

High Voltage Ceramic Capacitors



HP/HW/HK Type – Strontium-based Dielectric

FEATURES

- Excellent behavior on pulse and fast discharge conditions
- Excellent capacitance vs voltage characteristic
- Low dissipation factor
- Very low Corona effect
- Coated and uncoated devices available

APPLICATIONS

- High-voltage supply for gas lasers
- High-voltage dividers
- Marx generators
- Power generators
- High-voltage power supply
- High-voltage coupling devices
- Power line coupling system for Internet & Telecom

TECHNOLOGY

- **HP** range: Coated capacitor with fixtures
- **HW** range: Uncoated capacitor with fixtures
- **HK** range: Uncoated capacitor without fixtures
- Fixtures: M5
- Marking: on each part: type – capacitance – rated voltage
- Delivery mode: bulk in carton box
- Dielectric Type II: N4700 class (see typical curves page 13)



DIELECTRIC CHARACTERISTICS

TPC code	E
Dielectric class (DIN)	N4700
Operating temperature range (°C)	-30/+85°C
Capacitance change with temperature (%)	+22/-33%
Typical dielectric constant	1850
Dielectric strength kV _{DC} /mm	8.0
Dissipation factor (1kHz/1V _{RMS} /20°C)	20.10 ⁻⁴
Insulation resistance (1000V _D /20°C/60s)	>100GΩ

ELECTRICAL CHARACTERISTICS

Rated voltage (V _R)	15 to 100 kVdc*
Test voltage (V _E) (50Hz, in oil, 60s)	12 to 80 kVrms
Operating Temperature ranges	-30 +85°C
Temperature characteristic	N4700
Dissipation factor (20°C, 1kHz, 1V _{RMS})	<20.10 ⁻⁴
Insulation resistance (1000Vdc/60s)	>100GΩ
Capacitance range (20°C – 1kHz – 1V _{RMS})	195pF to 5600pF
Tolerance	Standard: ±20% On request: ±10%
Self-inductance	L _S ≤ 30nH

*up to 150kVdc: upon request

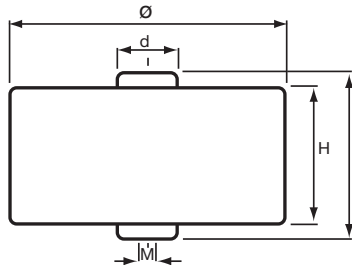
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HP/HW/HK Type – Strontium-based Dielectric

HP RANGE: COATED DEVICES WITH FIXTURES

REFERENCES – VOLTAGE AND CAPACITANCE RANGE



All fixtures: M5
(0.197)

