

# GENERAL CATALOGUE



**City**<sup>®</sup>  
*pumps*





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## EU REGULATION N. 547/2012

- Pumps with a minimum efficiency index  $MEI \geq 0.40$  in conformity with the EU Regulation in force from 1st January 2015.
- The bench mark for the most efficient water pumps is  $MEI \geq 0.70$ .
- The efficiency of a pump with a trimmed impeller is usually lower than that of a pump with a full diameter impeller. The trimming of the impeller adapts the pump to a fixed duty point, resulting in a lower energy consumption. The minimum efficiency index (MEI) is based on the full diameter impeller.
- The functioning of the water pump with variable places of operation can be more efficient and economical if, for example, it is controlled by means of a variable speed motor which adjusts the function of the pump to the system.
- The information regarding the bench mark efficiency is available at:  
[www.europump.org/efficiencycharts](http://www.europump.org/efficiencycharts)

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Clean water

Domestic use



### PERFORMANCE RANGE

- Flow rate up to **50 l/min** (3.0 m<sup>3</sup>/h)
- Head up to **70 m**

### APPLICATION LIMITS

- Manometric suction lift up to **8 m**
- Liquid temperature between **-10 °C** and **+60 °C**
- Ambient temperature up to **+40 °C** (**+45 °C** for IP 05)
- Max. working pressure:
  - **6 bar** for IP 05, IP 07
  - **7 bar** for IP 800, IP1000
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

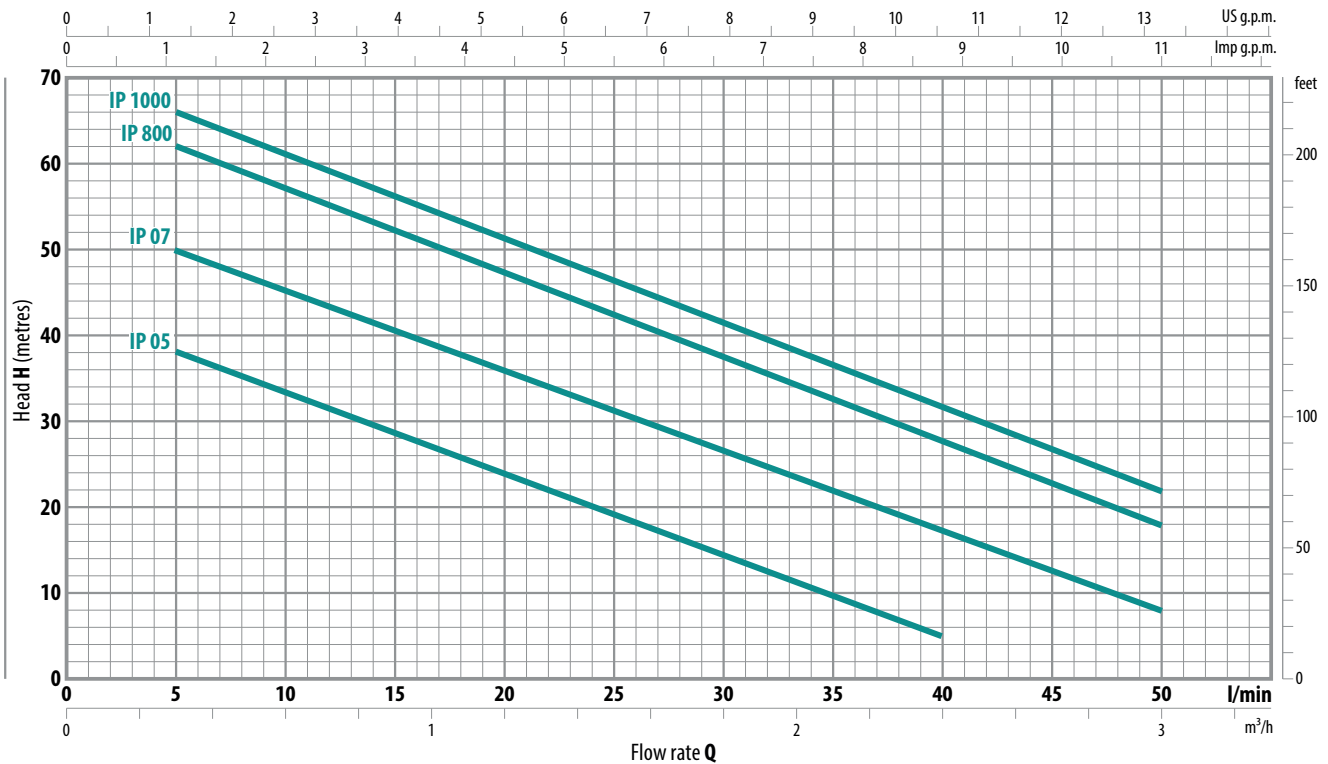
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n=2900 min<sup>-1</sup> | HS=0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate																							
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	3.0	l/min	0	5	10	15	20	25	30	35	40	50		
IP 05M	IP 05	0.37	0.50	H metri	40	38	33.5	29	24	19.5	15	10	5															
IP 07M	IP 07	0.55	0.75		55	50	45.5	40.5	36	31	27	22	17	8														
IP 800M	IP 800	0.60	0.85		65	62	57	52	47	42	37	32	27	18														
IP 1000M	IP 1000	0.75	1		70	66	61	56	51	46	41	36.5	31	22														

Q = Flow rate  
H = Total manometric head  
HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

Suitable for use with clean water that does not contain abrasive particles and with liquids that are not chemically aggressive towards the materials from which the pump is made.

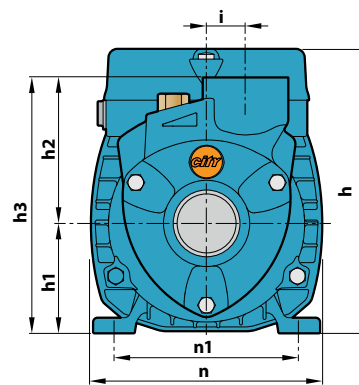
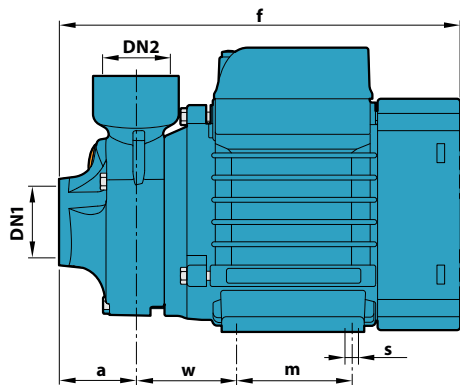
Because of their reliability and the fact that they are easy to use and are economical, they are ideal for domestic use and in particular for distributing water in combination with small pressure tanks and for the irrigation of gardens and orchards.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded ports in compliance with ISO 228/1
<b>IMPELLER</b>	Brass with peripheral radial vanes
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Ceramic - Graphite - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors up to P2=0.55kW in class IE2 and from P2=0.60kW in class IE3 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm													kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	h3	i	m	n	n1	w	s	1~	3~	
IP 05M	IP 05	1"	1"	39	207	145	56	75	131	20	55	118	93-100	53	7	5.2	5.2	
IP 07M	IP 07				236	152	63		138		80	120	100			7.0	6.3	
IP 800M	IP 800			55	285	180 *	71	85	156		90	140	112	62		10.0	9.9	
IP 1000M	IP 1000															10.0	9.9	

(\*) h=199 mm for single phase versions at 110 V

## ABSORPTION

MODEL	VOLTAGE		
Single-phase	230 V	240 V	110 V
IP 05M	2.5 A	2.4 A	5.5 A
IP 07M	3.7 A	3.4 A	7.4 A
IP 800M	5.2 A	4.8 A	10.8 A
IP 1000M	5.2 A	4.8 A	10.5 A

