



CLMD

Low-voltage capacitors for reliable power factor correction

Reliability for power factor correction

CLMD construction

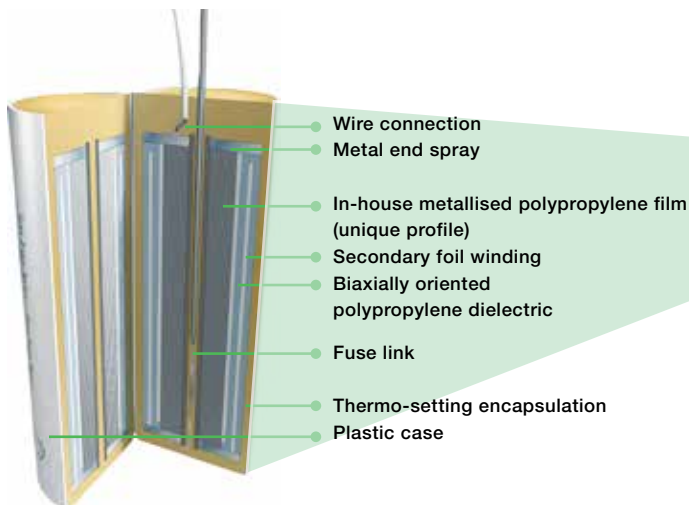
- The CLMD capacitor consists of a number of wound elements made with a dielectric of metallized polypropylene film. These dry windings are provided with a sequential disconnecter ensuring that each element can be reliably and selectively disconnected from the circuit at the end of its life.
- The capacitor elements receive a treatment under vacuum in order to ensure perfect electrical characteristics. Each winding is placed in a plastic case and encapsulated in thermo-setting resin in order to obtain a perfectly sealed element.
- The elements are placed inside a sheet steel box and connected in such a way as to supply the single or three-phase power at the required voltage and frequency.

- The sheet steel box is filled with inorganic, inert and fire proof granules in order to absorb the energy produced or to extinguish any flames in case of a possible defect at the end of an element's life. The CLMD is also provided with thermal equalizers to ensure effective heat dissipation.

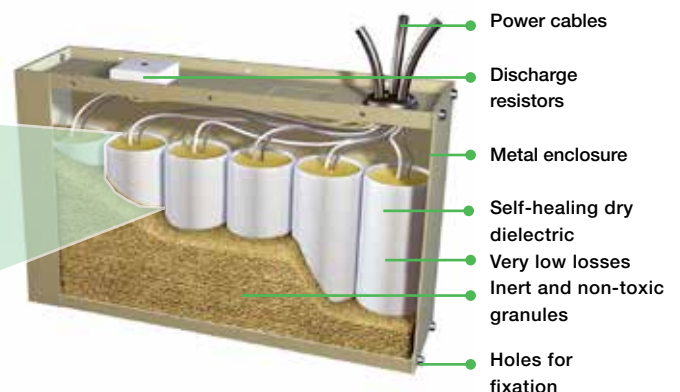
High performance in-house metallized film

ABB's completely integrated manufacturing process has resulted in the development of the special ABB high-performance film of which all ABB LV capacitors benefit:

- high breakdown strength
- excellent peak current handling capability
- high capacitance stability
- optimal self healing design
- long life



Capacitor element



CLMD 33S

Reliable and safe

Dry type design

The CLMD has a dry type dielectric and therefore cannot give any risk of leakage or pollution of the environment.

Very low losses

Dielectric losses are less than 0.2 Watt per kvar. Total losses, including discharge resistors, are less than 0.5 Watt per kvar

Long life - Self-healing

In the event of a fault developing in the dielectric of the capacitor, the metallized electrode adjacent to the fault is immediately vaporized, thus insulating the fault. The capacitor then continues normal operation.

Fire protection

All capacitor elements within the CLMD capacitor are surrounded by vermiculite which is an inorganic, inert, fire proof and non toxic granular material. In the event of any failure the vermiculite absorbs safely the energy produced within the capacitor box and extinguishes any possible flames.

