

Submersible Borehole Pump

# UPAchrom

4", UPAchrom 100 CC + DN 100

## Type Series Booklet



## **Legal information/Copyright**

Type Series Booklet UPAchrom

All rights reserved. The contents provided herein must neither be distributed, copied, reproduced, edited or processed for any other purpose, nor otherwise transmitted, published or made available to a third party without the manufacturer's express written consent.

Subject to technical modification without prior notice.

© KSB SE & Co. KGaA, Frankenthal 09/04/2018

**Contents**

**Water Supply..... 4**

- Submersible Borehole Pumps..... 4
  - UPAchrom 100..... 4
    - Main applications..... 4
    - Fluids handled..... 4
    - Operating data..... 4
    - Design details..... 4
    - Designation..... 5
    - Materials..... 7
    - Product benefits..... 7
    - Product information as per Regulation No. 547/2012 (for 4" and 6" water pumps) implementing "Ecodesign" Directive 2009/125/EC..... 7
    - Certifications..... 7
    - Technical data..... 9
      - General overview, 50 Hz..... 9
      - General overview, 60 Hz..... 9
      - UPAchrom 100-1 CC - 50 Hz..... 10
      - UPAchrom 100-2 CC - 50 Hz..... 12
      - UPAchrom 100-3 CC - 50 Hz..... 14
      - UPAchrom 100-5 CC - 50 Hz..... 16
      - UPAchrom 100-9 CC - 50 Hz..... 18
      - UPAchrom 100-12 CC - 50 Hz..... 21
  - Permissible cable lengths..... 23
  - Scope of supply..... 23
  - Accessories..... 24
    - Pump accessories..... 24
    - Cooling shroud made of stainless steel 1.4301..... 25
    - Automatic control units..... 25

## Water Supply

### Submersible Borehole Pumps

# UPAchrom 100



#### Main applications

- Drinking water supply
- Spray irrigation systems
- General irrigation systems
- Industry
- Pressure boosting
- Lowering groundwater levels
- Domestic water supply
- Water supply systems

#### Fluids handled

- Clean water not containing aggressive, abrasive or solid substances
- Max. permissible sand content of the fluid 50 g/m<sup>3</sup>

#### Operating data

Operating properties

Characteristic		Value
Flow rate	Q [m <sup>3</sup> /h]	≤ 18
	Q [l/min]	≤ 300
Head	H [m]	≤ 600
Fluid temperature	T [°C]	≤ +30 for continuous duty
Speed	n [rpm]	≤ 3500
Power	P <sub>N</sub> [kW]	≤ 7,5 <sup>1)</sup>
Well diameter	D [mm]	≤ 100 <sup>1)</sup>
	D ["]	≤ 4 <sup>1)</sup>

#### Design details

##### Design

- Centrifugal pump
- Multistage
- Single-entry
- Ring-section design
- Rigid connection between pump and motor

##### Connections

- Pump end with Rp 1 1/4 to Rp 2 thread
- With lift check valve

##### Impeller type

- Radial or mixed flow versions

##### Type of installation

- Vertical installation
- Horizontal installation

##### Drive

- Asynchronous motor
- Interior (buried) permanent magnet synchronous motor (IPMSM)
- With squirrel cage motor for submerged use
- Standard connection to NEMA
- Frequency 50 Hz/60 Hz
- IP68 enclosure
- Thermal class B
- DOL starting
- Frequency of starts ≤ 20 starts per hour

Single-phase AC motor:

- Rated power P<sub>N</sub> ≤ 2.2 kW
- Rated voltage V<sub>N</sub> 220 - 230 V

Three-phase motor:

- Rated power P<sub>N</sub> ≤ 7.5 kW
- Designs with additional stages and 6-inch motors of up to 18.5 kW are available for high heads.
- Rated voltage V<sub>N</sub> 380 - 400 V

##### Electrical connection

- With 1 flat motor lead 4 x 1.5 mm<sup>2</sup> (including earth conductor and internal earthing) as standard ex works
  - Cable length of 1.5 m for motors up to 1.5 kW
  - Cable length of 2.5 m for motors from 2.2 kW

##### Bearings

- Radial plain bearings
- Pump bearings lubricated by fluid handled; motor bearings lubricated by water fill
- Axial thrust is balanced by a tilting-pad thrust bearing in the motor (lower end)
- Intermediate bearing in every stage

1) Designs with additional stages and 6-inch motors of up to 18.5 kW are available for high heads.

## Designation

Designation example

Position																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
U	P	A	C	-	4	-	0	1	2	/	1	1	-	-	C	C	R	D	V	+	D	N	-	-	-	4	-	0	0	3	0	C	2	-	A	D	O	T	-

See name plate and data sheet

Designation key

Position	Code	Description
1-4	Pump type series	
	UPAchrom	UPAchrom
5-6	Pump diameter for min. well diameter	
	4	4" (approx. 100 mm)
8-10	Flow rate at best efficiency point	
	1	1 m³/h
	2	2 m³/h
	3	3 m³/h
	5	5 m³/h
	9	9 m³/h
12, 13	Number of stages	
	01	1 stage
	02	2 stages
	03	3 stages
	...	...
	91	91 stages
	A0	100 stages (A=100+0)
B0	110 stages (B=110+0)	
16	Stage/casing material	
	C	Stainless steel AISI 304
	E	Stainless steel AISI 316
17	Impeller material	
	C	Stainless steel AISI 304
	E	Stainless steel AISI 316
18	Pump end	
	R	Rp thread, Standard ISO 7-1
	D	DN flange, Standard DIN 1092
19	Diameter of pump end	
	A	1 (DN 25)
	B	1 1/4 (DN 32)
	C	1 1/2 (DN 40)
	D	2 (DN 50)
20	Lift check valve	
	O	Without lift check valve
	V	With lift check valve
	D	With lift check valve with drilled valve disc
21	Scope of supply	
	+	Pump set (pump and motor)
	-	Pump with NEMA connection
22-24	Motor	
	UMA	Submersible motor by KSB, UMA
	DN	Submersible motor by Franklin, DN (FRANKLIN)
	SVA	Submersible motor by STAIRS, DN (SAVA)
	BSN	Submersible motor with NEMA connection
25	Motor design	
	-	Asynchronous motor
	S	Interior (buried) permanent magnet synchronous motor (IPMSM)
26, 27	Motor diameter for min. well diameter	
	4	4" (approx. 100 mm)
	6	6" (approx. 150 mm)
	8	8" (approx. 200 mm)

Position	Code	Description
28	Design status for pump sets	
	-	No status
	E	Generation E
	D	Generation D
	Design status for individual motors	
	-	No status
29-32	Motor rating	
	0000	Individual motor
	0003	0,37 kW
	0005	0,55 kW
	0007	0,75 kW
	0011	1,1 kW
	...	...
	0185	18,5 kW
33	Motor material variant	
	-	Blank
	C	Stainless steel AISI 304
	D	Duplex stainless steel
	E	Stainless steel AISI 316
	G	Grey cast iron
34	Number of poles	
	-	Blank
	2	2 poles
	4	4 poles
35	Winding insulation	
	-	Blank
	1	J1 (PVC)
	2	J2 (VPE/XLPE)
36	Connection cable (F = flat, R = round)	
	-	Blank
	A	F4
	B	F3+F4
	C	R4
	D	R4+R4
	E	6R1+R1
	F	6R1+R1
	G	F3+R4
	H	F3+R1
	K	F3
37	Voltage	
	-	Blank
	A	3~, 415 V, 50 Hz
	B	3~, 500 V, 50 Hz
	C	3~, 380 V, 50 Hz
	D	3~, 400 V, 50 Hz
	E	1~, 230 V, 50 Hz
	F	3~, 230 V, 50 Hz
	G	3~, 220 V, 50 Hz
	H	3~, 690 V, 50 Hz
	I	3~, 865 V, 50 Hz
	G	3~, 1000 V, 50 Hz
	K	3~, 1000 V, 50 Hz
	L	3~, 220 V, 60 Hz
	M	3~, 230 V, 60 Hz
	N	3~, 380 V, 60 Hz
	O	3~, 440 V, 60 Hz
	P	3~, 460 V, 60 Hz
	Q	3~, 480 V, 60 Hz
	R	3~, 1000 V, 60 Hz
	S	1~, 110 V, 60 Hz

Position	Code	Description
37	T	1~, 230 V, 60 Hz
	U	1~, 254 V, 60 Hz
	V	3~, 400 V, 60 Hz
38	Motor fill	
	-	Blank
	O	Filled with oil
	W	Filled with water
	U	Unfilled
39	Drinking water certification	
	-	Blank
	T	ACS/NSF
	X	Other certification
40	Sprinkler version	
	-	Blank
	U	Pump set to VDS guideline
	X	Pump set to different guideline