MODEL	VOLTAGE				
Three-phase	230 V	400 V	690 V	240 V	415 V
IP 05	2.0 A	1.15 A	-	1.9 A	1.1 A
IP 07	3.0 A	1.7 A	-	2.8 A	1.6 A
IP 800	3.8 A	2.2 A	-	3.3 A	1.9 A
IP 1000	3.8 A	2.2 A	-	3.3 A	1.9 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
IP 05M	IP 05	240	330
IP 07M	IP 07	189	243
IP 800M	IP 800	102	170
IP 1000M	IP 1000	102	170

Clean water

Domestic use



### PERFORMANCE RANGE

- Flow rate up to **40 l/min** (2.4 m<sup>3</sup>/h)
- Head up to **40 m**

### APPLICATION LIMITS

- Manometric suction lift up to **9 m** (HS)
- Liquid temperature between **-10 °C** and **+60 °C**
- Ambient temperature up to **+45 °C**
- Max. working pressure **6 bar**
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

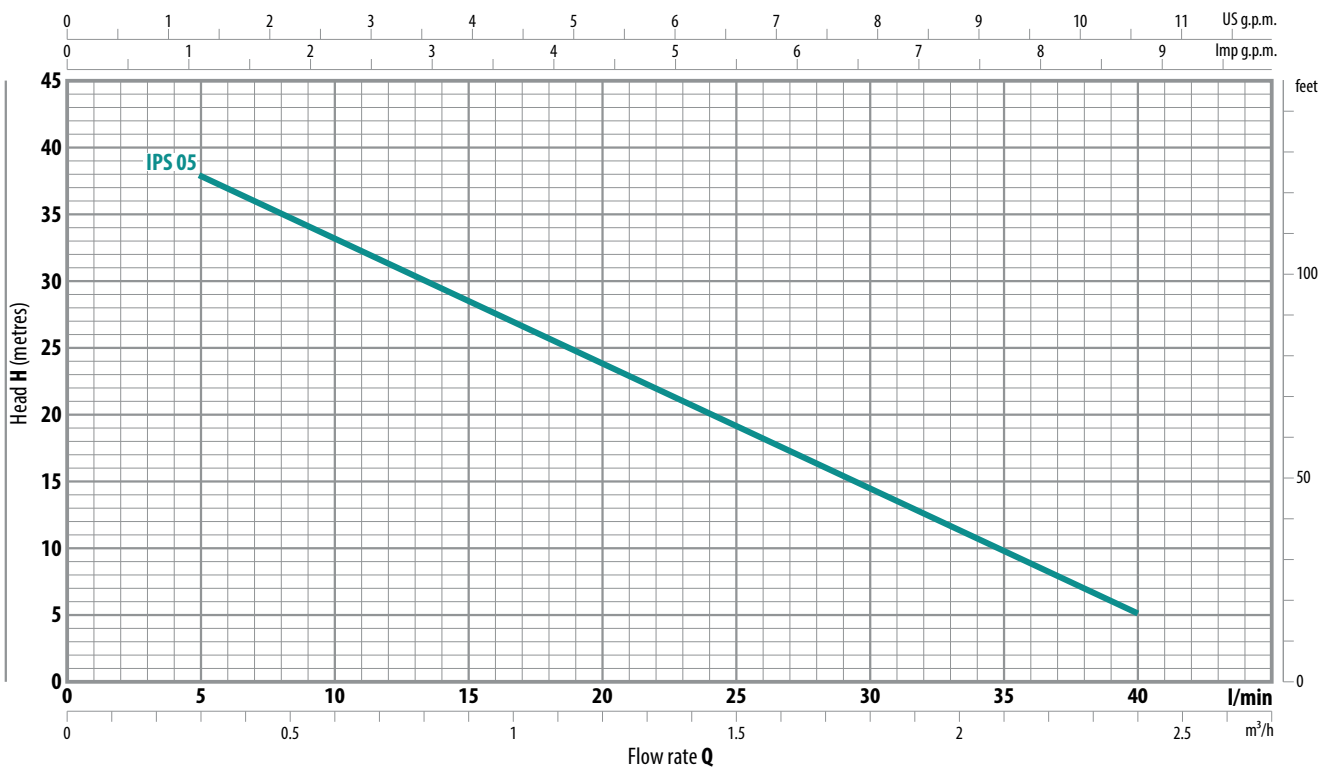
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

| 50 Hz | n= 2900 min<sup>-1</sup> | HS= 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate											
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4		
				l/min	0	5	10	15	20	25	30	35	40			
IPS 05M	IPS 05	0.37	0.50	H metres	40	38	33.5	29	24	19.5	15	10	5			

Q = Flow rate  
H = Total manometric head  
HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.



## INSTALLATION AND USE

Suitable for use with clean water that does not contain abrasive particles and with liquids that are not chemically aggressive towards the materials from which the pump is made.

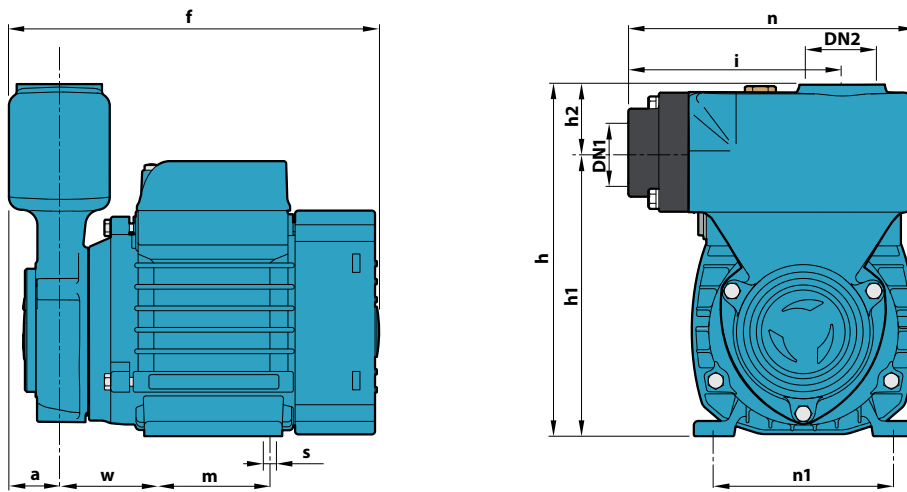
Because of their compactness, reliability and the fact that they are easy to use, they are suitable for use in domestic applications such as the distribution of water in combination with small pressure tanks, for the irrigation of gardens and orchards, for drawing water from tanks and for all those other situations where air or gas may be present in the water to be pumped.

