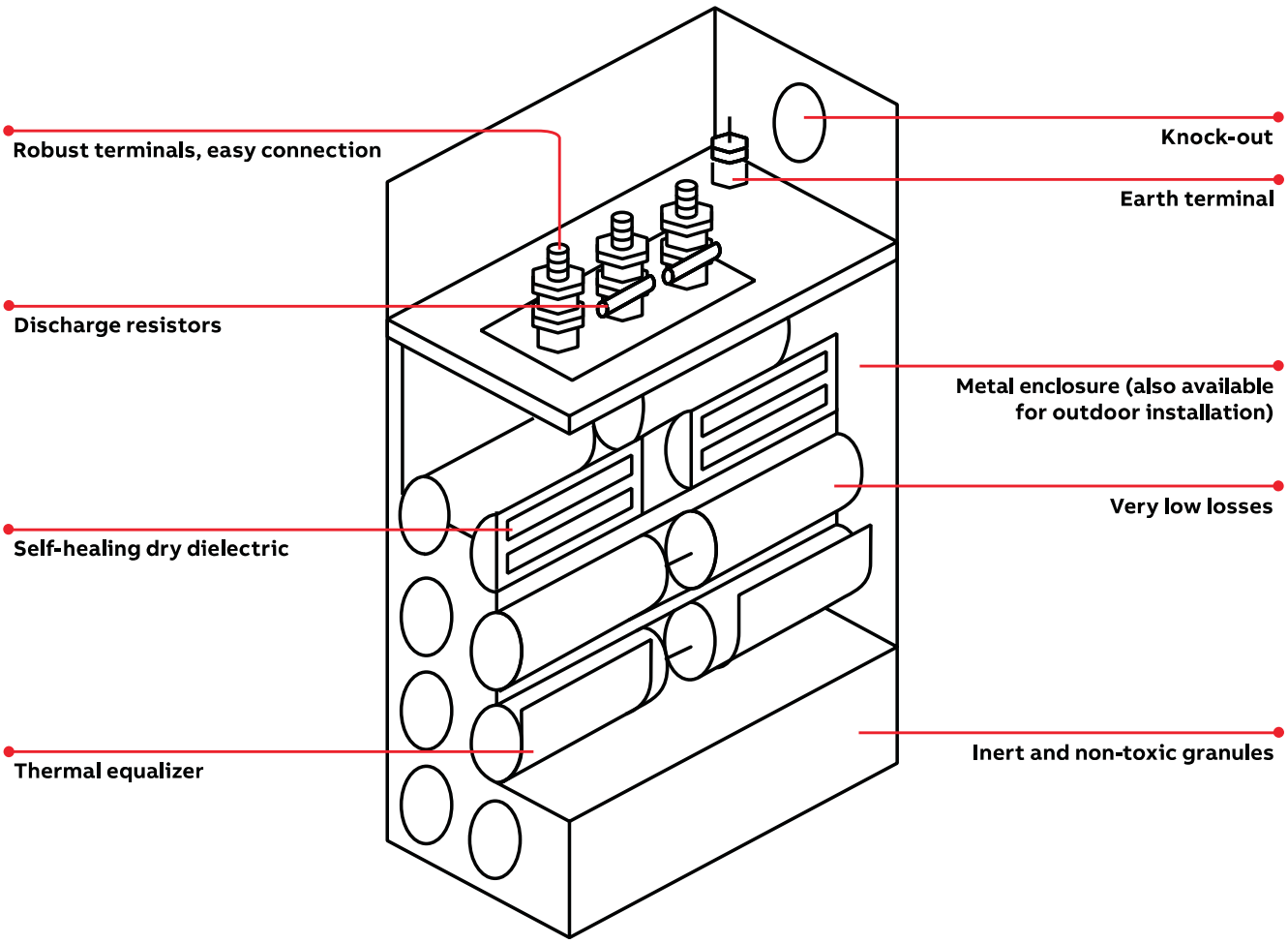
PRODUCT BROCHURE

Capacitors Products
Low Voltage

LV Capacitor CLMD
from 200 V to 1000 V



Features and benefits

Design
The building block of each CLMD capacitor unit is a capacitor winding. These windings undergo vacuum treatment to ensure consistent electrical characteristics. Each winding is then placed in a plastic case and encapsulated in thermo-setting resin in order to obtain a perfectly sealed element. Elements are combined together to form the capacitor unit.