Unique protection system

A unique Sequential Protection System ensures that each individual element can be disconnected from the circuit at the end of its life.

Easy to install - Light weight

The CLMD capacitor is very lightweight and therefore presents no handling difficulties during installation.

High reliability

The CLMD capacitor complies with the requirements of IEC 60831-1 & 2. The use of robust terminals removes the risk of damage during installation and reduces maintenance requirements.

Security

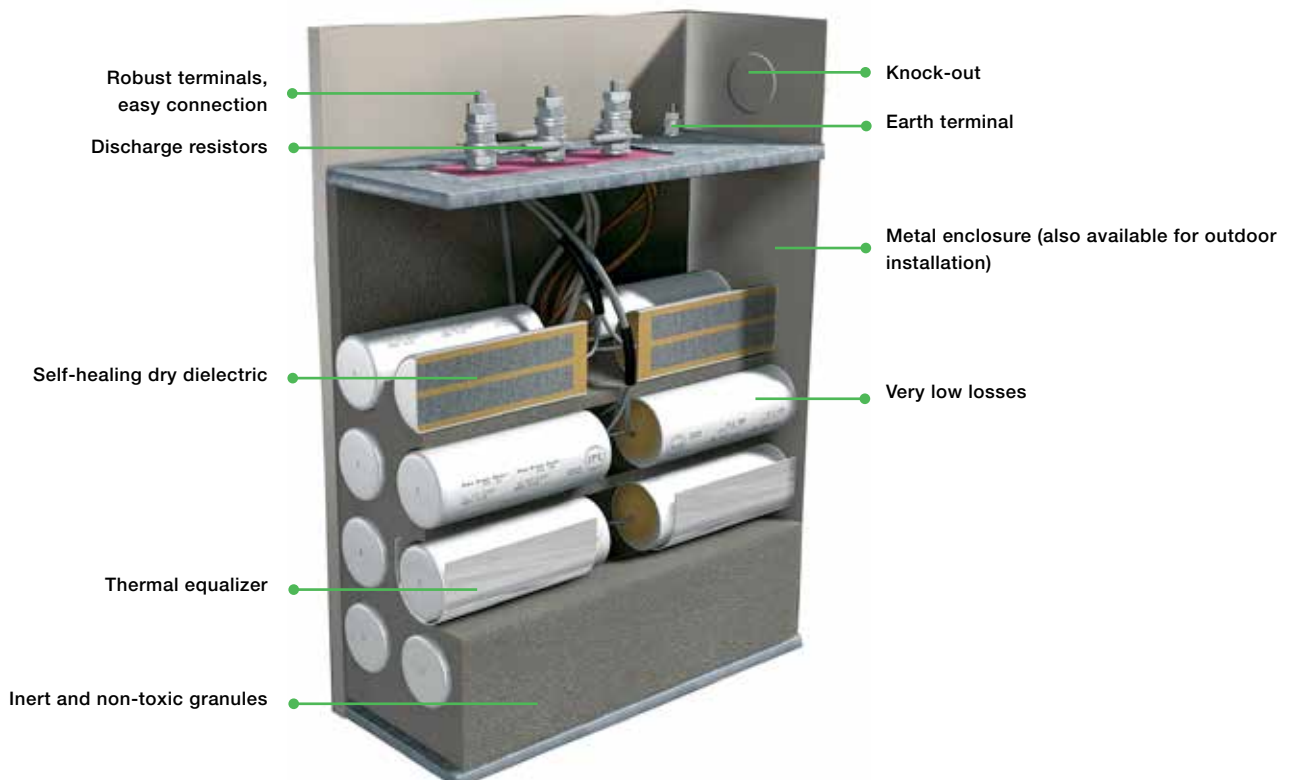
Thermal equalizers are fitted to surround each capacitor element and provide effective heat dissipation. The CLMD capacitor is equipped with discharge resistors.

ISO 9001

Our ISO 9001 Quality System registration provides the strongest assurance of our product quality.