The pump comes complete with a flap-check valve. The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded ports in compliance with ISO 228/1 and a built-in flap-check valve in the suction port
<b>IMPELLER</b>	Brass with peripheral radial vanes
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Ceramic - Graphite - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors in class IE2 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm												kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	i	m	n	n1	w	s	1~	3~	
IPS 05M	IPS 05	1"	1"	26	195	183	149	34	110	55	149	93-100	53	7	6.1	6.1	

## ABSORPTION

MODEL	VOLTAGE			
	Single-phase	230 V	240 V	110V
IPS 05M	2.5 A	2.4 A	5.5 A	

MODEL	VOLTAGE			
	Three-phase	230 V	400 V	240 V
IPS 05	2.0 A	1.15 A	1.9 A	1.1 A

Clean water

Domestic use

Industrial use



### PERFORMANCE RANGE

- Flow rate up to **50 l/min** (3.0 m<sup>3</sup>/h)
- Head up to **70 m**

### APPLICATION LIMITS

- Manometric suction lift up to **8 m**
- Liquid temperature between **-10 °C** and **+90 °C**
- Ambient temperature between **-10 °C** and **+40 °C** (+45 °C for IQ 05)
- Max. working pressure:
  - **6 bar** for IQ 05, IQ 07
  - **10 bar** for IQ 1000
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

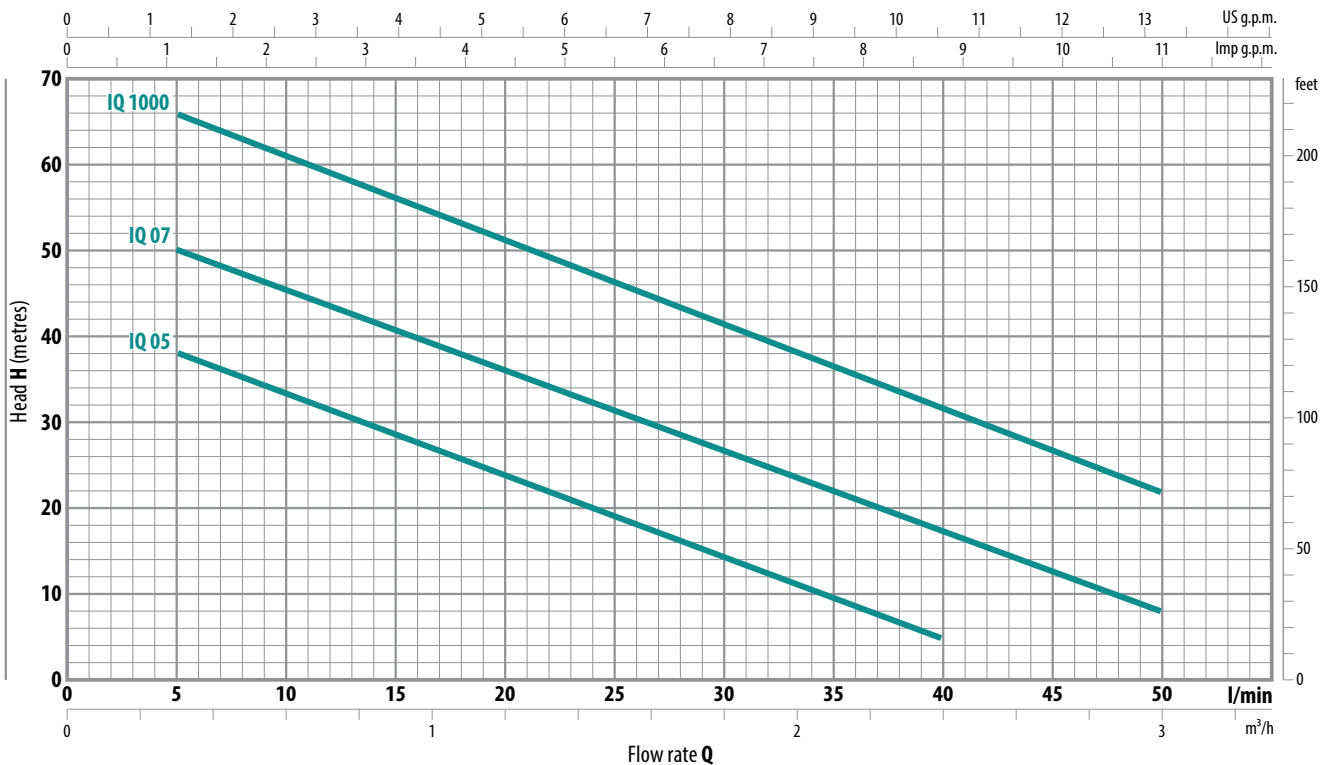
EN 60335-1  
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CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

| 50 Hz | n= 2900 min<sup>-1</sup> | HS= 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate									
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4
				l/min	0	5	10	15	20	25	30	35	40	50
IQ 05M	IQ 05	0.37	0.50	H metres	40	38	33.5	29	24	19.5	15	10	5	
IQ 07M	IQ 07	0.55	0.75		55	50	45.5	40.5	36	31	27	22	17	8
IQ 1000M	IQ 1000	0.75	1		70	66	61	56	51	46	41	36.5	31	22

Q = Flow rate  
H = Total manometric head  
HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

Suitable for use with clean water that does not contain abrasive particles and with liquids that are not chemically aggressive towards the materials from which the pump is made.

The hydraulic characteristics of these pumps, coupled with their compactness, makes them suitable for use in both domestic and industrial applications.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

**PUMP BODY** Cast iron with an Epoxy Electro Coating treatment, with threaded ports in compliance with ISO 228/1

**IMPELLER** Brass with peripheral radial vanes

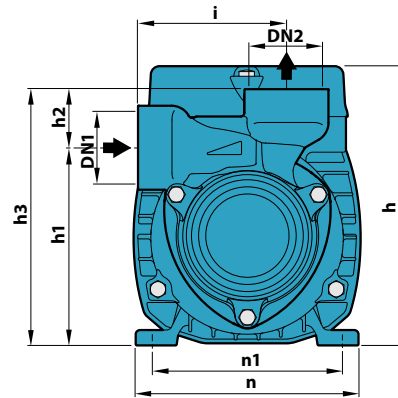
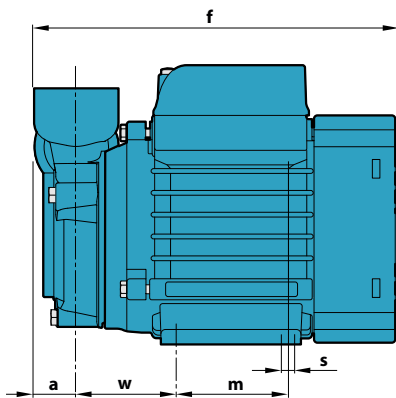
**MOTOR SHAFT** Stainless steel EN 10088-3 - 1.4104

**MECHANICAL SEAL** **IQ05, IQ07:**  
Ceramic - Graphite - NBR

**IQ1000:**  
Silicon carbide - Graphite - NBR

**ELECTRIC MOTOR** The three-phase pumps are fitted with high performance motors up to P2=0.55kW in class IE2 and from P2=0.60kW in class IE3 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm											kg		
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	h3	i	m	n	n1	w	s	1~	3~
IQ 05M	IQ 05	1"	1"	22	190	145	101	30	131	76	55	118	93-100	53	7	5.1	5.1
IQ 07M	IQ 07				220	152	113		143	78	80	120	100			7.0	6.2
IQ 1000M	IQ 1000				255	180 *	121		151	83	90	138	112			62	9.7

(\*) h=199 mm for single phase versions at 110 V

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase			
IQ 05M	2.6 A	2.4 A	5.2 A
IQ 07M	3.7 A	3.4 A	7.4 A
IQ 1000M	5.2 A	4.8 A	10.5 A

MODEL	VOLTAGE				
	230 V	400 V	690 V	240 V	415 V
Three-phase					
IQ 05	2.0 A	1.15 A	-	1.9 A	1.1 A
IQ 07	3.0 A	1.7 A	-	2.8 A	1.6 A
IQ 1000	3.8 A	2.2 A	-	3.3 A	1.9 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
IQ 05M	IQ 05	256	352
IQ 07M	IQ 07	200	240
IQ 1000M	IQ 1000	102	170

Clean water

Domestic use

Civil use



### PERFORMANCE RANGE

- Flow rate up to **120 l/min** (7.2 m<sup>3</sup>/h)
- Head up to **41 m**

### APPLICATION LIMITS

- Manometric suction lift up to **7 m**
- Liquid temperature between **-10 °C** and **+90 °C**
- Ambient temperature up to **+40 °C**
- Max. working pressure:
  - **6 bar** for IC 50, IC 100H
  - **10 bar** for IC 150
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