## Materials

Overview of available materials

Component	Material	
	CC	EE <sup>2)</sup>
Pump shroud	AISI 304	AISI 316
Suction casing	AISI 304	AISI 316
Valve body	AISI 304	AISI 316
Shaft	AISI 431	AISI 431
Impeller	AISI 304	AISI 316
Diffuser	AISI 304	AISI 316

## Product benefits

- High operating reliability as all components are made of high-quality stainless steel.
- Optimised hydraulic design enables high efficiencies.
- High flexibility by vertical, horizontal and angular installation options
- Reliable operation by anti-jam lift check valve
- Highly flexible operating range through adjustment of motor dimensions
- Service-friendly with bearings and casing wear rings that are easy to replace

## Product information as per Regulation No. 547/2012 (for 4" and 6" water pumps) implementing "Ecodesign" Directive 2009/125/EC

- Minimum efficiency index: see data sheet
- The benchmark for the most efficient water pumps is MEI  $\geq 0.70$ .
- Year of construction: see data sheet
- Manufacturer's name or trade mark, commercial registration number and place of manufacture: see data sheet or order documentation
- Product's type and size identifier: see data sheet
- Pump performance curves, including efficiency characteristics: see documented characteristic curve
- The efficiency of a pump with a trimmed impeller is usually lower than that of a pump with full impeller diameter. Trimming of the impeller will adapt the pump

to a fixed duty point, leading to reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.

- Operation of this water pump with variable duty points may be more efficient and economic when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.
- Information on benchmark efficiency or benchmark efficiency graph for MEI = 0.70 (0.40) for the pump based on the model shown in the Figure are available at: <http://www.europump.org/efficiencycharts>

## Certifications

Overview

Label	Effective in:	Comment
	All countries	Certified quality management to ISO 9001
	France	French drinking water approval