ISO 14001

The CLMD capacitor has a dry type dielectric and is free from liquids or other impregnating agents. It has been designed for environmentally friendly manufacturing. Our ISO 14001 certification guarantees our commitment to the environment.



A comprehensive range

CLMD 43, 53, 63 & 83

The CLMD capacitor unit is designed in such a way to give the highest level of reliability, safety, performance and power all in a robust and compact fashion.



Modular - CLMD 13

The CLMD 13 is designed to make an easy parallel connection of capacitor units.



The CLMD 13 is the ideal basic unit for a modular system.



Compact - CLMD 33S

The CLMD 33S is intended for use in capacitor banks.

It offers high power density and small dimensions.



Technical specifications

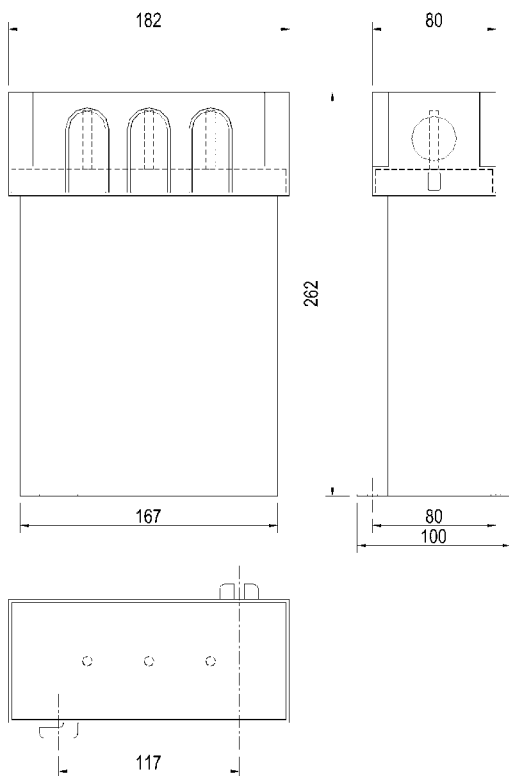
Voltage range	From 220 to 1000 V.
Frequency	50 and 60 Hz.
Connection	Three-phase as standard construction (single-phase on request).
Net output power	From 3.3 to 120 kvar.
Tolerance on capacitance	0 % + 10 %.
Losses (discharge resistors included)	< 0.5 Watt/kvar for 380 V rated voltage and above.
Discharge resistors	Permanently connected built-in discharge resistors are sized to ensure safe discharge of the capacitor to less than 50V in 1 minute after a switch off. Minimum time between disconnection and re-energization: 40 seconds.
Maximum permissible current	1.3 x In for continuous operation.
Tolerance on voltage	30% for maximum 1 minute (according to IEC 60831).
Case material	Zinc electroplated mild steel.
Color	Beige RAL 7032.
Fixing	CLMD13: with two slots, diameter 6.5 mm (suitable fixing for assembly in module). CLMD33S: with eight fixation holes, diameter 5.4 mm. CLMD43-53-63-83: with two slots 26 X 12 mm.
Weight	CLMD13: approximately 2.5 kg. CLMD33 and CLMD33S: approximately 3.5 kg. CLMD43: approximately 6 kg. CLMD53: approximately 11 kg. CLMD63: approximately 15 kg. CLMD83: approximately 23 kg.
Terminals	CLMD13: three M6 terminals. CLMD33S: three cable outputs (6, 10, 16 mm ²), 50 cm long. CLMD43-53-63-83: with threaded rods M6, 8, 10 or 12 according to the power of the capacitor.
Minimum distance between units	CLMD13-33S: 20 mm (25 mm for units > 30 kvar). CLMD43-53-63-83: 50 mm.
Minimum distance between units and wall	CLMD13-33 : 20 mm (25 mm for units > 30 kvar). CLMD43-53-63-83: 50 mm.
Earth	CLMD13-33S: earth connection on the enclosure fixation. CLMD43-53-63-83: a M8 terminal is included under the cover.
Execution	Indoor (outdoor on request).
Maximum ambient temperature	Class „D“ (+55°C) according to IEC 60831.
Minimum ambient temperature	Indoor type: -25°C. Outdoor type: -40°C.
Altitude	Up to 1000 m
Protection	CLMD13-43-53-63-83: IP 42 (IP 54 on request). CLMD33S: IP40.
Cable input	By a knock out: CLMD13: 22.5 mm. CLMD43-53: 37 mm. CLMD63-83: 47 mm.
Voltage test	Between terminals: 2.15 Un for 10 seconds. Between terminals and earth: 3 kV for 10 seconds for UN < 500 V and 4 kV for 10 seconds for UN > 500 V.
Lightning impulse voltage test	CLMD13-43-53-63-83: 15kV. CLMD33S: 8kV.
The acceptable overloads are those specified in IEC 60831-1&2	Overvoltage tolerance: 10% max. at intervals. Overcurrent tolerance: 30% permanently. Maximum overload: stable operation at 135% of the nominal rating (generated by overvoltages and harmonics).