Electrical charateristics
Dielectric losses are less than 0.2 watt per kvar. Total losses including discharge resistors, are less than 0.5 watt per kvar.

Avaiable for single and 3-phase systems
The elements are placed inside a box made of sheet steel and connected in such a way as to supply the single or 3-phase power at the required voltage and frequency.

Safe performance throughout the capacitor's life

- The dry type dielectric makes the CLMD capacitors leakage free, minimizing the impact on the environment.
- The sheet steel box is filled with vermiculite which is an inorganic, inert and fireproof material that can absorb the energy produced or extinguish any flames in case of a possible defect at the end of an element's life.
- In the event of a fault developing in the dielectric of the capacitor, the metallized electrode adjacent to the fault is immediately vaporized, thus insolating the fault. The capacitor then continues normal operation. This is commonly called 'self-healing' principle.
- The capacitor windings are provided with a sequential disconnector ensuring that each element can be reliably and selectively disconnected from the circuit at the end of its life.
- CLMD capacitors are provided the thermal equalizers to ensure effective heat dissipation.
- The use of robust terminals minimizes the risk of damage during installation and reduce maintenance requirements.
- The capacitors comply with the requirements of IEC 60831-1 & 2.

High performance in-house metallized film

ABB's completely integrated manufacturing process has resulted in the development of a special high-performance in-house metallized film from which all CLMD capacitors benefit. This film gives high breakdown strength, excellent peak current handling capability, and high capacitance stability and has an optimal self-healing design and a long life.

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.

01

02

03

04

01
CLMD 43

02
CLMD 53

03
CLMD 63

04
CLMD 83

Technical specifications

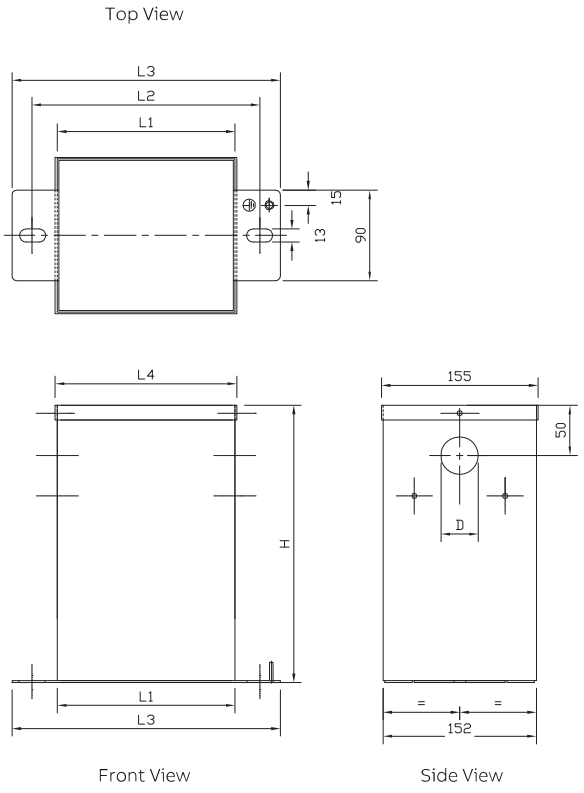
Standard	IEC 60831-1&2
Rated voltage	200 V to 1000 V
Connection	3-phase (single-phase on request)
Rated frequency	50 and 60 Hz
Type	Self-healing, dry
Dielectric	Polypropylene (metallized)
Execution	Indoor (outdoor on request)
Overvoltage	1.1 U_N at intervals
Overcurrent	1.3 I_N
Maximum overload	1.35 times of nominal rating (IEEE Std.18-2002)
Maximum inrush current	200 I_N
Safety protection	Internal fuse within each element
Tolerance on capacitance	-5/+10%
Temperature category	-25/D according to IEC 60831
Losses	Dielectric losses <0.2 w/kvar Total <0.5 w/kvar (discharge resistor included)
Degree of protection	IP42 (IP54 on request)
Voltage test	Between terminals 2.15 U_N for 10 seconds Between terminals and earth 3 kV for 10 seconds
Insulation level	3/15 kV
Discharge device	Internal discharge resistors
Discharge time	<50 V in 1 minute
Minimum distance between unit	50 mm
Minimum distance between unit and wall	50 mm
Earth terminal	M8 is included
Important notice	The installation of capacitors on networks disturbed by harmonic may require special precautions especially when there is a risk of resonance Our offer is valid under normal operating conditions only (according to IEC 60831) Minimum time to reconnect capacitors to the supply is 40 seconds Torque for terminal: M6 : 3Nm, M8 : 6Nm, M10 : 10Nm, M12 : 15.5Nm