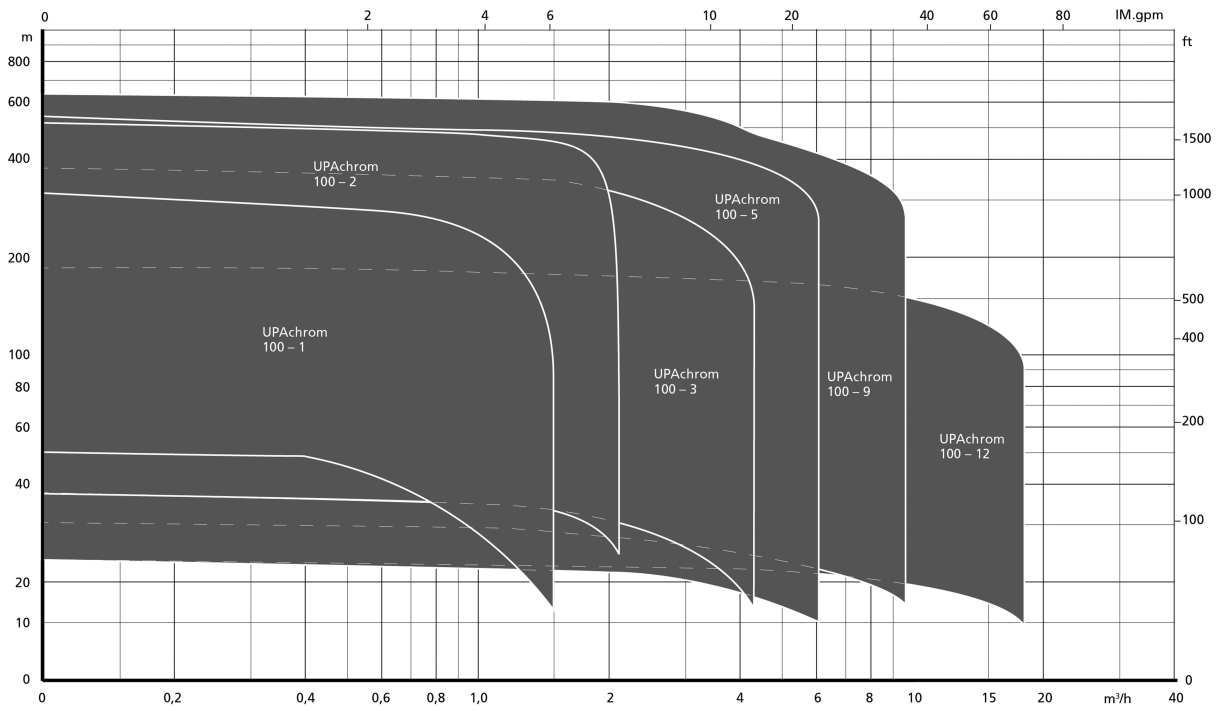
2) On request



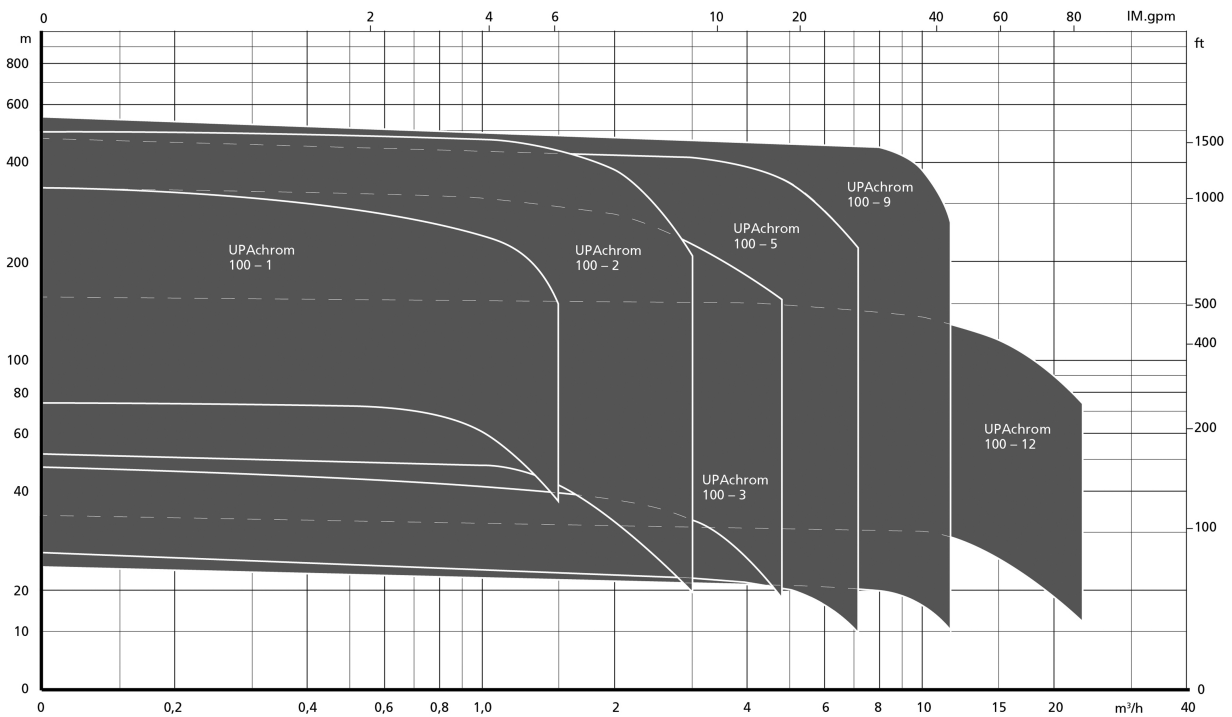


**Technical data**

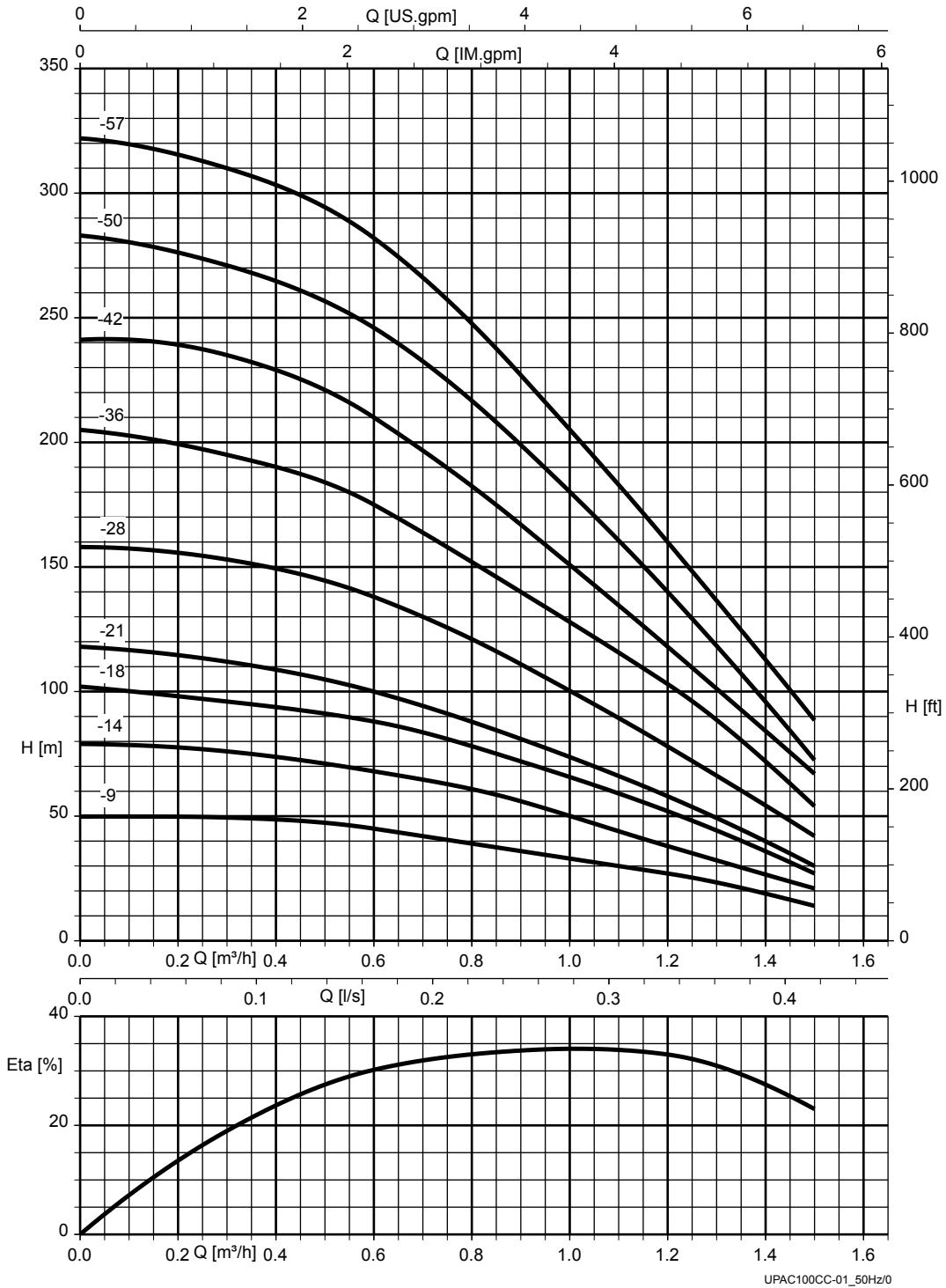
**General overview, 50 Hz**

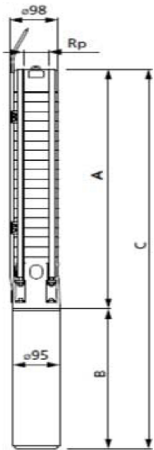


**General overview, 60 Hz**



UPAchrom 100-1 CC - 50 Hz



**Dimensions**


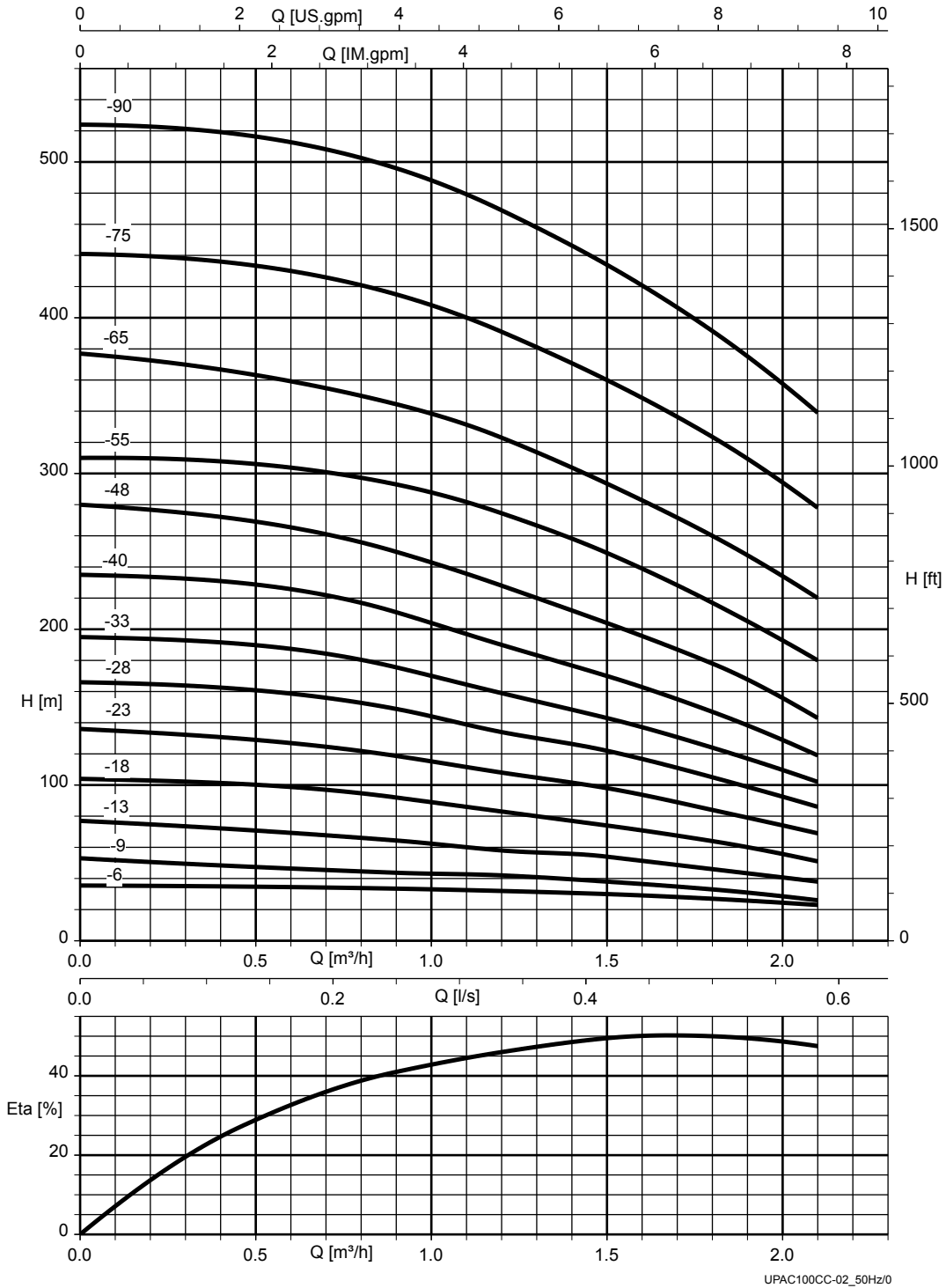
Dimensions [mm], weights [kg]

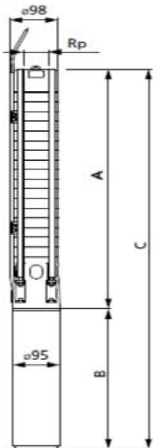
Size	Motor diam.	Rp	1-230 V					3-400 V				
			A	B	C	Mat. No.	[kg]	A	B	C	Mat. No.	[kg]
			[mm]	[mm]	[mm]			[mm]	[mm]	[mm]		
UPAchrom 100 1/9 CC	4	1 1/4	356	228	582	48257382	10,1	356	214	570	48257443	10,1
UPAchrom 100 1/14 CC	4	1 1/4	461	228	689	48257383	10,9	461	214	675	48257444	10,9
UPAchrom 100 1/18 CC	4	1 1/4	545	253	758	48257384	12,8	545	228	773	48257445	12,1
UPAchrom 100 1/21 CC	4	1 1/4	608	253	861	48257385	13,4	608	228	836	48257446	12,7
UPAchrom 100 1/28 CC	4	1 1/4	755	283	1038	48257386	15,5	755	248	1003	48257447	14,9
UPAchrom 100 1/36 CC	4	1 1/4	946	307	1253	48257387	20,4	946	283	1229	48257448	20,1
UPAchrom 100 1/42 CC	4	1 1/4	1072	339	1411	48257388	23,2	1072	307	1379	48257449	22,5
UPAchrom 100 1/50 CC	4	1 1/4	1240	339	1579	48257389	26,4	1240	307	1547	48257450	25,7
UPAchrom 100 1/57 CC	4	1 1/4	1387	437	1824	48257390	33	1387	339	1726	48257451	28,9

Rated power [kW] [hp], rated current [A]