Important: the installation of capacitors on networks disturbed by harmonics may require special precautions, especially when there is a risk of resonance.

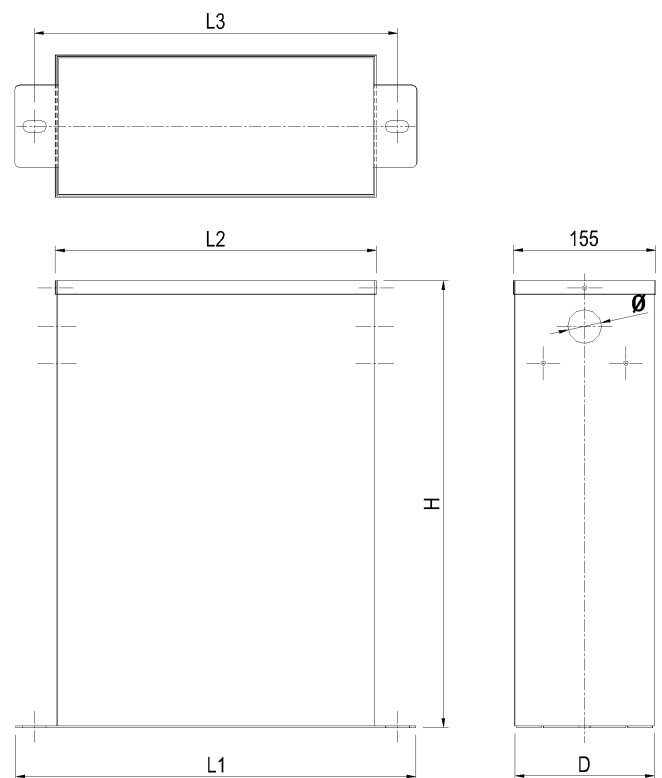
Dimensions

Type	H (mm)	L1 (mm)	L2 (mm)	L3 (mm)	D	Δ (mm)
CLMD 43	275	266	180	226	152	37
CLMD 53	310	436	350	396	152	37
CLMD 63	485	436	350	396	152	47
CLMD 83	670	436	350	396	152	47