Part Number	Rated Voltage kVdc	Rated Voltage kVrms	Test Voltage kVrms	Corona Inception Voltage (kVrms) (<10pc)	Capacitance ±20% (pF) ±10% on request	Dimensions millimeters (inches)				Packaging Unit
						Ø ± 1	d	L ± 1	H ± 2	
HP30EX0561M --	15	10	12	6	560	28 (1.100)	12 (0.472)	22 (0.866)	16 (0.630)	40
HP30EX0751M --					750	28 (1.100)	12 (0.472)			40
HP30EX0102M --					1000	28 (1.100)	12 (0.472)			40
HP40EX0152M --					1500	38 (1.500)	12 (0.472)			40
HP40EX0182M --					1800	38 (1.500)	12 (0.472)			40
HP40EX0202M --					2000	38 (1.500)	12 (0.472)			40
HP50EX0252M --					2500	48 (1.900)	12 (0.472)			45
HP50EX0272M --					2700	48 (1.900)	12 (0.472)			45
HP50EX0332M --					3300	48 (1.900)	12 (0.472)			45
HP60EX0372M --					3700	58 (2.283)	15 (0.591)			20
HP60EX0402M --					4000	58 (2.283)	15 (0.591)			20
HP60EX0502M --					5000	58 (2.283)	15 (0.591)			20
HP60EX0562M --					5600	58 (2.283)	15 (0.591)			20
HP30EY0501M --	20	15	18	9	500	28 (1.100)	12 (0.472)	24 (0.945)	18 (0.709)	40
HP30EY0561M --					560	28 (1.100)	12 (0.472)			40
HP30EY0751M --					750	28 (1.100)	12 (0.472)			40
HP40EY0102M --					1000	38 (1.500)	12 (0.472)			40
HP40EY0132M --					1300	38 (1.500)	12 (0.472)			40
HP40EY0152M --					1500	38 (1.500)	12 (0.472)			40
HP50EY0202M --					2000	48 (1.900)	12 (0.472)			45
HP50EY0222M --					2200	48 (1.900)	12 (0.472)			45
HP50EY0252M --					2500	48 (1.900)	12 (0.472)			45
HP60EY0302M --					3000	58 (2.283)	15 (0.591)			20
HP60EY0332M --					3300	58 (2.283)	15 (0.591)			20
HP60EY0372M --					3700	58 (2.283)	15 (0.591)			20
HP60EY0402M --					4000	58 (2.283)	15 (0.591)			20
HP30E30561M --	30	20	24	12	560	28 (1.100)	12 (0.472)	26 (1.024)	20 (0.787)	40
HP40E30821M --					820	38 (1.500)	12 (0.472)			40
HP40E30102M --					1000	38 (1.500)	12 (0.472)			40
HP40E31121M --					1120	38 (1.500)	12 (0.472)			40
HP50E30152M --					1500	48 (1.900)	12 (0.472)			45
HP50E30172M --					1700	48 (1.900)	12 (0.472)			45
HP50E30202M --					2000	48 (1.900)	12 (0.472)			45
HP60E30272M --					2700	58 (2.283)	15 (0.591)			20
HP60E30302M --					3000	58 (2.283)	15 (0.591)			20
HP60E30332M --					3300	58 (2.283)	15 (0.591)			20
HP30E40391M --	40	28	33	17	390	28 (1.100)	12 (0.472)	30 (1.180)	24 (0.945)	40
HP40E40751M --					750	38 (1.500)	12 (0.472)			40
HP50E40102M --					1000	48 (1.900)	12 (0.472)			30
HP50E40142M --					1400	48 (1.900)	12 (0.472)			30
HP60E40172M --					1700	58 (2.283)	15 (0.591)			20
HP60E40202M --					2000	58 (2.283)	15 (0.591)			20
HP60E40242M --					2400	58 (2.283)	15 (0.591)			20

-Other tolerance on capacitance value: please consult us

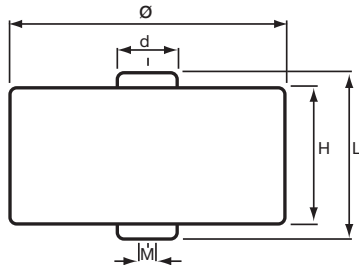
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HP/HW/HK Type – Strontium-based Dielectric

HP RANGE: COATED DEVICES WITH FIXTURES

REFERENCES – VOLTAGE AND CAPACITANCE RANGE



All fixtures: M5
(0.197)