Size	Motor rating		Rated current	
			1~230 V	3~400 V
	[kW]	[hp]	[A]	[A]
UPAchrom 100-1/9 CC	0,37	0,50	3,3	1,1
UPAchrom 100-1/14 CC	0,37	0,50	3,3	1,1
UPAchrom 100-1/18 CC	0,55	0,75	4,3	1,6
UPAchrom 100-1/21 CC	0,55	0,75	4,3	1,6
UPAchrom 100-1/28 CC	0,75	1,00	5,7	2,0
UPAchrom 100-1/36 CC	1,10	1,50	8,4	2,8
UPAchrom 100-1/42 CC	1,50	2,00	10,7	3,9
UPAchrom 100-1/50 CC	1,50	2,00	10,7	3,9
UPAchrom 100-1/57 CC	2,20	3,00	14,7	5,5

UPAchrom 100-2 CC - 50 Hz



**Dimensions**


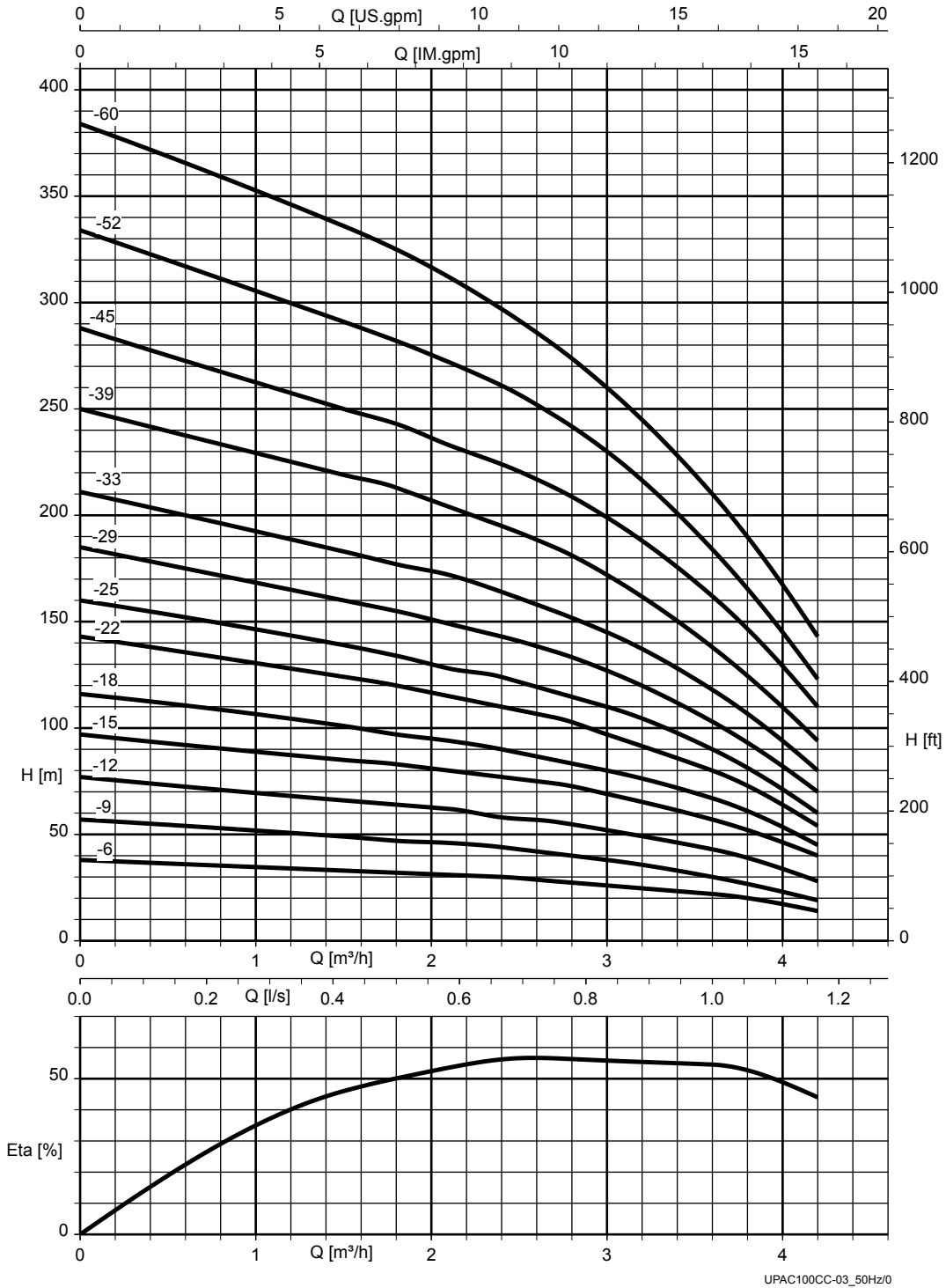
Dimensions [mm], weights [kg]

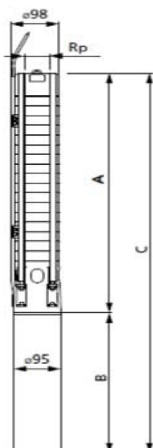
Size	Motor diam. [""]	Rp	1-230 V					3-400 V				
			A	B	C	Mat. No.	[kg]	A	B	C	Mat. No.	[kg]
			[mm]	[mm]	[mm]			[mm]	[mm]	[mm]		
UPAchrom 100 2/6 CC	4	1 1/4	293	228	521	48257391	9,2	293	214	507	48257452	9,2
UPAchrom 100 2/9 CC	4	1 1/4	356	228	584	48257392	10,2	356	214	570	48257453	10,2
UPAchrom 100 2/13 CC	4	1 1/4	440	253	693	48257393	12,2	440	228	668	48257454	11,5
UPAchrom 100 2/18 CC	4	1 1/4	545	283	828	48257394	14	545	248	793	48257455	13,4
UPAchrom 100 2/23 CC	4	1 1/4	650	307	957	48257395	16,2	650	283	933	48257456	15,9
UPAchrom 100 2/28 CC	4	1 1/4	755	339	1094	48257396	18,5	755	307	1062	48257457	17,8
UPAchrom 100 2/33 CC	4	1 1/4	883	339	1222	48257397	21,6	883	307	1190	48257458	20,9
UPAchrom 100 2/40 CC	4	1 1/4	1030	437	1467	48257398	28,2	1030	339	1369	48257459	24,1
UPAchrom 100 2/48 CC	4	1 1/4	1198	437	1635	48257399	30,2	1198	339	1537	48257460	26,1
UPAchrom 100 2/55 CC	4	1 1/4	-	-	-	-	-	1345	394	1739	48257461	33,5
UPAchrom 100 2/65 CC	4	1 1/4	-	-	-	-	-	1555	394	1949	48257462	36,3
UPAchrom 100 2/75 CC	4	1 1/4	-	-	-	-	-	2123	543	2666	48257463	42,1
UPAchrom 100 2/90 CC	4	1 1/4	-	-	-	-	-	2438	543	2981	48257464	46,3

Rated power [kW] [hp], rated current [A]

Size	Motor rating		Rated current	
	[kW]	[hp]	1~230 V	3~400 V
			[A]	[A]
UPAchrom 100 2/6 CC	0,37	0,50	3,3	1,1
UPAchrom 100 2/9 CC	0,37	0,50	3,3	1,1
UPAchrom 100 2/13 CC	0,55	0,75	4,3	1,6
UPAchrom 100 2/18 CC	0,75	1,00	5,7	2,0
UPAchrom 100 2/23 CC	1,10	1,50	8,4	2,8
UPAchrom 100 2/28 CC	1,50	2,00	10,7	3,9
UPAchrom 100 2/33 CC	1,50	2,00	10,7	3,9
UPAchrom 100 2/40 CC	2,20	3,00	14,7	5,5
UPAchrom 100 2/48 CC	2,20	3,00	14,7	5,5
UPAchrom 100 2/55 CC	3,00	4,00	-	7,5
UPAchrom 100 2/65 CC	3,00	4,00	-	7,5
UPAchrom 100 2/75 CC	4,00	5,50	-	9,9
UPAchrom 100 2/90 CC	4,00	5,50	-	9,9