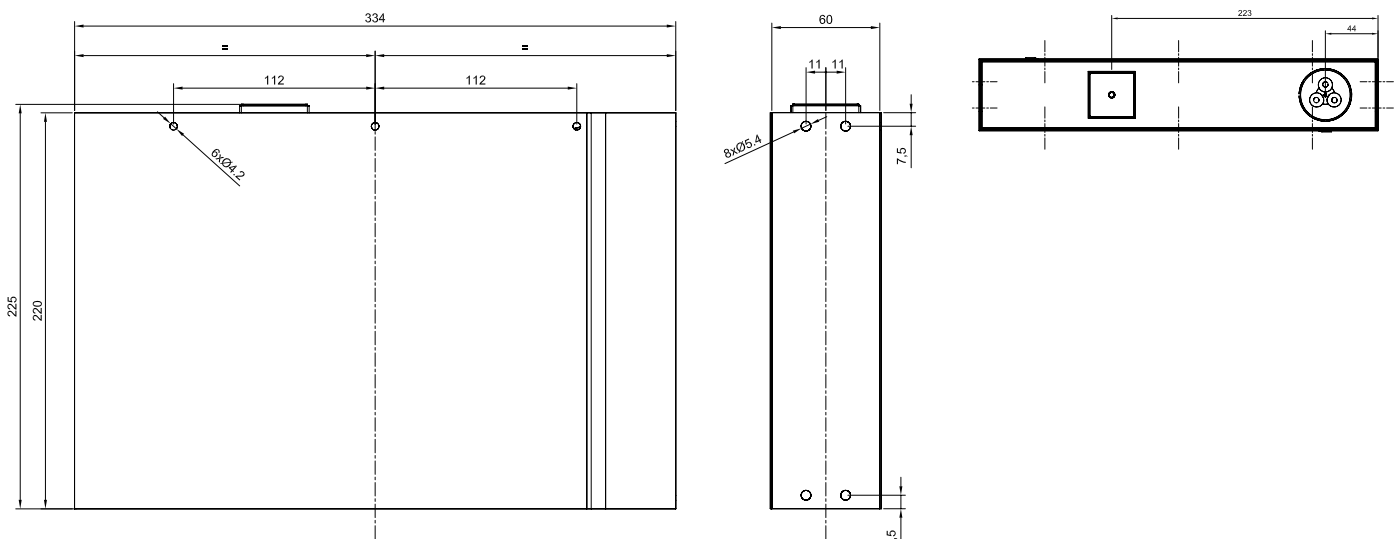
CLMD 13



CLMD 43, 53, 63 & 83



CLMD 33S



Range - 50 Hz

Network Voltage	Type	Power (KVAr)	SKU
220	CLMD 13	5,5	50220005500BR
	CLMD 43	11	50220011000BR
380	CLMD 13	10	50380010000BR
	CLMD 13	12,5	50380012500BR
	CLMD 13	15	50380015000BR
	CLMD33S	25	2002589077BR
	CLMD 43	20	50380020000BR
	CLMD 43	25	50380025000BR
	CLMD 53	42	50380042000BR
400	CLMD 53	50	50380050000BR
	CLMD 43	25	50400020000BR
	CLMD 53	35	50400035000BR
440	CLMD 53	50	50400050000BR
	CLMD 13	5	50440005000BR
	CLMD 13	10	50440010000BR
	CLMD 43	25	50440025000BR
	CLMD 53	50	60440050000BR
480	CLMD 83	100	50440100000BR
	CLMD 43	20	50480020000BR
	CLMD 53	40	50480040000BR
	CLMD 53	50	50480050000BR
	CLMD 83	80	50480080000BR
505	CLMD 83	100	50480100000BR
	CLMD 13	10	50505010000BR
	CLMD 43	20	50505020000BR
	CLMD 53	40	50505040000BR
	CLMD 63	80	50505080000BR
	CLMD 83	100	50505100000BR