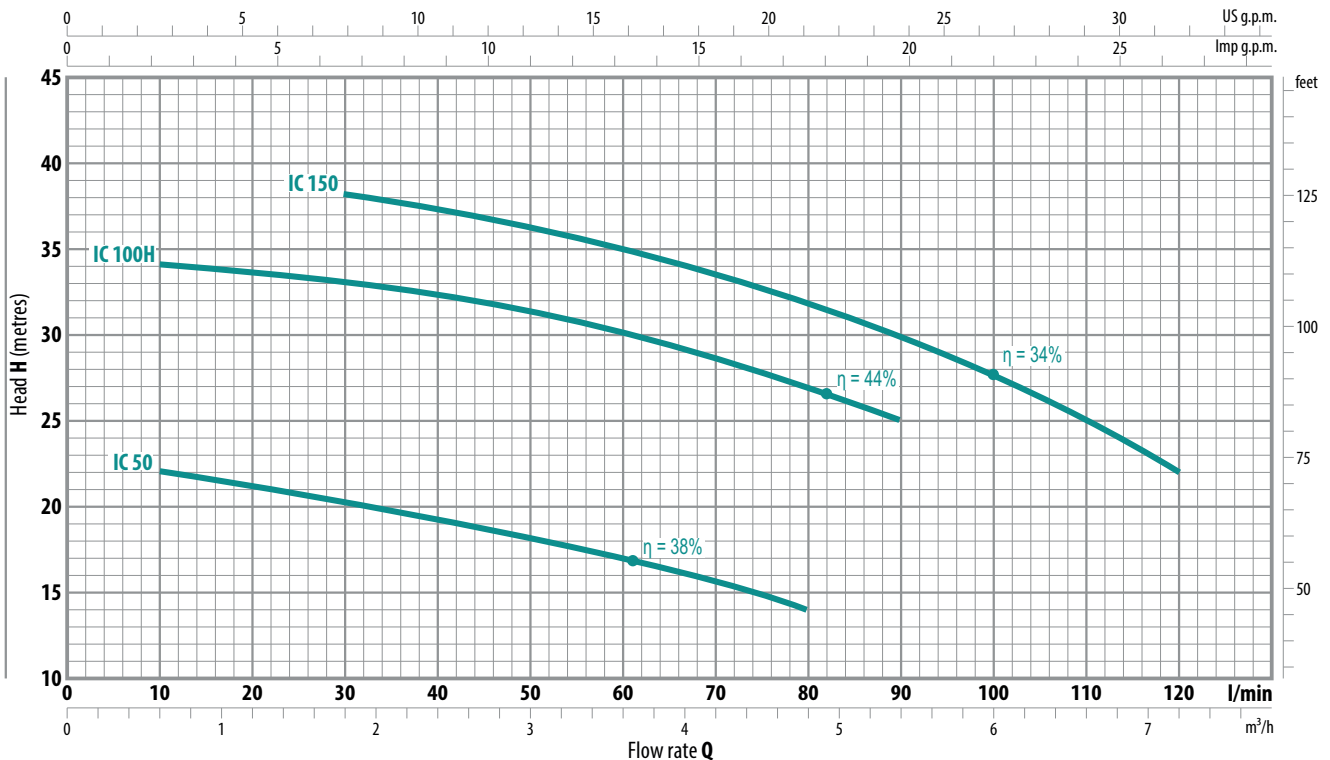
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup> | HS = 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate Q													
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2
IC 50M	IC 50	0.37	0.50	l/min	0	10	20	30	40	50	60	70	80	90	100	110	120	
IC 100MH	IC 100H	0.75	1	H metres	23	22	21	20	19	18	17	15.5	14					
IC 150M	IC 150	1.1	1.5		36	34	33.5	33	32.5	31.5	30	28.5	27	25				
					41	-	-	38	37	36	35	33.5	32	30	27.5	25	22	

Q = Flow rate  
H = Total manometric head  
HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

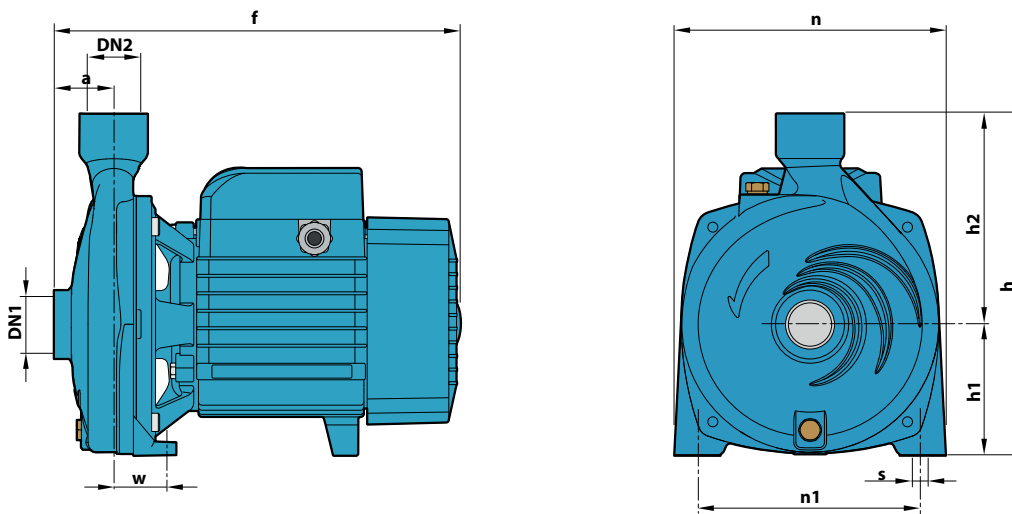
Suitable for use with clean water and with liquids that are not chemically aggressive towards the materials from which the pump is made. Because they are reliable and easy to use these pumps are widely used in domestic and civil applications such as the distribution of water in combination with small and medium sized pressure tanks, for transferring liquids and for the irrigation of gardens and orchards.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded ports in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	<b>IC50, IC100H:</b> Ceramic - Graphite - NBR  <b>IC150:</b> Graphite - Ceramic - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors up to P2=0.37kW in class IE2 and from P2=0.75kW in class IE3 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm									kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	n	n1	w	s	1~	3~
IC 50M	IC 50	1"	1"	42	253	205	82	123	165	135	41	10	7.8	7.3
IC 100MH	IC 100H				285	240	92	148	190	160	38		12.0	11.0
IC 150M	IC 150	1¼"	1"	51	367	260	110	150	206	165	44.5	11	17.8	17.2

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase	230 V	240 V	110 V
IC 50M	3.2 A	2.9 A	6.4 A
IC 100MH	6.0 A	5.8 A	12.0 A
IC 150M	7.8 A	7.2 A	16.0 A

MODEL	VOLTAGE			
	230 V	400 V	240 V	415 V
Three-phase	230 V	400 V	240 V	415 V
IC 50	2.0 A	1.2 A	1.8 A	1.1 A
IC 100H	4.4 A	2.5 A	4.3 A	2.4 A
IC 150	5.2 A	3.0 A	5.1 A	2.9 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
IC 50M	IC 50	90	162
IC 100MH	IC 100H	70	112
IC 150M	IC 150	50	70



### PERFORMANCE RANGE

- Flow rate up to **600 l/min** (36 m<sup>3</sup>/h)
- Head up to **33 m**

### APPLICATION LIMITS

- Manometric suction lift up to **7 m**
- Liquid temperature between **-10 °C** and **+90 °C**
- Ambient temperature up to **+40 °C**
- Max. working pressure:
  - **6 bar** for ICH 100
  - **10 bar** for ICH 150, 200, 300, 150B, 200A
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