UPAchrom 100-3 CC - 50 Hz



**Dimensions**


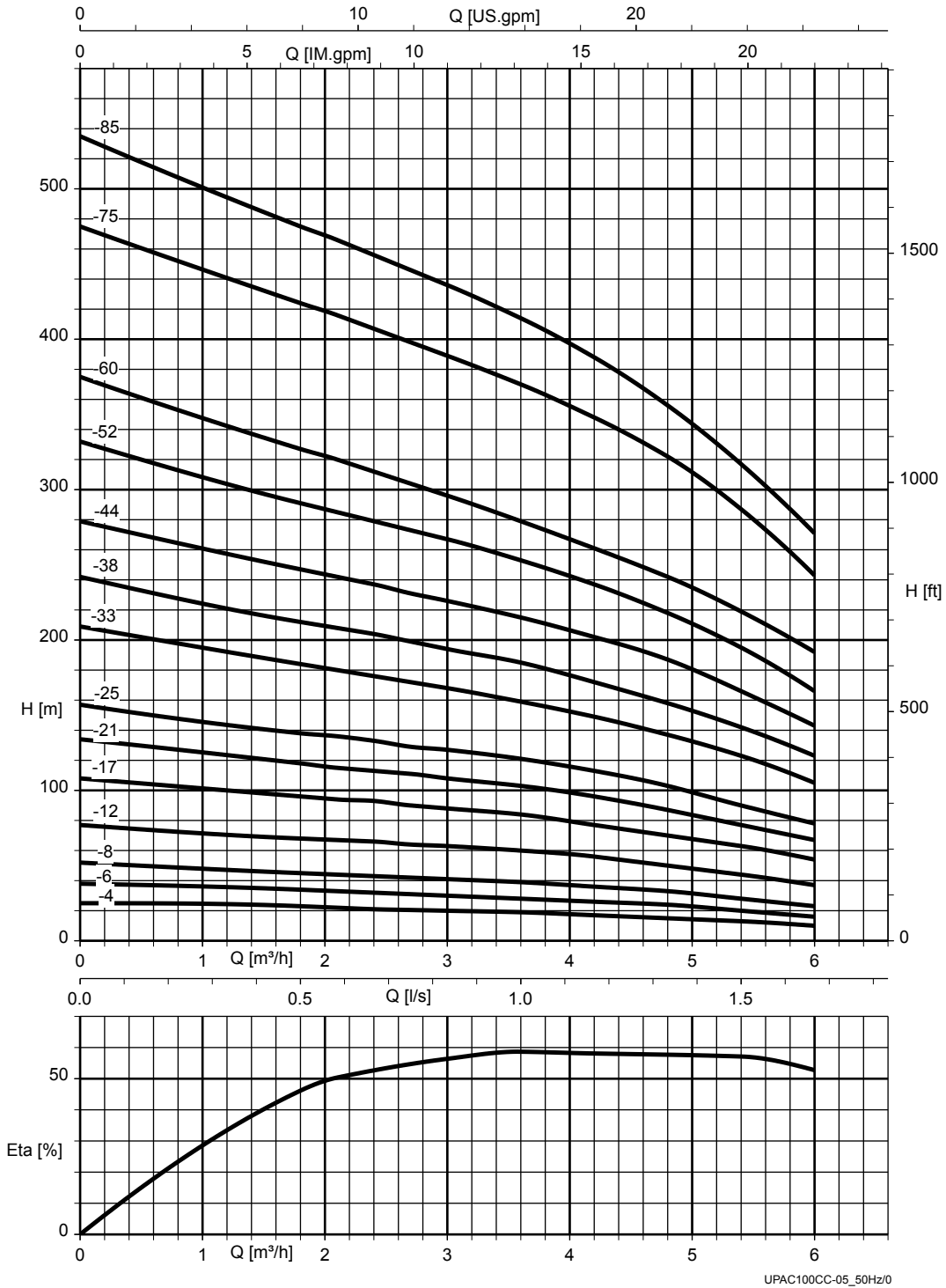
Dimensions [mm], weights [kg]

Size	Motor diam. [""]	Rp	1-230 V					3-400 V				
			A	B	C	Mat. No.	[kg]	A	B	C	Mat. No.	[kg]
			[mm]	[mm]	[mm]			[mm]	[mm]	[mm]		
UPAchrom 100 3/6 CC	4	1 1/4	293	253	546	48257404	10,8	293	228	521	48257465	10,1
UPAchrom 100 3/9 CC	4	1 1/4	356	253	609	48257405	11,4	356	228	584	48257466	10,7
UPAchrom 100 3/12 CC	4	1 1/4	419	283	702	48257406	12,9	419	248	667	48257467	12,3
UPAchrom 100 3/15 CC	4	1 1/4	482	307	789	48257407	14,7	482	283	765	48257468	14,4
UPAchrom 100 3/18 CC	4	1 1/4	545	339	884	48257408	16,6	545	307	852	48257469	15,9
UPAchrom 100 3/22 CC	4	1 1/4	629	339	968	48257409	17,4	629	307	936	48257470	16,7
UPAchrom 100 3/25 CC	4	1 1/4	692	437	1129	48257410	22,8	692	339	1031	48257471	18,7
UPAchrom 100 3/29 CC	4	1 1/4	776	437	1213	48257411	23,5	776	339	1115	48257472	19,4
UPAchrom 100 3/33 CC	4	1 1/4	883	437	1320	48257412	26,4	883	339	1222	48257473	22,3
UPAchrom 100 3/39 CC	4	1 1/4	-	-	-	-	-	1009	394	1403	48257474	28,2
UPAchrom 100 3/45 CC	4	1 1/4	-	-	-	-	-	1135	394	1529	48257475	29,7
UPAchrom 100 3/52 CC	4	1 1/4	-	-	-	-	-	1282	543	1825	48257477	34,5
UPAchrom 100 3/60 CC	4	1 1/4	-	-	-	-	-	1450	543	1993	48257478	37,7

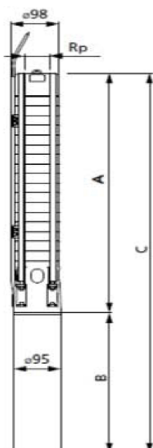
Rated power [kW] [hp], rated current [A]

Size	Motor rating		Rated current	
	[kW]	[hp]	1~230 V	3~400 V
			[A]	[A]
UPAchrom 100 3/6 CC	0,55	0,75	4,3	1,6
UPAchrom 100 3/9 CC	0,55	0,75	4,3	1,6
UPAchrom 100 3/12 CC	0,75	1,00	5,7	2,0
UPAchrom 100 3/15 CC	1,10	1,50	8,4	2,8
UPAchrom 100 3/18 CC	1,50	2,00	10,7	3,9
UPAchrom 100 3/22 CC	1,50	2,00	10,7	3,9
UPAchrom 100 3/25 CC	2,20	3,00	14,7	5,5
UPAchrom 100 3/29 CC	2,20	3,00	14,7	5,5
UPAchrom 100 3/33 CC	2,20	3,00	14,7	5,5
UPAchrom 100 3/39 CC	3,00	4,00	-	7,5
UPAchrom 100 3/45 CC	3,00	4,00	-	7,5
UPAchrom 100 3/52 CC	4,00	5,50	-	9,9
UPAchrom 100 3/60 CC	4,00	5,50	-	9,9

UPAchrom 100-5 CC - 50 Hz





**Dimensions**


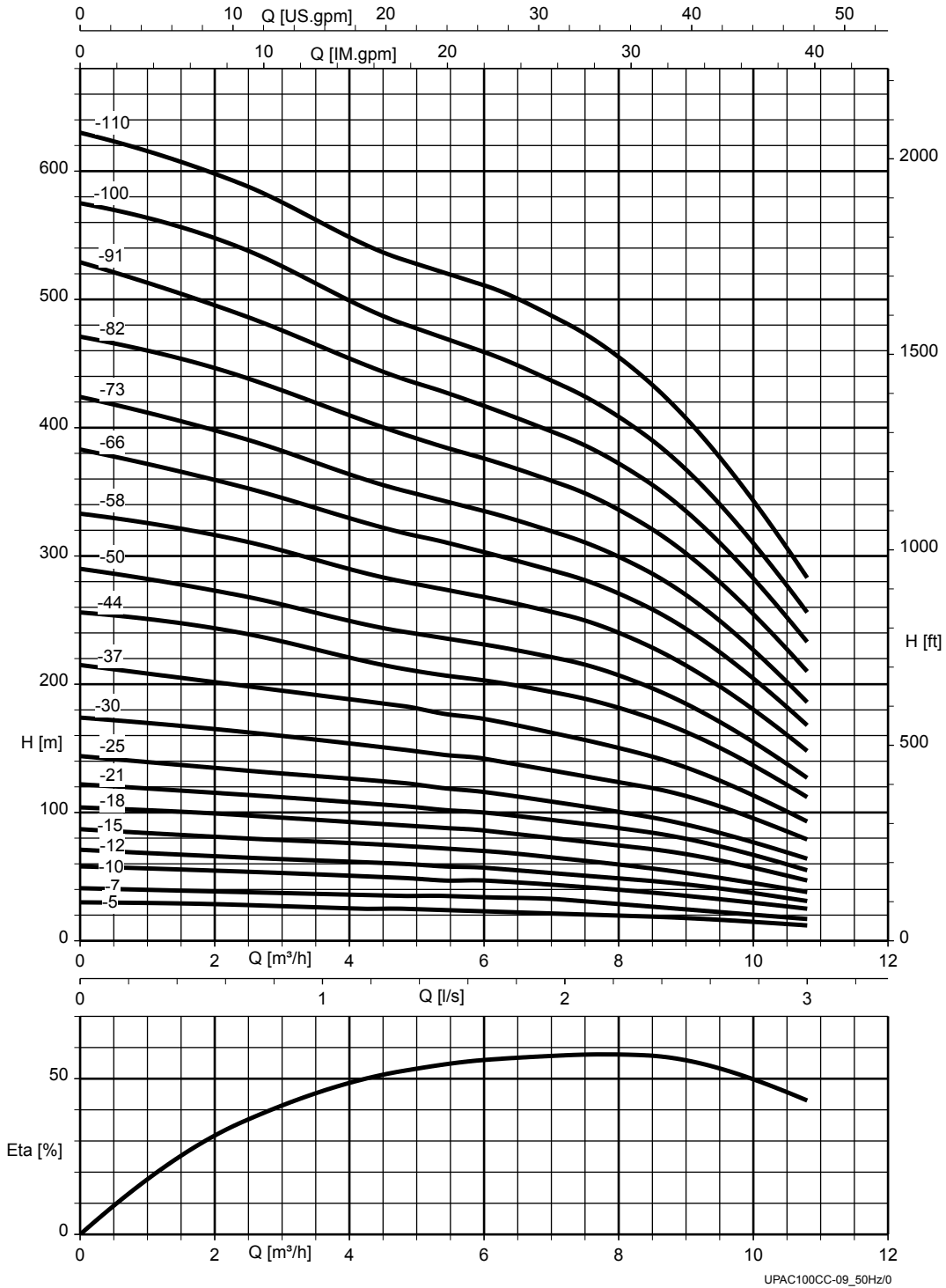
Dimensions [mm], weights [kg]