Part Number	Rated Voltage kVdc	Rated Voltage kVrms	Test Voltage kVrms	Corona Inception Voltage (kVrms) (<10pc)	Capacitance ±20% (pF) ±10% on request	Dimensions millimeters (inches)				Packaging Unit
						Ø ± 1	d	L ± 1	H ± 2	
HP30E50281M --	50	35	42	21	280	28 (1.100)	12 (0.472)	37 (1.457)	31 (1.221)	X
HP40E50411M --					410	38 (1.500)	12 (0.472)			
HP40E50501M --					500	38 (1.500)	12 (0.472)			
HP40E50561M --					560	38 (1.500)	12 (0.472)			
HP50E50751M --					750	48 (1.900)	12 (0.472)			
HP50E50851M --					850	48 (1.900)	12 (0.472)			
HP50E50102M --					1000	48 (1.900)	12 (0.472)			
HP60E51351M --					1350	58 (2.283)	15 (0.591)			
HP60E50152M --					1500	58 (2.283)	15 (0.591)			
HP60E51651M --					1650	58 (2.283)	15 (0.591)			
HP30E61950M --	60	42	50	25	195	28 (1.100)	12 (0.472)	45 (1.772)	39 (1.536)	X
HP40E63750M --					375	38 (1.500)	12 (0.472)			
HP50E60501M --					500	48 (1.900)	12 (0.472)			
HP50E60701M --					700	48 (1.900)	12 (0.472)			
HP60E60851M --					850	58 (2.283)	15 (0.591)			
HP60E60102M --					1000	58 (2.283)	15 (0.591)			
HP60E60122M --					1200	58 (2.283)	15 (0.591)			
HP50E90501M --	100	70	80	40	500	48 (1.900)	12 (0.472)	58.5 (2.303)	53 (2.087)	15
HP60E96750M --					675	58 (2.283)	15 (0.591)			10
HP60E90751M --					750	58 (2.283)	15 (0.591)			10
HP60E98250M --					825	58 (2.283)	15 (0.591)			10

X = open request
-Other tolerance on capacitance value: please consult us

High Voltage Ceramic Capacitors

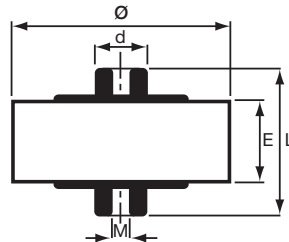


HP/HW/HK Type – Strontium-based Dielectric

HW RANGE: UNCOATED DEVICES WITH FIXTURES

REFERENCES – VOLTAGE AND CAPACITANCE RANGE

Handling of uncoated devices must be done under strict cleanliness conditions.



All fixtures: M5
(0.197)

Part Number	Rated Voltage (kVdc)	Rated Voltage (kVrms)	Test Voltage (kVrms)*	Corona Inception Voltage (kVrms) (<12pC)*	Capacitance ±20% (pF) ±10% on request	Dimensions millimeters (inches)			Packaging Unit
						Ø ± 2	L ± 1	E ± 2	
HW30EX0561M --	15	10	12	6	560	17 (0.670)	22 (0.866)	6 (0.236)	40
HW30EX0751M --					750	18 (0.719)			40
HW30EX0102M --					1000	21 (0.827)			40
HW40EX0152M --					1500	26 (1.024)			40
HW40EX0182M --					1800	28 (1.103)			40
HW40EX0202M --					2000	29 (1.142)			60
HW50EX0252M --					2500	34 (1.339)			45
HW50EX0272M --					2700	35 (1.378)			45
HW50EX0332M --					3300	38 (1.496)			45
HW60EX0372M --					3700	41 (1.614)			30
HW60EX0402M --					4000	43 (1.692)			30
HW60EX0502M --					5000	47 (1.850)			30
HW60EX0562M --					5600	49 (1.929)			30
HW30EY0501M --	20	15	18	9	500	17 (0.670)	24 (0.945)	8 (0.314)	40
HW30EY0561M --					560	18 (0.719)			40
HW30EY0751M --					750	21 (0.827)			40
HW40EY0102M --					1000	26 (1.024)			40
HW40EY0132M --					1300	28 (1.103)			40
HW40EY0152M --					1500	29 (1.142)			40
HW50EY0202M --					2000	34 (1.339)			45
HW50EY0222M --					2200	35 (1.378)			45
HW50EY0252M --					2500	38 (1.496)			45
HW60EY0302M --					3000	41 (1.614)			20
HW60EY0332M --					3300	43 (1.692)			20
HW60EY0372M --					3700	47 (1.850)			20
HW60EY0402M --					4000	49 (1.929)			20
HW30E30561M --	30	20	24	12	560	21 (0.827)	26 (1.024)	10 (0.394)	40
HW40E30821M --					820	26 (1.024)			40
HW40E30102M --					1000	28 (1.103)			40
HW40E31121M --					1120	29 (1.142)			40
HW50E30152M --					1500	34 (1.339)			45
HW50E30172M --					1700	35 (1.378)			45
HW50E30202M --					2000	38 (1.496)			45
HW60E30272M --					2700	43 (1.692)			20
HW60E30302M --					3000	47 (1.850)			20
HW60E30332M --					3300	49 (1.929)			20
HW30E40391M --	40	28	33	17	390	21 (0.827)	30 (1.180)	14 (0.552)	40
HW40E40751M --					750	28 (1.103)			40
HW50E40102M --					1000	34 (1.339)			30
HW50E40142M --					1400	38 (1.496)			30
HW60E40172M --					1700	41 (1.614)			20
HW60E40202M --					2000	47 (1.850)			20
HW60E40242M --					2400	49 (1.929)			20