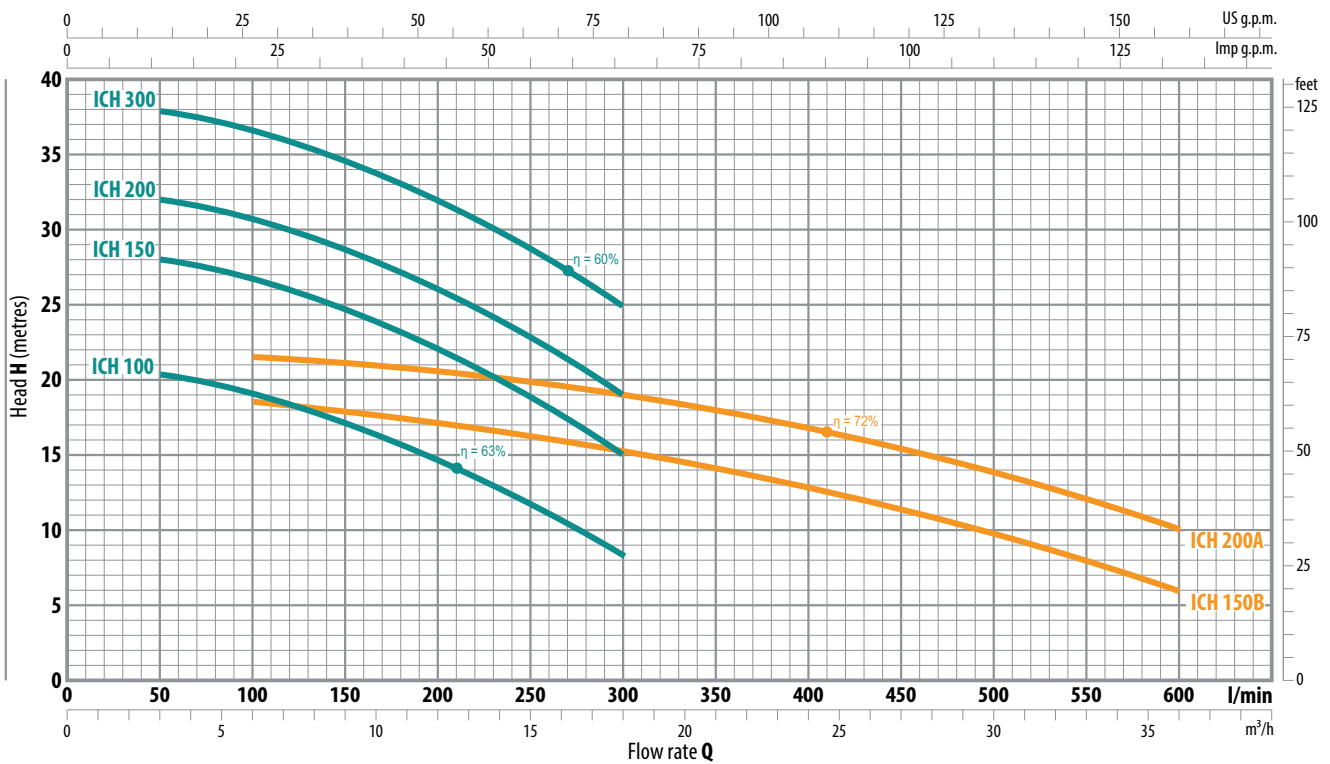
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup> | HS = 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate												
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	3	6	9	12	15	18	21	24	30	36	
				l/min	0	50	100	150	200	250	300	350	400	500	600		
ICH 100M	ICH 100	0.75	1	H metres	21.2	20.2	19	17	14.5	11.6	8.4						
ICH 150M	ICH 150	1.1	1.5		29	28	26.5	24.5	22	18.5	15						
ICH 200M	ICH 200	1.5	2		33	32	30.5	28.5	26	22.5	19						
–	ICH 300	2.2	3		39	38	36.5	34.5	32	28.5	25						
ICH 150BM	ICH 150B	1.1	1.5		19	–	18.5	18	17	16	15.2	14	12.8	9.7	6		
ICH 200AM	ICH 200A	1.5	2		22	–	21.5	21	20.5	19.8	19	18	16.8	13.8	10		

Q = Flow rate  
H = Total manometric head  
HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

Suitable for use in civil and agricultural applications.

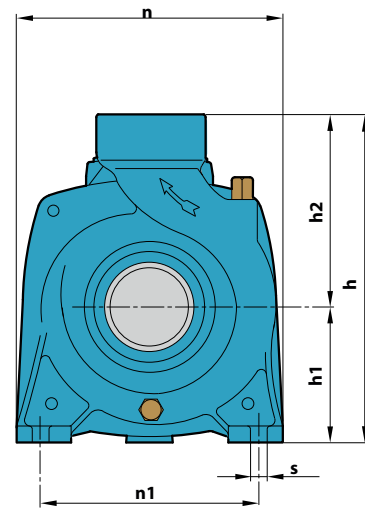
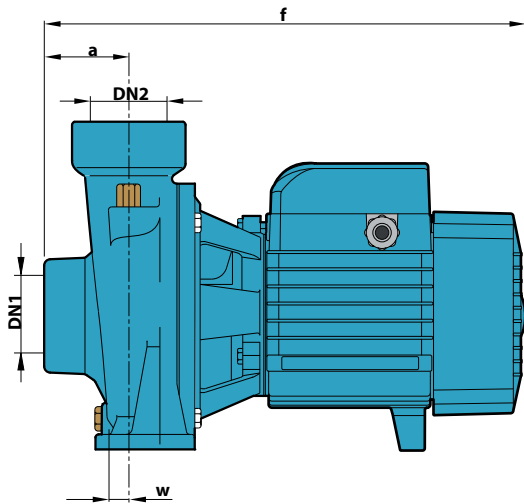
The high efficiency and continuous duty capabilities makes these pumps ideal for use in applications such as flood and spray irrigation, drawing water from lakes, rivers and wells, or for any number of different industrial applications where the characteristics of high flow rates and mid to low head are required.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron complete with threaded ports in compliance with ISO 228/1
<b>IMPELLER</b>	Brass
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	<b>ICH 100:</b> Ceramic - Graphite - NBR  <b>ICH 150, 200, 300, 150B, 200A:</b> Graphite - Ceramic - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors in class IE3 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm									kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	n	n1	w	s	1~	3~
ICH 100M	ICH 100	1½"	1½"	45	300	225	92	133	190	160	4	10	13.0	12.0
ICH 150M	ICH 150			19.0	18.6									
ICH 200M	ICH 200			21.8	20.5									
-	ICH 300			-	21.9									
ICH 150BM	ICH 150B	2"	2"	59	386	260	110	150	208	160	12.5	11	20.1	19.2
ICH 200AM	ICH 200A			21.5	20.8									

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
ICH 100M	5.6 A	5.3 A	11.2 A
ICH 150M	8.0 A	7.6 A	16.0 A
ICH 200M	10.0 A	9.0 A	20.0 A
ICH 150BM	7.7 A	7.1 A	14.8 A
ICH 200AM	10.1 A	9.7 A	20.5 A

MODEL	VOLTAGE					
	230 V	400 V	690 V	240 V	415 V	720 V
ICH 100	4.4 A	2.5 A	1.5 A	4.0 A	2.3 A	1.3 A
ICH 150	5.7 A	3.3 A	1.9 A	5.5 A	3.2 A	1.8 A
ICH 200	7.4 A	4.3 A	2.5 A	7.1 A	4.1 A	2.4 A
ICH 300	9.5 A	5.5 A	3.2 A	9.1 A	5.3 A	3.1 A
ICH 150B	5.7 A	3.3 A	1.9 A	5.5 A	3.2 A	1.8 A
ICH 200A	7.1 A	4.1 A	2.4 A	6.5 A	3.7 A	2.1 A