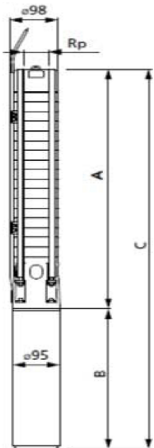
Size	Motor diam. ["]	Rp	1-230 V					3-400 V				
			A	B	C	Mat. No.	[kg]	A	B	C	Mat. No.	[kg]
			[mm]	[mm]	[mm]			[mm]	[mm]	[mm]		
UPAchrom 100 5/4 CC	4	1 1/2	251	228	479	48257417	9,2	251	214	465	48257479	9,2
UPAchrom 100 5/6 CC	4	1 1/2	293	253	546	48257418	10,8	293	228	521	48257480	10,1
UPAchrom 100 5/8 CC	4	1 1/2	335	283	618	48257419	12,1	335	248	583	48257481	11,5
UPAchrom 100 5/12 CC	4	1 1/2	419	339	758	48257420	15,5	419	307	726	48257482	14,8
UPAchrom 100 5/17 CC	4	1 1/2	524	437	961	48257421	21,2	524	339	863	48257483	17,1
UPAchrom 100 5/21 CC	4	1 1/2	608	437	1045	48257422	22	608	339	947	48257484	17,9
UPAchrom 100 5/25 CC	4	1 1/2	-	-	-	-	-	692	394	1086	48257485	23
UPAchrom 100 5/33 CC	4	1 1/2	-	-	-	-	-	868	543	1411	48257486	29,6
UPAchrom 100 5/38 CC	4	1 1/2	-	-	-	-	-	973	653	1626	48257488	37,5
UPAchrom 100 5/44 CC	4	1 1/2	-	-	-	-	-	1099	653	1752	48257490	39
UPAchrom 100 5/52 CC	4	1 1/2	-	-	-	-	-	1267	653	1920	48257491	42,3
UPAchrom 100 5/60 CC	4	1 1/2	-	-	-	-	-	1435	731	2166	48257492	48,5
UPAchrom 100 5/75 CC	6	1 1/2	-	-	-	-	-	2171	699	2870	48257874	67,1
UPAchrom 100 5/85 CC	6	1 1/2	-	-	-	-	-	2335	809	3144	48257875	81

Rated power [kW] [hp], rated current [A]

Size	Motor rating		Rated current	
	[kW]	[hp]	1~230 V	3~400 V
			[A]	[A]
UPAchrom 100 5/4 CC	0,37	0,50	3,3	1,1
UPAchrom 100 5/6 CC	0,55	0,75	4,3	1,6
UPAchrom 100 5/8 CC	0,75	1,00	5,7	2,0
UPAchrom 100 5/12 CC	1,50	2,00	10,7	3,9
UPAchrom 100 5/17 CC	2,20	3,00	14,7	5,5
UPAchrom 100 5/21 CC	2,20	3,00	14,7	5,5
UPAchrom 100 5/25 CC	3,00	4,00	-	7,5
UPAchrom 100 5/33 CC	4,00	5,50	-	9,9
UPAchrom 100 5/38 CC	5,50	7,50	-	12,6
UPAchrom 100 5/44 CC	5,50	7,50	-	12,6
UPAchrom 100 5/52 CC	5,50	7,50	-	12,6
UPAchrom 100 5/60 CC	7,50	10,00	-	17,1
UPAchrom 100 5/75 CC	9,00	10,00	-	21,7
UPAchrom 100 5/85 CC	9,00	15,00	-	21,7

UPAchrom 100-9 CC - 50 Hz



**Dimensions**


Dimensions [mm], weights [kg]

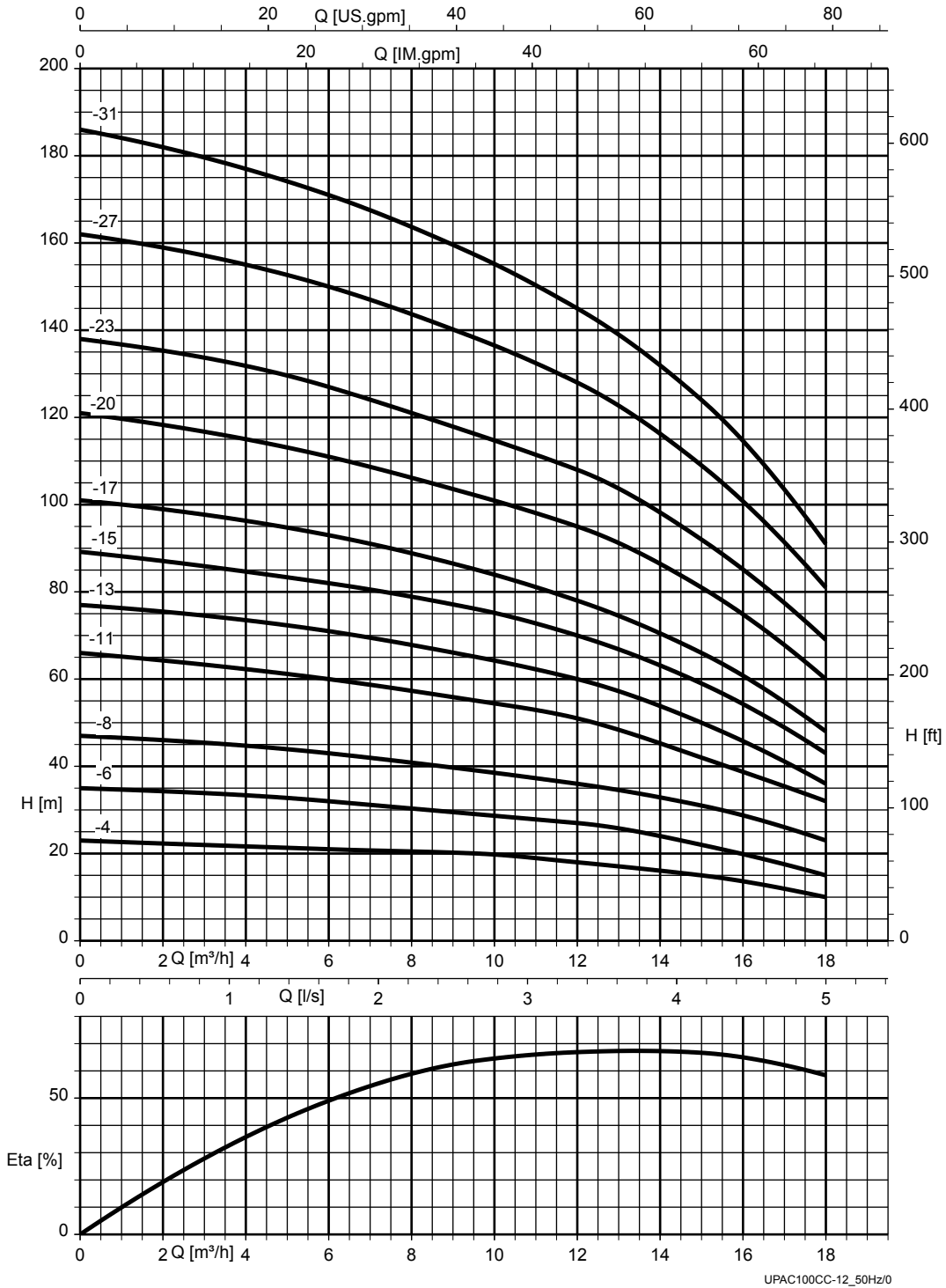
Size	Motor diam.	Rp	1-230 V					3-400 V				
			A	B	C	Mat. No.	[kg]	A	B	C	Mat. No.	[kg]
			[mm]	[mm]	[mm]			[mm]	[mm]	[mm]		
UPAchrom 100 9/5 CC	4	2	412	283	694	48257427	13,6	412	248	660	48257493	13
UPAchrom 100 9/7 CC	4	2	496	339	834	48257428	17,2	496	307	802	48257494	16,5
UPAchrom 100 9/10 CC	4	2	622	437	1058	48257429	23,5	622	339	960	48257495	19,4
UPAchrom 100 9/12 CC	4	2	706	437	1142	48257430	24,5	706	339	1044	48257496	20,4
UPAchrom 100 9/15 CC	4	2	-	-	-	-	-	832	394	1225	48257497	26,3
UPAchrom 100 9/18 CC	4	2	-	-	-	-	-	958	394	1351	48257498	27,8
UPAchrom 100 9/21 CC	4	2	-	-	-	-	-	1084	543	1627	48257500	32,8
UPAchrom 100 9/25 CC	4	2	-	-	-	-	-	1252	653	1904	48257502	40,9
UPAchrom 100 9/30 CC	4	2	-	-	-	-	-	1462	653	2114	48257503	43,4
UPAchrom 100 9/37 CC	4	2	-	-	-	-	-	1753	731	2484	48257504	50,9
UPAchrom 100 9/44 CC	4	2	-	-	-	-	-	2047	731	2778	48257505	55,7
UPAchrom 100 9/50 CC	4	2	-	-	-	-	-	2299	809	3108	48257506	84,4
UPAchrom 100 9/58 CC	6	2	-	-	-	-	-	3005	809	3814	48257876	88,8
UPAchrom 100 9/66 CC	6	2	-	-	-	-	-	3341	809	4150	48257877	93,2
UPAchrom 100 9/73 CC	6	2	-	-	-	-	-	3635	854	4489	48257878	102,1
UPAchrom 100 9/82 CC	6	2	-	-	-	-	-	4013	854	4867	48257879	107
UPAchrom 100 9/91 CC	6	2	-	-	-	-	-	4391	854	5245	48257880	112,9
UPAchrom 100 9/100 CC	6	2	-	-	-	-	-	4769	899	5668	48257881	121,9
UPAchrom 100 9/110 CC	6	2	-	-	-	-	-	5189	899	6088	48257882	127,4

