

# Type CDLC Carboncap High-Power Axial-Terminal Ultracapacitors

## Large Cylindrical Type



These leading edge, low RC time constant, organic electrolyte, large cell ultracapacitors easily handle more than a million duty cycles and assemble readily into modules with screw terminals. They are especially suited for back-up and pulse power applications such as grid stabilization and wind turbine pitch control. They also excel in transportation applications like automotive subsystems, rail system power and utility vehicles.

### Highlights

- Maximum Power Performance. Up to 3000 Farads
- Very Low ESR Characteristics
- Available with Threaded Terminations

### Specifications

Operating Temperature Range	-40 °C to +65 °C
Storage Temperature Range	-40 °C to +70 °C
Rated Voltage Range	2.7 Vdc, 2.85 Vdc rated surge
Capacitance Range	100 F to 600 F
Capacitance Tolerance	-5% / +10%
Life at Room Temperature	10 years at rated voltage and 25 °C Capacitance change ≤20% ESR change ≤100%
Life Test	1000 h @ rated voltage and +65 °C Capacitance change ≤20% decrease from min. initial value ESR change ≤100% increase from max. initial value
Cycle Test	500,000 cycles (rated to half rated voltage at +25 °C) Capacitance change ≤20% ESR change ≤100%
Shelf Life	1000 h without voltage at +70 °C Capacitance change ≤20% from min. initial capacitance ESR change ≤100% from max. initial ESR
<b>RoHS Compliant</b>	

### Ratings

Part Number	CDLC122P2R7K04	CDLC152P2R7K04	CDLC202P2R7K04	CDLC302P2R7K04
Terminal Configuration	Threaded	Threaded	Threaded	Threaded
<b>Capacitance (F)</b> (Discharge w constant current at 25°C)	1200	1500	2000	3000
<b>ESR, DC (mΩ), Max</b>	0.58	0.47	0.35	0.29
<b>Current - Max Peak (A)</b> (1 s discharge rate to 50% of rated Voltage)	1000	1200	1600	2200
<b>Leakage current (mA), Max</b> after 72 h at +25 °C	2.7	3.0	4.2	5.2
<b>Usable Power Density, Pd (W/kg)</b> (Per IEC 62391-2)	5800	6600	6900	5900
<b>Usable Power (W)</b>	1508	1848	2484	3009
<b>Impedance match power, (W/kg)</b>	12,000	14,000	14,000	12,000
<b>Gravimetric energy density, Emax (Wh/kg)</b>	4.69	5.43	5.64	5.96
<b>Energy available (Wh)</b> (At rated voltage)	1.22	1.52	2.03	3.04
<b>Weight (kg)</b>	0.26	0.28	0.36	0.51
<b>Maximum Continuous Current (Arms)</b> (ΔT=15°C)	70	84	110	130
<b>Short circuit current (A)</b>	4700	5700	7700	9300

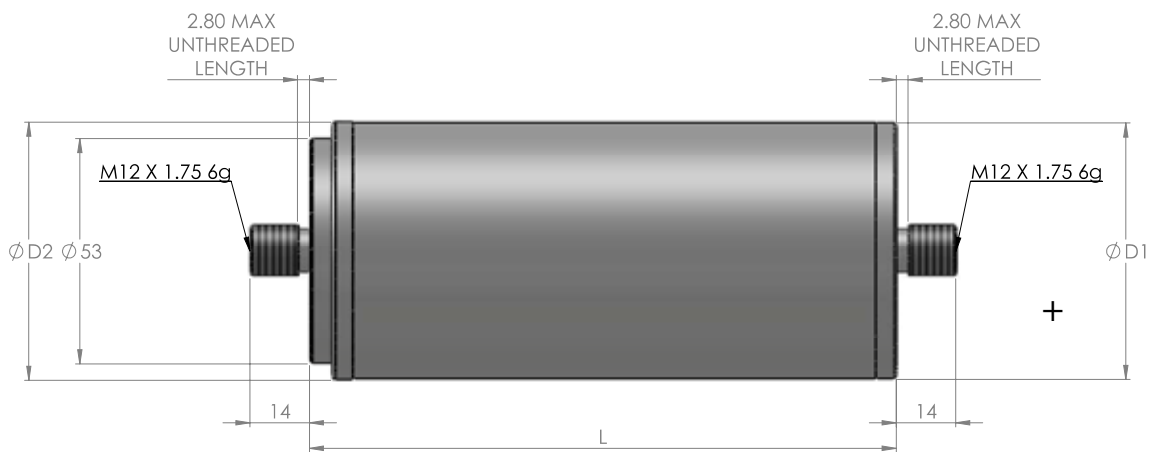
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### Part Numbering System

<b>CDLC</b>   <b>Type</b>	<b>302</b>   <b>Capacitance</b> (F)	<b>P</b>   <b>Tolerance</b> (%)	<b>2R7</b>   <b>Voltage</b> (V)	<b>K04</b>   <b>Configuration</b>
CDLC - Carbon Double Layer Cell	<b>302 = 3000</b>	<b>P = -0% / +20%</b>	<b>2R7 = 2.7</b>	<b>K04 = Threaded studs</b>

### Outline Drawing and Dimensions



Stud Mount Type Part Description	Dimensions (mm)		
	L (±0.3mm)	D1 (±0.2mm)	D2 (±0.7mm)
<b>CDLC122P2R7K04</b>	74	60.4	60.7
<b>CDLC152P2R7K04</b>	85	60.4	60.7
<b>CDLC202P2R7K04</b>	102	60.4	60.7
<b>CDLC302P2R7K04</b>	138	60.4	60.7

Do not reverse polarity.  
Certified to UL810a, File # MH48530.

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