Up to 3200 A
		Distribution Bars	Rated current [I _e]	Up to 800 A
		Rated short-time current (1 s.) (I _{sw})		70 kA
		Rated peak current (I _{pk})		154 kA
	ARC FAULT WITHSTAND	Permissible current (I _{p arc})		70 kA
		Permissible arc duration (t _{arc})		300 ms
WITHDRAWABLE UNIT PLUG UNITS	≤ 250 A			
AUX CONTACTS CONNECTORS	16 A			
N° AUX CONTACTS	24÷48			
MECHANICAL CHARACTERISTICS	DIMENSIONS	Height	2000/2200/2400 mm	
		Width	625/700/800/625 + 200/625 + 400/700 + 200/700 + 400 mm	
		Depth	625/800/1000/1200/1400 mm (Double Front Execution available)	
	MATERIALS	Internal structure	Sendzimir/aluzinc metal sheet 20/10 mm	
		Side and rear panels	Powder coated metal sheet 15/10 mm	
	WITHDRAWABLE UNITS SIZES	150/200/250/300/400/500/600 mm		
	PROTECTION RATING	INSIDE	Up to IP2X	
		OUTSIDE	IP30 to IP54	
	ACCESS	Front rear – fore / Rear (w/out cable duct)		
	SEPARATION FORM	Form 3b/4b		
POWDER COATING	Powder RAL7035			
PLASTIC COMPONENTS	Halogen-free, flame-resistant, self-extinguishing, CFC-free			
ADDITIONAL FEATURES UPON REQUEST	BUSBAR	Tin / Silver plating		
	POWDER COATING	Powder RAL special colors		
	COMPONENTS	Position switch interlocked by SWITCHLAF™		

All accessories are available in FAST-ONE configuration software and at www.lafer.it, at the dedicated web page.

All technical information available in PDF format.



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Certified Quality

LAFER means quality, certified by CSQ and ISO 9001