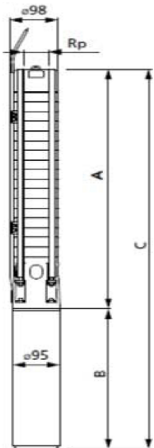
Rated power [kW] [hp], rated current [A]

Size	Motor rating		Rated current	
			1~230 V	3~400 V
	[kW]	[hp]	[A]	[A]
UPAchrom 100 9/5 CC	0,75	1,00	5,7	2,0
UPAchrom 100 9/7 CC	1,50	2,00	10,7	3,9
UPAchrom 100 9/10 CC	2,20	3,00	14,7	5,5
UPAchrom 100 9/12 CC	2,20	3,00	14,7	5,5
UPAchrom 100 9/15 CC	3,00	4,00	-	7,5
UPAchrom 100 9/18 CC	3,00	4,00	-	7,5
UPAchrom 100 9/21 CC	4,00	5,50	-	9,9
UPAchrom 100 9/25 CC	5,50	7,50	-	12,6
UPAchrom 100 9/30 CC	5,50	7,50	-	12,6
UPAchrom 100 9/37 CC	7,50	10,00	-	17,1
UPAchrom 100 9/44 CC	7,50	10,00	-	17,1
UPAchrom 100 9/50 CC	9,00	15,00	-	21,7
UPAchrom 100 9/58 CC	13,00	17,40	-	30,1
UPAchrom 100 9/66 CC	13,00	17,40	-	30,1
UPAchrom 100 9/73 CC	13,00	17,40	-	30,1
UPAchrom 100 9/82 CC	15,00	20,00	-	33,1

Size	Motor rating		Rated current	
			1~230 V	3~400 V
	[kW]	[hp]	[A]	[A]
UPAchrom 100 9/91 CC	15,00	20,00	-	33,1
UPAchrom 100 9/100 CC	18,50	25,00	-	42,1
UPAchrom 100 9/110 CC	18,50	25,00	-	42,1

UPAchrom 100-12 CC - 50 Hz



**Dimensions**


Dimensions [mm], weights [kg]

Size	Motor diam.	Rp	1-230 V					3-400 V				
			A	B	C	Mat. No.	[kg]	A	B	C	Mat. No.	[kg]
			[mm]	[mm]	[mm]			[mm]	[mm]	[mm]		
UPAchrom 100 12/4 CC	4	2	485	307	792	48257224	15,5	485	2823	768	48257437	15,2
UPAchrom 100 12/6 CC	4	2	635	339	974	48257225	18,4	635	307	942	48257438	17,7
UPAchrom 100 12/8 CC	4	2	785	437	1222	48257226	24,7	785	339	1124	48257439	20,6
UPAchrom 100 12/11 CC	4	2	-	-	-	-	-	1010	394	1404	48257440	27,3
UPAchrom 100 12/13 CC	4	2	-	-	-	-	-	1160	394	1554	48257441	28,8
UPAchrom 100 12/15 CC	4	2	-	-	-	-	-	1310	543	1853	48257442	33,3
UPAchrom 100 12/17 CC	4	2	-	-	-	-	-	1460	543	2003	48257507	34,8
UPAchrom 100 12/20 CC	4	2	-	-	-	-	-	1685	653	2338	48257508	43,7
UPAchrom 100 12/23 CC	4	2	-	-	-	-	-	1910	731	2641	48257509	50
UPAchrom 100 12/27 CC	4	2	-	-	-	-	-	2210	731	2941	48257510	53
UPAchrom 100 12/31 CC	4	2	-	-	-	-	-	2510	731	3241	48257511	56

Rated power [kW] [hp], rated current [A]

Size	Motor rating		Rated current	
			1~230 V	3~400 V
	[kW]	[hp]	[A]	[A]
UPAchrom 100 12/4 CC	1,10	1,50	8,4	2,8
UPAchrom 100 12/6 CC	1,50	2,00	10,7	3,9
UPAchrom 100 12/8 CC	2,20	3,00	14,7	5,5
UPAchrom 100 12/11 CC	3,00	4,00	-	7,5
UPAchrom 100 12/13 CC	3,00	4,00	-	7,5
UPAchrom 100 12/15 CC	4,00	5,50	-	9,9
UPAchrom 100 12/17 CC	4,00	5,50	-	9,9
UPAchrom 100 12/20 CC	5,50	7,50	-	12,6
UPAchrom 100 12/23 CC	5,50	7,50	-	12,6
UPAchrom 100 12/27 CC	7,50	10,00	-	17,1
UPAchrom 100 12/31 CC	7,50	10,00	-	17,1

### Permissible cable lengths

$\Delta V$  up to 3 %, DOL starting and t up to +30 °C

Type of current/ voltage	Motor rating [kW]	Cable lengths [m] for a cable cross-section of <sup>3)</sup>			
		1,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>	4,0 mm <sup>2</sup>	6,0 mm <sup>2</sup>
1~230 V (PSC)	0,37	95	159	255	382
1~230 V (PSC)	0,55	71	118	189	284
1~230 V (PSC)	0,75	52	87	140	210
1~230 V (PSC)	1,10	37	62	99	148
1~230 V (PSC)	1,50	28	47	75	113
1~230 V (PSC)	2,20	20	33	53	80
3~400 V	0,37	713	-	-	-
3~400 V	0,55	490	-	-	-
3~400 V	0,75	377	628	-	-
3~400 V	1,10	265	443	708	-
3~400 V	1,50	190	318	509	-
3~400 V	2,20	137	228	365	548
3~400 V	3,00	100	167	268	402
3~400 V	4,00	82	137	220	330
3~400 V	5,50	56	94	151	227
3~400 V	7,50	41	68	107	160

### Scope of supply

Depending on the model, the following items are included in the scope of supply:

- Pump set with motor lead
- Back-up name plate

Optional:

- Extension cable optional: connected or supplied but not fitted
- Cable connector
- Cable clips
- Pedestals
- Cooling shroud, suction shroud or pressure shroud
- Supporting clamps and mounting clamps
- Electrical protection equipment
- Automatic control units

3) The permissible motor cable length differs as a function of cable cross-section.

