ITALY FACON Since 1946

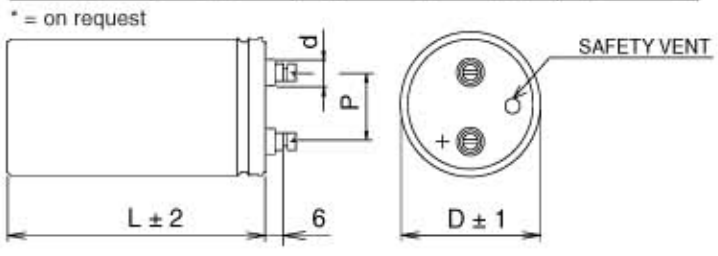
UNI EN ISO 9001 CSQ CERTIFIED QUALITY N. 9170.FACO

TYPE 1.93-95

Professional electrolytic capacitors High capacitance - Reduced volume Long life -40 +85°C - Specially for MEDICAL equipments.

D mm.	P mm.	L mm.			d mm.	
35	12.7	54	82	102	8	
50	22.2	82	102		13	8*
64	28.6	102	143*		13	8*
76	31.8	102	143	216	13	8*

* = on request



Capac. type 1.93 - Capac. type 1.95 - Nylon nut - Stainless steel clamp with 2 fixing points for capacitors D = 35 mm. Stainless steel clamp with 3 fixing points for capacitors D > 35 mm.

Applications

Computer grade capacitors for very high CV uses; specially built for special application such as MEDICAL equipment.

Manufacturing

Cylindrical aluminium case with PVC insulating sleeve - sealing cover in self - extinguishing resin with screw terminals M5 for capacitors D ≤ 76 mm. - Fixing stud: M8 x 12 mm. for capacitors D = 35 mm., M12 x 16 mm. for capacitors D ≥ 50 mm.

Technical characteristics

Reference standard	IEC 384-4 - DIN 41240 - CECC 30300
Climatic category	-40/ +85/ 56 (-40/ +85°C) according to IEC 68 - 1for VR.≤450 V -40/ +70/ 56 (-40/ +70°C)for VR.=500 V
Capacitance category	± 20%
Surge voltage	1.1 VR (VR = Rated voltage)
Superimposed alternating voltage	1.5 V.
Leakage current (If) in µA after 5' at VR. DC. (C in µF)	≤ 0.3 µA . (Cr/µF . VR/V)$^{0.7}$ + 4µA
Ripple current (Ir) at 85°C and 100 Hz	as shown in table A

Ripple current (Ir) between +25 and +85 °C, 100Hz Multiply the listed values at 85 °C by the factors shown at side	θ	25 ÷ 40°C	50°C	60°C	70°C	80°C	85°C
	factor X	2.4	2.1	1.75	1.4	1.15	1.0

Ripple current (Ir) Vs the frequency f. Multiply the listed values at 85 °C by the factors shown at side	VR.DC.	50 Hz	100 Hz	400 Hz	800 Hz	≥ 1000 Hz
	≤ 100V	0.9	1	1.15	1.18	1.20
	> 100V	0.95	1	1.15	1.25	1.30

Max r.m.s. current on the screw terminals	25 A for D ≤ 50 mm. 40 A for D > 50 mm.
Vibrations resistance - duration 3 x 2h (CEI - 68)	frequency 10 ÷ 55 HZ - amplitude 0.75 mm. max. acceleration 10 g
Insulating sleeve test between terminals and mounted Al. hardware at 25°C	2000 V 50 HZ for 1 minute; insulation resistance 100 MΩ

Service life

Life test - Standard endurance test at 85 °C and VR.	according to IEC 384-4 LONG LIFE: 2.000 h		
Expected life at VR and permissible value of Ir	θ	VR ≤ 100V	VR > 100V
	40 °C	> 300.000 h	~ 150.000 h
	85 °C	~ 5.000 h	~ 2.000 h
Failure rate (N. or failures per component and time unit)	≤ 100 fit (≤ 100.10^{-9}/h)		

Other characteristic: see table A, enclosure 1/7 A and 2/7 A

Please, inquire for information about other characteristics or particular applications.