Clean water
 Domestic use
 Civil use
 Industrial use



### PERFORMANCE RANGE

- Flow rate up to **160 l/min** (9.6 m<sup>3</sup>/h)
- Head up to **68 m**

### APPLICATION LIMITS

- Manometric suction lift up to **7 m**
- Liquid temperature between **-10 °C** and **+90 °C**
- Ambient temperature between **-10 °C** and **+40 °C**
- Max. working pressure **10 bar**  
(**6 bar** for ICB 100N)
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

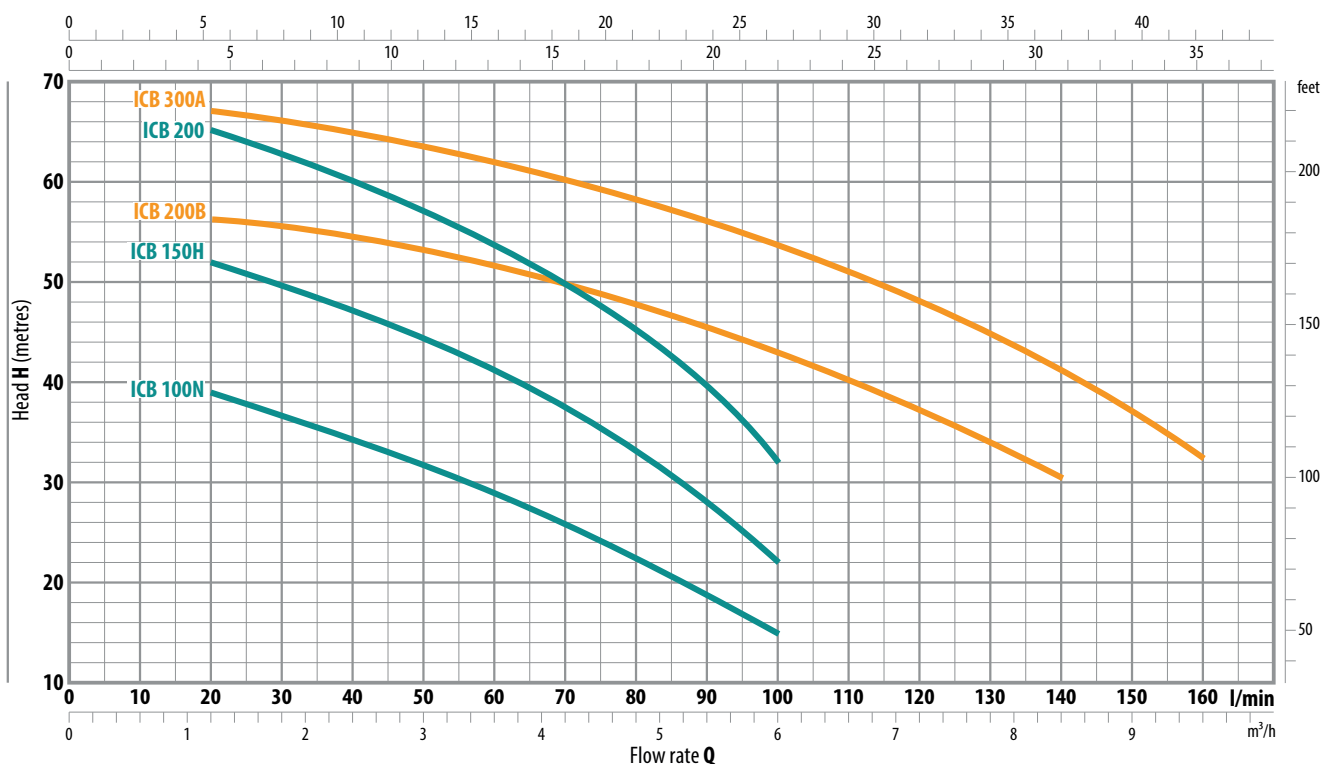
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

| 50 Hz | n= 2900 min<sup>-1</sup> | HS= 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate															
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2	8.4	9.6	
				l/min	0	20	30	40	50	60	70	80	90	100	110	120	140	160		
ICB 100NM	ICB 100N	0.75	1	H metres	42	39	37	34	31	28.5	25.5	22	18	15						
ICB 150HM	ICB 150H	1.1	1.5		54	52	50	47.5	44.5	41	37	33	28	22						
ICB 200M	ICB 200	1.5	2		67	65	62	60	57	54	50	45	40	32						
ICB 200BM	ICB 200B	1.5	2		58	56	55	54	53	51	49	47	45	43	40	37	30			
-	ICB 300A	2.2	3		68	67	65.5	64.5	63	62	60	58	56	54	51	48	41	32		

Q = Flow rate  
 H = Total manometric head  
 HS = Suction height

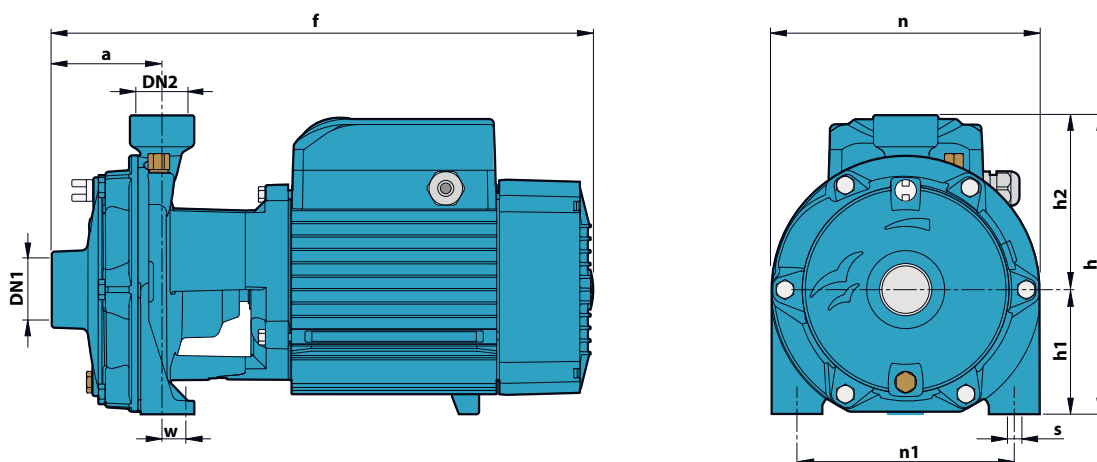
Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.



## INSTALLATION AND USE

Suitable for use with clean water and with liquids that are not chemically aggressive towards the materials from which the pump is made. The high performance and adaptability to a wide range of applications make them the ideal choice in domestic, civil and industrial applications, in particular for the distribution of water in combination with pressure tanks for boosting pressure in the network and for firefighting sets. The pump should be installed in an enclosed environment or sheltered from inclement weather.