*tested in oil or Galden

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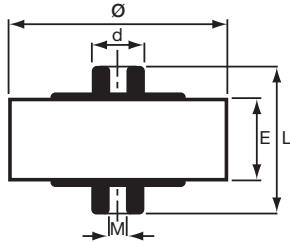


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HW RANGE: UNCOATED DEVICES WITH FIXTURES

REFERENCES – VOLTAGE AND CAPACITANCE RANGE

Handling of uncoated devices must be done under strict cleanliness conditions.



All fixtures: M5
(0.197)

Part Number	Rated Voltage (kVdc)	Rated Voltage (kVrms)	Test Voltage (kVrms)*	Corona Inception Voltage (kVrms) (<12pC)*	Capacitance ±20% (pF) ±10% on request	Dimensions millimeters (inches)			Packaging Unit
						Ø ± 2	L ± 1	E ± 2	
HW30E50281M --	50	35	42	21	280	21 (0.827)	37 (1.457)	21 (0.827)	X
HW40E50411M --					410	26 (1.024)			
HW40E50501M --					500	28 (1.103)			
HW40E50561M --					560	29 (1.142)			
HW50E50751M --					750	34 (1.339)			
HW50E50851M --					850	35 (1.378)			
HW50E50102M --					1000	38 (1.496)			
HW60E51351M --					1350	43 (1.692)			
HW60E50152M --	60	42	50	25	1500	47 (1.850)	45 (1.772)	29 (1.142)	X
HW60E51651M --					1650	49 (1.929)			
HW30E61950M --					195	21 (0.827)			
HW40E63750M --					375	28 (1.024)			
HW50E60501M --					500	34 (1.339)			
HW50E60701M --					700	38 (1.496)			
HW60E60851M --					850	41 (1.614)			
HW60E60102M --					1000	47 (1.850)			
HW60E60122M --	100	70	80	40	1200	49 (1.929)	58.5 (2.303)	43 (1.693)	15
HW50E90501M --					500	38 (1.496)			10
HW60E96750M --					675	43 (1.693)			10
HW60E90751M --					750	47 (1.850)			10
HW60E98250M --					825	49 (1.929)			10

NEW

*tested in oil or Galden
X = open request
-Other tolerance on capacitance value: please consult us