**If you need a CLMD with specific configuration
please contact us**

Range - 60 Hz

Network Voltage	Type	Power (KVAr)	SKU
220	CLMD 13	1,5	60220001500BR
220	CLMD 13	2,5	60220002500BR
220	CLMD 13	5	60220005000BR
220	CLMD 13	7,5	60220007500BR
220	CLMD33S	2,1	2003089115BR
220	CLMD33S	3,3	2003089073BR
220	CLMD33S	4,2	2003089074BR
220	CLMD33S	5	2003089075BR
220	CLMD33S	6,3	2003089103BR
220	CLMD33S	10	2003089105BR
220	CLMD33S	12,5	2003089106BR
220	CLMD 43	10	60220010000BR
220	CLMD 43	12,5	60220012500BR
220	CLMD 43	15	60220015000BR
220	CLMD 53	20	60220020000BR
220	CLMD 53	25	60220025000BR
220	CLMD 53	30	60220030000BR
220	CLMD 53	35	60220035000BR
220	CLMD 63	40	60220040000BR
220	CLMD 63	45	60220045000BR
220	CLMD 63	50	60220050000BR
260	CLMD 43	30	50260030000BR
260	CLMD 53	15	60260015000BR
380	CLMD 13	1,5	60380001500BR
380	CLMD 13	2,5	60380002500BR
380	CLMD 13	5	60380005000BR
380	CLMD 13	7,5	60380007500BR
380	CLMD 13	10	60380010000BR
380	CLMD 13	12,5	60380012500BR
380	CLMD 13	15	60380015000BR
380	CLMD33S	4	2003089122BR
380	CLMD33S	6,3	2003089115BR
380	CLMD33S	10	2003089073BR
380	CLMD33S	12,5	2003089074BR
380	CLMD33S	15	2003089075BR
380	CLMD33S	20	2003089076BR
380	CLMD33S	25	2003089077BR
380	CLMD 43	20	60380020000BR
380	CLMD 43	25	60380025000BR

Network Voltage	Type	Power (KVAr)	SKU
380	CLMD 53	30	60380030000BR
380	CLMD 53	35	60380035000BR
380	CLMD 53	40	60380040000BR
380	CLMD 53	45	60380045000BR
380	CLMD 53	50	60380050000BR
380	CLMD 63	55	60380055000BR
380	CLMD 63	60	60380060000BR
380	CLMD 63	65	60380065000BR
380	CLMD 63	70	60380070000BR
380	CLMD 63	75	60380075000BR
380	CLMD 83	80	60380080000BR
380	CLMD 83	85	60380085000BR
380	CLMD 83	90	60380090000BR
380	CLMD 83	95	60380095000BR
380	CLMD 83	100	60380100000BR
440	CLMD 13	2	60440002000BR
440	CLMD 13	3,5	60440003500BR
440	CLMD 13	5	60440005000BR
440	CLMD 13	7,5	60440007500BR
440	CLMD 13	10	60440010000BR
440	CLMD 13	12,5	60440012500BR
440	CLMD 13	15	60440015000BR
440	CLMD33S	5,4	2003089122BR
440	CLMD33S	8,4	2003089115BR
440	CLMD33S	10,5	2003089116BR
440	CLMD33S	12,5	2003089117BR
440	CLMD33S	16,7	2003089118BR
440	CLMD33S	21	2003089119BR
440	CLMD33S	25	2003089114BR
440	CLMD 43	20	60440020000BR
440	CLMD 43	25	60440025000BR
440	CLMD 43	30	60440030000BR
440	CLMD 53	35	60440035000BR
440	CLMD 53	40	60440040000BR
440	CLMD 53	45	60440045000BR
440	CLMD 53	50	60440050000BR
440	CLMD 63	55	60440055000BR
440	CLMD 63	60	60440060000BR
440	CLMD 63	65	60440065000BR

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Range - 60 Hz

Network Voltage	Type	Power (KVA)	SKU
440	CLMD 63	70	60440070000BR
440	CLMD 63	75	60440075000BR
440	CLMD 83	80	60440080000BR
440	CLMD 83	85	60440085000BR
440	CLMD 83	90	60440090000BR
440	CLMD 83	95	60440095000BR
440	CLMD 83	100	60440100000BR
460	CLMD 13	2,5	60460002500BR
460	CLMD 13	5	60460005000BR
460	CLMD 13	7,5	60460007500BR
460	CLMD 13	14	60460014000BR
460	CLMD33S	9,1	2003089115BR
460	CLMD33S	11,5	2003089116BR
460	CLMD33S	13,8	2003089117BR
460	CLMD33S	18,4	2003089118BR
460	CLMD33S	23	2003089119BR
460	CLMD 43	10	60460010000BR
460	CLMD 43	12,5	60460012500BR
460	CLMD 43	15	60460015000BR
460	CLMD 43	20	60460020000BR
460	CLMD 43	25	60460025000BR
460	CLMD 53	30	60460030000BR
460	CLMD 53	35	60460035000BR
460	CLMD 53	40	60460040000BR
460	CLMD 53	45	60460045000BR
460	CLMD 63	50	60460050000BR
460	CLMD 63	55	60460055000BR
460	CLMD 63	60	60460060000BR
460	CLMD 63	65	60460065000BR
460	CLMD 63	70	60460070000BR
460	CLMD 83	75	60460075000BR
460	CLMD 83	80	60460080000BR
460	CLMD 83	85	60460085000BR
460	CLMD 83	90	60460090000BR
460	CLMD 83	95	60460095000BR
460	CLMD 83	100	60460100000BR
480	CLMD 13	2,5	60480002500BR
480	CLMD 13	5	60480005000BR
480	CLMD 13	7,5	60480007500BR