**Accessories**
**Pump accessories**

Description			Mat. No.	[kg]
Adapter	G 1 1/4 → G 1 1/2	Per set	90052823	0,5
	G 1 1/2 → DN 40	Per piece	90050611	2,6
	G 2 → DN 50	Per piece	95000220	3,5
Supporting and installation clamps	R 1 1/4 / DN 32	Per pair	95000290	2,4
	R 2" / DN 50	Per pair	95000294	3,4
Cable clip		Per piece	40980709	0,1
Power cable, round, drinking water	4 x 1,5 mm <sup>2</sup>	Per metre	90068174	0,18
Power cable, round, drinking water	4 x 2,5 mm <sup>2</sup>	Per metre	90068175	0,259
Power cable, round, drinking water	4 x 4 mm <sup>2</sup>	Per metre	90068176	0,356
Standard cable connector with shrink tube, for non-separable cable connections	4 x 1,5 mm <sup>2</sup> and 4 x 2,5 mm <sup>2</sup>		40980058	0,1
	As above, however, sealed and connected with power cable at the factory		40980708	0,1
	4 x 4 mm <sup>2</sup>		39020537	0,1
	As above, however, sealed and connected with power cable at the factory		39020536	0,5
Cable kit for 3~ motors DN 100, ≤ 3.0 kW, 4-core, flat, 4 x 1.5 mm <sup>2</sup> 4)	L = 5 m	Per set	01712501	0,7
	L = 10 m	Per set	01712502	1,3
	L = 15 m	Per set	01712503	2,07
	L = 20 m	Per set	01712504	2,74
	L = 25 m	Per set	01712505	3,3
	L = 30 m	Per set	01712506	4,1
	L = 35 m	Per set	01712507	4,77
Cable kit for 3~ motors DN 100 ≥ 3.7 kW, 4-core, flat, 4 x 1.5 mm <sup>2</sup> 5)	L = 5 m	Per set	01431841	0,7
	L = 10 m	Per set	01435407	1,3
	L = 15 m	Per set	01435408	2,07
	L = 20 m	Per set	01435409	2,74
	L = 25 m	Per set	01435410	3,3
	L = 30 m	Per set	01435411	4,1
	L = 35 m	Per set	01435412	4,77
Dry running protection device Fully automatic operation		Per set	90009554	2
	Dry running protection device Semi-automatic operation	Per set	90009553	2
Plus 1 control current cable per electrode, ACS, 1 x 1.5 mm <sup>2</sup>		Per metre	01046306	0,01
Control cabinet UPA Control For DOL starting, temperature-compensated, insulating enclosure With 4 PG cable glands for round cables 3 immersion electrodes and integrated selector switch for "Dry running protection" or "Water level control" operation, as well as with thermal overcurrent relay with phase failure protection, for motor sizes:	<b>1~ 230 V</b>	<b>3~ 400 V</b>		
	-	0,37 kW	40980887	3,5
	-	0,55 + 0,75 kW	40980889	3,5
	0,37 kW	1,10 + 1,50 kW	40980891	3,5
	0,55 kW	-	40980893	3,5
	0,75 kW	2,20 kW	40980895	3,5
	1,10 kW	3,00 + 3,70 kW	40980897	3,5
	1,50 kW	-	40980899	3,5
	2,20 kW	5,50 kW	40984811	3,5
	-	7,50 kW	90052649	3,5
Lightning protection	For 1~230 V	Per set	00533291	0,1
	For 3~400 V	Per set	00533299	0,3
Pressure controller 0 - 8 bar		Per piece	01151586	1
Set of electrodes: 3 electrodes made of stainless steel			40980055	0,3
Set of electrodes: 1 electrode made of stainless steel			40980056	0,1
Stainless steel wire rope, 15 m, with fastening elements			42200727	1
Stainless steel wire rope, 30 m			42204021	2

- 4) When ordering, please also specify the material number of the pump.  
5) When ordering, please also specify the material number of the pump.



### Cooling shroud made of stainless steel 1.4301



Using a cooling shroud can help reduce the temperature of the submersible motor. We recommend using a cooling shroud under the following operating conditions:

- When the submersible motor is subject to thermal stress, caused by:
  - Overload
  - High temperature of the surrounding fluid
  - Insufficient flow of the cooling fluid at the motor
  - Insufficient motor cooling due to impurities or deposits accumulating on the motor
- Using an additional suction strainer if the fluid contains coarse particles
  - For protection against drawn in leaves or other coarse particles contained in the water
  - For inhibiting the formation of vortices.

Since the cooling shroud is not tightly mounted to the pump (not pressure-proof) it cannot be used as suction shroud. The submersible borehole pump with cooling shroud must be permanently submerged in the water.

Number of stages UPAchrom 100 ... CC	Cooling shroud					Suction strainer		
	Ø × length	Vertical installation		Horizontal installation (including pedestals)		Ø × length	Mat. No.	[kg]
		[mm]	Mat. No.	[kg]	Mat. No.			
1/9 ... 1/21	Ø 115 (130) × 400	90066478	1,5	01138203	1,5	Ø 115 × 117	90065494	0,3
1/28 ... 1/50	Ø 115 (130) × 500	90066479	1,8	01138204	1,8	Ø 115 × 117	90065494	0,3
1/50	Ø 115 (130) × 620	90066480	2	01138205	2	Ø 115 × 117	90065494	0,3
2/6 ... 2/13	Ø 115 (130) × 400	90066478	1,5	01138203	1,5	Ø 115 × 117	90065494	0,3
2/18 ... 2/33	Ø 115 (130) × 500	90066479	1,8	01138204	1,8	Ø 115 × 117	90065494	0,3
2/40 ... 2/65	Ø 115 (130) × 620	90066480	2	01138205	2	Ø 115 × 117	90065494	0,3
2/75 ... 2/90	Ø 115 (130) × 800	90066481	2,5	01138206	2,5	Ø 115 × 117	90065494	0,3
3/6 ... 3/9	Ø 115 (130) × 400	90066478	1,5	01138203	1,5	Ø 115 × 117	90065494	0,3
3/12 ... 3/25	Ø 115 (130) × 500	90066479	1,8	01138204	1,8	Ø 115 × 117	90065494	0,3
3/29 ... 3/45	Ø 115 (130) × 620	90066480	2	01138205	2	Ø 115 × 117	90065494	0,3
3/52 ... 3/60	Ø 115 (130) × 800	90066481	2,5	01138206	2,5	Ø 115 × 117	90065494	0,3
5/4 ... 5/6	Ø 115 (130) × 400	90066478	1,5	01138203	1,5	Ø 115 × 117	90065494	0,3
5/8 ... 5/17	Ø 115 (130) × 500	90066479	1,8	01138204	1,8	Ø 115 × 117	90065494	0,3
5/21 ... 5/33	Ø 115 (130) × 620	90066480	2	01138205	2	Ø 115 × 117	90065494	0,3
5/38 ... 5/44	Ø 115 (130) × 800	90066481	2,5	01138206	2,5	Ø 115 × 117	90065494	0,3
5/52 ... 2/60	Ø 115 (130) × 1000	90066482	3	01138257	3	Ø 115 × 117	90065494	0,3
5/75 ... 5/85	Ø 180 (200) × 800	01584802	5,5	01584805	7,9	Ø 180 × 192	01138984	0,6
9/5 ... 9/10	Ø 115 (130) × 500	90066479	1,8	01138204	1,8	Ø 115 × 117	90065494	0,3
9/12 ... 9/18	Ø 115 (130) × 620	90066480	2	01138205	2	Ø 115 × 117	90065494	0,3
9/21 ... 9/25	Ø 115 (130) × 800	90066481	2,5	01138206	2,5	Ø 115 × 117	90065494	0,3
9/30 ... 9/50	Ø 115 (130) × 1000	90066482	3	01138257	3	Ø 115 × 117	90065494	0,3
9/58 ... 9/110	Ø 180 (200) × 1000	01584806	6	01584817	9,6	Ø 180 × 192	01138984	0,6
12/4 ... 12/6	Ø 115 (130) × 500	90066479	1,8	01138204	1,8	Ø 115 × 117	90065494	0,3
12/8 ... 12/13	Ø 115 (130) × 620	90066480	2	01138205	2	Ø 115 × 117	90065494	0,3
12/15 ... 12/17	Ø 115 (130) × 800	90066481	2,5	01138206	2,5	Ø 115 × 117	90065494	0,3
12/20 ... 12/31	Ø 115 (130) × 1000	90066482	3	01138257	3	Ø 115 × 117	90065494	0,3

### Automatic control units

	Description	Mat. No.	[kg]
	Cervomatic EDP.2 automatic control unit	01185581	2,5
	Controlmatic E automatic control unit	90053395	1,3







**KSB SE & Co. KGaA**  
Johann-Klein-Straße 9 • 67227 Frankenthal (Germany)  
Tel. +49 6233 86-0  
[www.ksb.com](http://www.ksb.com)