FACON S.p.A. MANUFACTURING OF ELECTRICAL CAPACITORS
Via Molini Trotti, 13 - 21100 Varese - Italy Tel. 39/(0)332/282300 - Telex 380378 Provex I for FACON - Telefax 39/(0)332/282705
http://www.Facon.com

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TYPE 1.93-95

TABLE A

Rated voltage **VR.DC. 250 V** — 19*47 a b

C. µ F.	D	L	ESR typ 100 HZ m Ω	ESR max 100 HZ m Ω	Z max 10 KHZ m Ω	Ir max 100 HZ 85°C-A	part a CODE** part b
470	35	54	213	288	120	2,4	00470
680	35	82	147	199	102	3,4	00680
1000	35	102	100	135	70	4,6	01000
1500	50	82	67	90	54	6,3	01500
2200	50	102	56	75	45	7,6	02200
3300	64	102	37	50	33	10,8	03300
4700	76	102	26	35	25	14,3	04700
6800	76	102	18	24	17	17,2	06800
10000	76	143	16	21	15	20,8	10000
12000	76	143	16	21	15	20,8	12000
15000	76	143	13	18	13	22,8	15000
22000	76	216	11	15	10	29,9	22000

Rated voltage **VR.DC. 360 V** — 19*58 a b

C. µ F.	D	L	ESR typ 100 HZ m Ω	ESR max 100 HZ m Ω	Z max 10 KHZ m Ω	Ir max 100 HZ 85°C-A	part a CODE** part b
220	35	54	420	566	292	1,7	00220
330	35	54	280	378	195	2,1	00330
470	35	82	196	265	137	3,0	00470
680	35	102	136	183	95	3,9	00680
1000	50	82	92	125	75	5,4	01000
1500	50	102	62	83	50	7,2	01500
2200	64	102	42	57	38	10,1	02200
3300	76	102	28	38	27	13,8	03300
4700	76	143	27	37	26	15,9	02200
5600	76	143	23	31	22	17,4	05600
6000	76	143	21	29	20	18,0	06000
6800	76	143	19	25	18	19,2	06800
8200	76	143	16	21	15	21,0	08200
10000	76	143	13	17	12	23,2	10000
10000	76	216	13	17	12	27,6	10001
11000	76	143	14	20	14	21,8	11000
12000	76	216	11	14	10	30,2	12000
15000	76	216	10	14	13	30,9	15000

Rated voltage **VR.DC. 400 V** — 19*65 a b

C. µ F.	D	L	ESR typ 100 HZ m Ω	ESR max 100 HZ m Ω	Z max 10 KHZ m Ω	Ir max 100 HZ 85°C-A	part a CODE** part b
150	35	54	637	859	443	1,4	00150
220	35	54	434	586	302	1,7	00220
330	35	82	289	391	201	2,5	00330
470	35	102	203	274	141	3,2	00470
680	50	82	140	190	114	4,4	00680
1000	50	102	95	129	78	5,8	01000
1500	64	102	67	90	60	8,0	01500
2200	64	102	52	70	47	9,1	02200
3300	76	143	37	50	35	13,6	03300
4700	76	143	26	36	25	16,1	04700
5600	76	143	23	31	22	17,4	05600
6800	76	143	21	28	20	18,1	06800
10000	76	216	15	20	14	25,3	10000
11000	76	216	16	21	15	26,1	11000

Rated voltage **VR.DC. 450 V** — 19*70 a b

C. µ F.	D	L	ESR typ 100 HZ m Ω	ESR max 100 HZ m Ω	Z max 10 KHZ m Ω	Ir max 100 HZ 85°C-A	part a CODE** part b
150	35	54	955	1289	653	1,1	00150
220	35	82	651	879	445	1,6	00220
330	35	82	434	586	297	2,0	00330
470	50	82	305	411	245	3,0	00470
680	50	82	211	284	169	3,6	00680
1000	50	102	143	193	115	4,7	01000
1500	64	102	95	129	86	6,7	01500
2200	76	102	65	88	62	9,1	02200
2200	76	143	65	88	62	10,3	02201
3300	76	143	43	59	50	12,6	03300
4700	76	143	34	49	35	15,9	04700
5600	76	143	28	41	29	17,4	05600
5600	76	216	28	41	29	19,8	05600
6800	76	216	23	34	24	21,3	06800

** Article code is composed by 10 numbers: first 5 numbers (a) are the same for every group of VR. DC., the second 5 (b) are listed in table. In (a) * = 3 for capacitors in normal execution, * = 5 for capacitors in execution with fixing stud.

ex: 2.200 µF / 450 VR. DC.

fixing stud execution: code = a + b = 19570.02200

Note: size 64x143 is available on request instead of size 76x102.

Varese 11/00