## DIMENSIONS AND WEIGHT



## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron complete with threaded ports in compliance with ISO 228/1
<b>IMPELLERS</b>	Brass (Stainless steel AISI 304 for <b>ICB 100N</b> )
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Graphite - Ceramic - NBR (Ceramic - Graphite - NBR for <b>ICB 100N</b> )
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors in class IE3 (IEC 60034-30)

MODEL		PORTS		DIMENSIONS mm									kg		
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	n	n1	w	s	1~	3~	
ICB 100NM	ICB 100N	1 1/4"	1"	73	330	201	92	109	180	142	1	10	14.5	14.4	
ICB 150HM	ICB 150H						223	93	130	200	162	17	10	19.3	18.8
ICB 200M	ICB 200			82	404	261	110	151	225	185	26	11	24.6	23.5	
ICB 200BM	ICB 200B			261	110	151	225	185	26	11	24.4	23.3			
-	ICB 300A			-	24.6										

## ABSORPTION

MODEL	VOLTAGE		
Single-phase	230 V	240 V	110 V
ICB 100NM	6.3 A	6.0 A	12.6 A
ICB 150HM	7.7 A	7.4 A	15.5 A
ICB 200M	10.5 A	10.0 A	21.0 A
ICB 200BM	10.0 A	9.6 A	20.0 A

MODEL	VOLTAGE					
Three-phase	230 V	400 V	690 V	240 V	415 V	720 V
ICB 100N	4.6 A	2.6 A	1.5 A	4.3 A	2.5 A	1.4 A
ICB 150H	5.4 A	3.1 A	1.8 A	5.2 A	3.0 A	1.7 A
ICB 200	6.9 A	4.0 A	2.3 A	6.6 A	3.8 A	2.2 A
ICB 200B	6.9 A	4.0 A	2.3 A	6.6 A	3.8 A	2.2 A
ICB 300A	9.2 A	5.3 A	3.1 A	8.8 A	5.1 A	2.9 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
ICB 100NM	ICB 100N	-	-
ICB 150HM	ICB 150H	50	70
ICB 200M	ICB 200	50	70
ICB 200BM	ICB 200B	50	70
-	ICB 300A	50	70

Clean water

Domestic use



### PERFORMANCE RANGE

- Flow rate up to **130 l/min** (7.8 m<sup>3</sup>/h)
- Head up to **52 m**

### APPLICATION LIMITS

- Manometric suction lift up to **7 m**
- Liquid temperature between **-10 °C** and **+40 °C**
- Ambient temperature up to **+40 °C**
- Max. working pressure **6 bar**
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

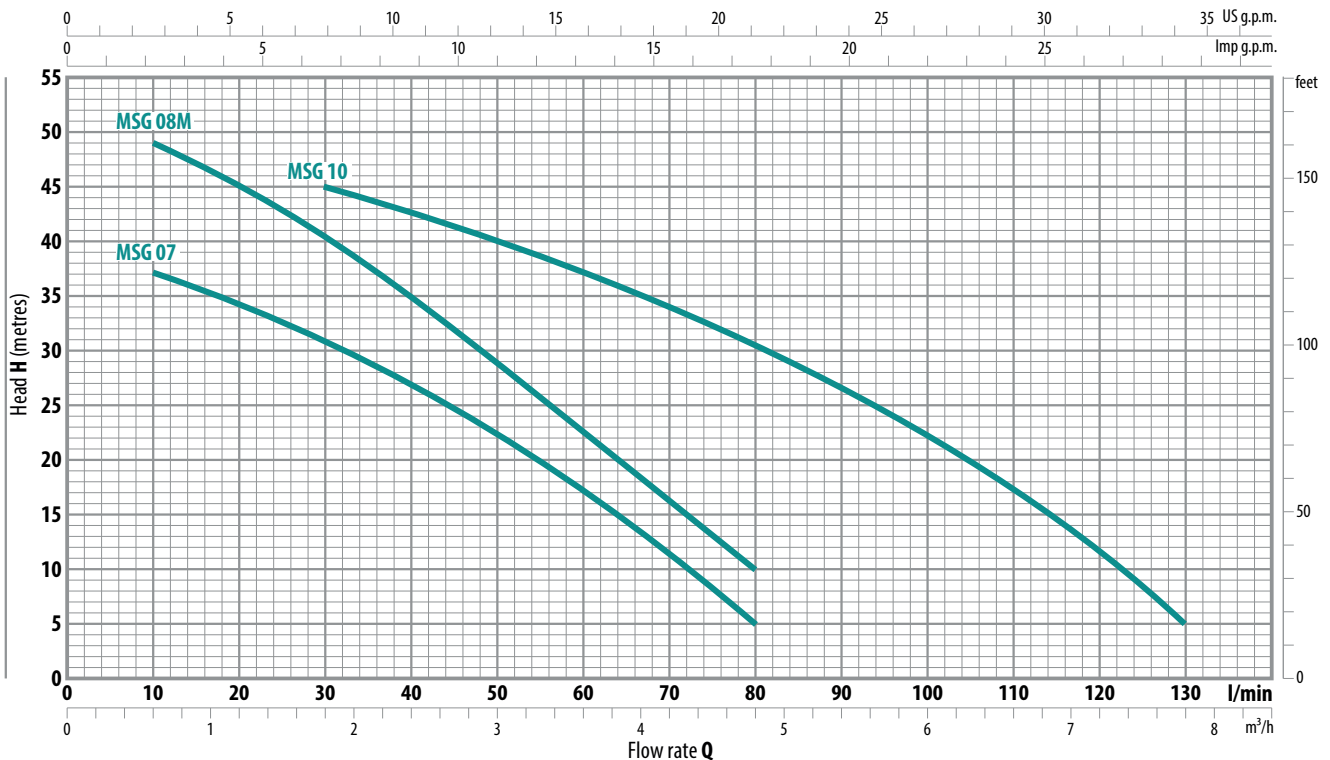
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup> | HS = 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate																
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	0.3	0.6	0.9	1.2	1.5	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	7.2	7.8
				l/min	0	5	10	15	20	25	30	40	50	60	70	80	90	100	120	130	
MSG 07M	MSG 07	0.45	0.60	H metres	40	38	37	36	34.5	33	31	27	22.5	17	11	5					
MSG 08M	MSG 08	0.55	0.75		52	50	49	47	44.5	42	40	34	28.5	22.5	16	10					
MSG 10M	MSG 10	0.75	1		50	50	49	48	47	46	45	42	39.5	37	34	30.5	26.5	22	11	5	

Q = Flow rate  
H = Total manometric head  
HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

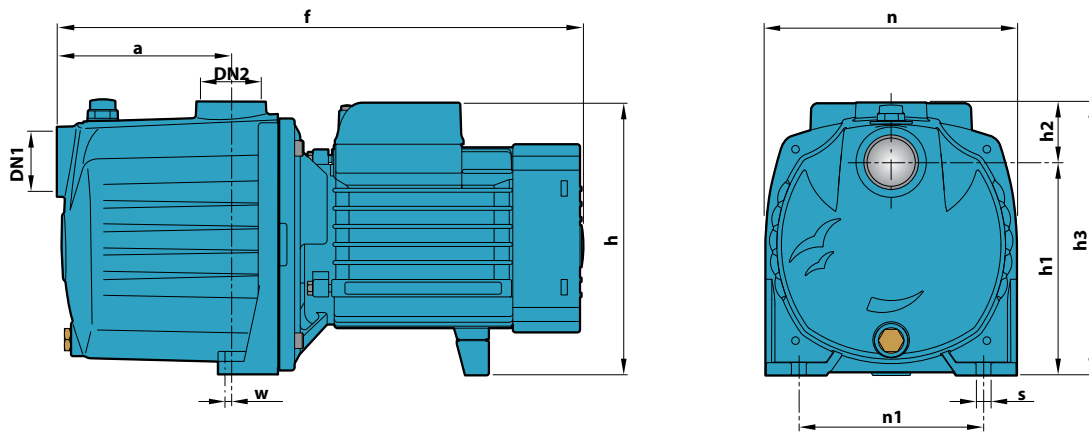
## INSTALLATION AND USE

Suitable for use with clean water and with liquids that are not chemically aggressive towards the materials from which the pump is made. As a result of their quietness, these pumps are widely used in domestic applications such as the distribution of water in combination with small and medium sized pressure tanks, and for the irrigation of gardens and orchards, etc. The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded ports in compliance with ISO 228/1
<b>IMPELLERS</b>	Noryl FE1520PW
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Ceramic - Graphite - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors up to P2=0.55kW in class IE2 and from P2=0.75kW in class IE3 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm										kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	h3	n	n1	w	s	1~	3~
MSG 07M	MSG 07	1"	1"	110	332	172	134	38	172	158	116	1.5	9	10.0	10.0
MSG 08M	MSG 08				356	191 *								10.8	10.2
MSG 10M	MSG 10				13.4	13.4									