Dimensions

01
CLMD 43

02
CLMD 53,
63 and 83

Type	H (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	D (mm)
CLMD 43	275	176	226	266	180	37
CLMD 53	310	346	396	436	350	37
CLMD 63	485	346	396	436	350	47
CLMD 83	670	346	396	436	350	47



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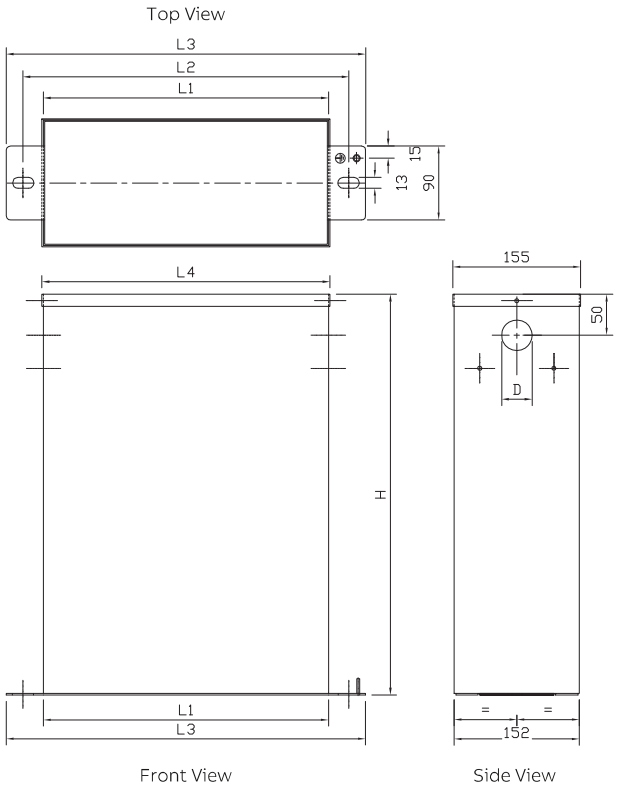

02

Selection table

Type	Rating (kvar)	Rating (kvar)	Capacitance per phase (uF)	I_N (A)	I_N (A)	Terminal	Weight (kg)
	230 V			**230 V**			
CLMD 43	8		160	20.1		M6	4
	16		321	40.2		M6	5
CLMD 53	24		481	60.2		M8	10
CLMD 63	32		642	80.3		M10	12
	40		802	100.4		M10	14
	48		963	120.5		M12	15.5
	56		1123	140.6		M12	17
	64		1284	160.7		M12	18
	400 V	**415 V**		**400 V**	**415 V**		
CLMD 43	5	5.5	33	7.2	7.7	M6	4.5
	10	11	66	14.4	15.3	M6	4.5
	15	16	99	21.7	22.3	M6	4.5
	20	22	133	28.9	30.6	M6	5.5
	25	27	166	36.1	37.6	M6	5.5
CLMD 53	30	32	199	43.3	44.5	M8	8
	40	43	265	57.7	59.8	M8	10
	45	50	298	65.0	69.6	M8	12
CLMD 63	50	54	332	72.2	75.1	M10	13.5
	60	65	398	86.6	90.4	M10	14.5
	70	75	464	101.0	104.3	M10	15.5
	75	80	497	108.3	111.3	M12	16
	80	86	531	115.5	119.6	M12	17
CLMD 83	100	110	663	144.3	153.0	M12	21
	500 V	**525 V**		**500 V**	**525 V**		
CLMD 43	9	10	38	10.4	11.0	M6	4
	18	20	76	20.8	22.0	M6	6.5
CLMD 53	27	30	115	31.2	33.0	M8	8
	36	40	153	41.6	44.0	M8	12
CLMD 63	45	50	191	52.0	55.0	M10	14
	54	60	229	62.4	66.0	M10	15
	63	70	267	72.7	77.0	M10	17
	72	80	306	83.1	88.0	M10	19
CLMD 83	81	90	344	93.5	99.0	M12	21
	90	100	382	103.9	110.0	M12	22.5
	110	120	467	127.0	132.0	M12	24