High Voltage Ceramic Capacitors

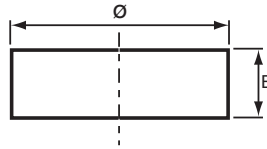


HP/HW/HK Type – Strontium-based Dielectric

HK RANGE: UNCOATED DEVICES WITHOUT FIXTURES

REFERENCES – VOLTAGE AND CAPACITANCE RANGE

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Part Number	Rated Voltage (kVdc)	Rated Voltage (kVrms)	Test Voltage (kVrms)*	Corona Inception Voltage (kVrms) (<12pC)*	Capacitance ±20% (pF) ±10% on request	Dimensions millimeters (inches)	
						Ø ± 2	E ± 2
HK30EX0561M -- HK30EX0751M -- HK30EX0102M -- HK40EX0152M -- HK40EX0182M -- HK40EX0202M -- HK50EX0252M -- HK50EX0272M -- HK50EX0332M -- HK60EX0372M -- HK60EX0402M -- HK60EX0502M -- HK60EX0562M --	15	10	12	6	560 750 1000 1500 1800 2000 2500 2700 3300 3700 4000 5000 5600	17 (0.670) 18 (0.719) 21 (0.827) 26 (1.024) 28 (1.103) 29 (1.142) 34 (1.339) 35 (1.378) 38 (1.496) 41 (1.614) 43 (1.692) 47 (1.850) 49 (1.929)	6 (0.236)
HK30EY0501M -- HK30EY0561M -- HK30EY0751M -- HK40EY0102M -- HK40EY0132M -- HK40EY0152M -- HK50EY0202M -- HK50EY0222M -- HK50EY0252M -- HK60EY0302M -- HK60EY0302M -- HK60EY0372M -- HK60EY0402M --					500 560 750 1000 1300 1500 2000 2200 2500 3000 3300 3700 4000	17 (0.670) 18 (0.719) 21 (0.827) 26 (1.024) 28 (1.103) 29 (1.142) 34 (1.339) 35 (1.378) 38 (1.496) 41 (1.614) 43 (1.692) 47 (1.850) 49 (1.929)	
HK30E30561M -- HK40E30821M -- HK40E30102M -- HK40E31121M -- HK50E30152M -- HK50E30172M -- HK50E30202M -- HK60E30272M -- HK60E30302M -- HK60E30332M --					560 820 1000 1120 1500 1700 2000 2700 3000 3300	21 (0.827) 26 (1.024) 28 (1.103) 29 (1.142) 34 (1.339) 35 (1.378) 38 (1.496) 43 (1.692) 47 (1.850) 49 (1.929)	
HK30E40391M -- HK40E40721M -- HK50E40102M -- HK50E40142M -- HK60E40172M -- HK60E40202M -- HK60E40242M --					390 720 1000 1400 1700 2000 2400	21 (0.827) 28 (1.103) 34 (1.339) 38 (1.496) 41 (1.614) 47 (1.850) 49 (1.929)	

NEW

*tested in oil or Galden

-Other tolerance on capacitance value: please consult us

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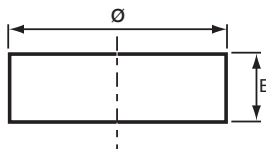


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						Ø ± 2	E ± 2
HK30E50281M - -	50	35	42	21	280	21 (0.827)	21 (0.827)
HK40E50411M - -					410	26 (1.024)	
HK40E50501M - -					500	28 (1.103)	
HK40E50561M - -					560	29 (1.142)	
HK50E50751M - -					750	34 (1.339)	
HK50E50851M - -					850	35 (1.378)	
HK50E50102M - -					1000	38 (1.496)	
HK60E51351M - -					1350	43 (1.692)	
HK60E50152M - -					1500	47 (1.850)	
HK60E51651M - -					1650	49 (1.929)	
HK30E61950M - -	60	42	50	25	195	21 (0.827)	29 (1.142)
HK40E63750M - -					375	28 (1.024)	
HK50E60501M - -					500	34 (1.339)	
HK50E60701M - -					700	38 (1.496)	
HK60E60851M - -					850	41 (1.614)	
HK60E60102M - -					1000	47 (1.850)	
HK60E60122M - -					1200	49 (1.929)	
HK50E90501M - -	100	70	80	40	500	38 (1.496)	43 (1.693)
HK60E96750M - -					675	43 (1.693)	
HK60E90751M - -					750	47 (1.850)	
HK60E98250M - -					825	49 (1.929)	

*tested in oil or Galden

-Other tolerance on capacitance value: please consult us