Network Voltage	Type	Power (KVA)	SKU
480	CLMD 13	10	60480010000BR
480	CLMD 13	12,5	60480012500BR
480	CLMD 13	15	60480015000BR
480	CLMD33S	6,4	2003089122BR
480	CLMD33S	10	2003089115BR
480	CLMD33S	12,5	2003089116BR
480	CLMD33S	15	2003089117BR
480	CLMD33S	20	2003089118BR
480	CLMD33S	25	2003089119BR
480	CLMD 43	20	60480020000BR
480	CLMD 43	25	60480025000BR
480	CLMD 53	30	60480030000BR
480	CLMD 53	35	60480035000BR
480	CLMD 53	40	60480040000BR
480	CLMD 53	45	60480045000BR
480	CLMD 53	50	60480050000BR
480	CLMD 63	55	60480055000BR
480	CLMD 63	60	60480060000BR
480	CLMD 63	65	60480065000BR
480	CLMD 63	70	60480070000BR
480	CLMD 63	75	60480075000BR
480	CLMD 83	80	60480080000BR
480	CLMD 83	85	60480085000BR
480	CLMD 83	90	60480090000BR
480	CLMD 83	95	60480095000BR
480	CLMD 83	100	60480100000BR
525	CLMD 13	3	60525003000BR
525	CLMD 13	5	60525005000BR
525	CLMD 13	7,5	60525007500BR
525	CLMD 13	10	60525010000BR
525	CLMD 13	12,5	60525012500BR
525	CLMD 13	15	60525015000BR
525	CLMD33S	7,7	2003089122BR
525	CLMD33S	9,6	2003089123BR
525	CLMD33S	15,3	2003089124BR
525	CLMD33S	19,1	2003089125BR
525	CLMD 43	20	60525020000BR
525	CLMD 43	25	60525025000BR
525	CLMD 43	30	60525030000BR

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Range - 60 Hz

Network

Voltage	Type	Power (KVAr)	SKU
525	CLMD 53	35	60525035000BR
525	CLMD 53	40	60525040000BR
525	CLMD 53	45	60525045000BR
525	CLMD 63	50	60525050000BR
525	CLMD 63	55	60525055000BR
525	CLMD 63	60	60525060000BR
525	CLMD 63	65	60525065000BR
525	CLMD 63	70	60525070000BR
525	CLMD 63	75	60525075000BR
525	CLMD 63	80	60525080000BR
525	CLMD 83	85	60525085000BR
525	CLMD 83	90	60525090000BR
525	CLMD 83	95	60525095000BR
525	CLMD 83	100	60525100000BR
525	CLMD 83	120	60525120000BR
600	CLMD 53	25	60600025000BR
600	CLMD 83	90	60600090000BR
600	CLMD 83	90	60600090000BR
600	CLMD 83	75	60600075000BR
600	CLMD 83	95	60600095000BR
600	CLMD 83	100	60600100000BR
690	CLMD 43	25	60690025000BR
690	CLMD 53	40	60690040000BR
690	CLMD 63	55	60690055000BR
690	CLMD 63	50	60690050000BR
690	CLMD 83	75	60690075000BR
690	CLMD 83	100	60690100000BR
690	CLMD 83	105,8	60690105800BR

If you need a CLMD with specific configuration
please contact us

Contact us

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