(\*) h=210 mm for single phase versions at 110 V

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
MSG 07M	3.4 A	3.3 A	6.8 A
MSG 08M	4.1 A	4.0 A	8.2 A
MSG 10M	6.0 A	5.8 A	12.0 A

MODEL	VOLTAGE					
	230 V	400 V	690 V	240 V	415 V	720 V
MSG 07	2.5 A	1.5 A	0.9 A	2.4 A	1.4 A	0.8 A
MSG 08	3.4 A	2.0 A	1.2 A	3.3 A	1.9 A	1.1 A
MSG 10	4.5 A	2.6 A	1.5 A	4.3 A	2.5 A	1.4 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
MSG 07M	MSG 07	98	140
MSG 08M	MSG 08	98	140
MSG 10M	MSG 10	84	108

Clean water
 Domestic use
 Civil use



### PERFORMANCE RANGE

- Flow rate up to **130 l/min** (7.8 m<sup>3</sup>/h)
- Head up to **52 m**

### APPLICATION LIMITS

- Manometric suction lift up to **7 m**
- Liquid temperature between **-10 °C** and **+40 °C**
- Ambient temperature up to **+40 °C**
- Max. working pressure **7 bar**
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

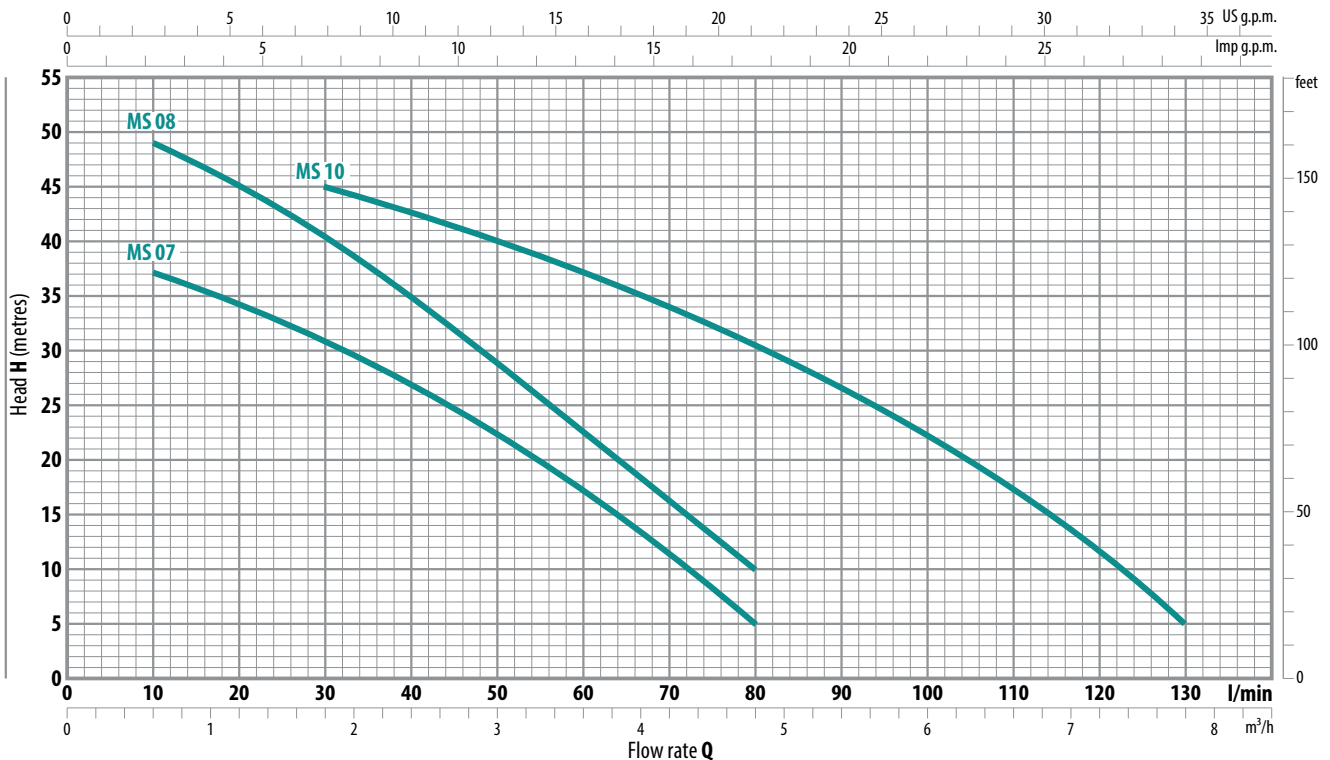
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup> | HS = 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate																		
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	0.3	0.6	0.9	1.2	1.5	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	7.2	7.8		
				l/min	0	5	10	15	20	25	30	40	50	60	70	80	90	100	120	130			
MS 07M	MS 07	0.45	0.60	H metres	40	38	37	36	34.5	33	31	27	22.5	17	11	5							
MS 08M	MS 08	0.55	0.75		52	50	49	47	44.5	42	40	34	28.5	22.5	16	10							
MS 10M	MS 10	0.75	1		50	50	49	48	47	46	45	42	39.5	37	34	30.5	26.5	22	11	5			

Q = Flow rate  
 H = Total manometric head  
 HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

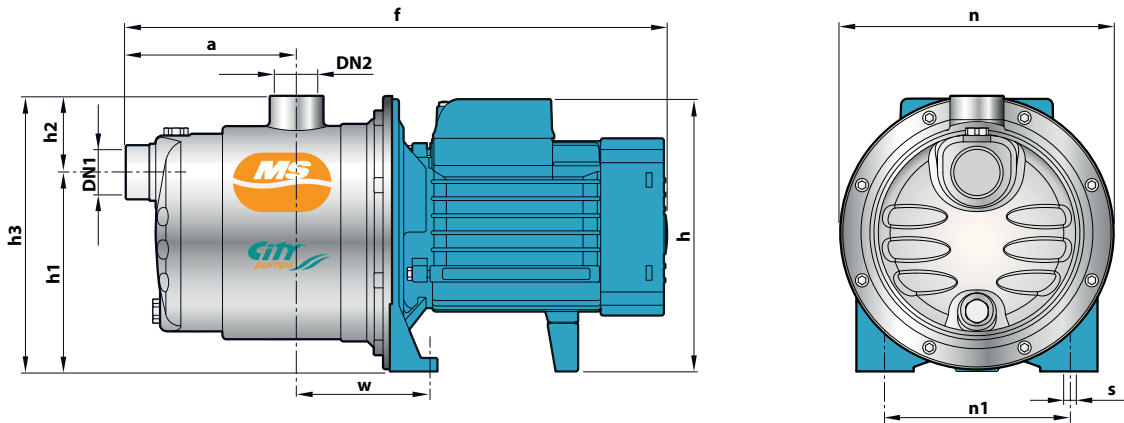
Suitable for use with clean water and with liquids that are not chemically aggressive towards the materials from which the pump is made. As a result of their quietness these pumps are widely used in domestic applications such as the distribution of water in combination with small and medium sized pressure tanks, and for the irrigation of gardens and orchards, etc.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Stainless steel AISI 304 complete with threaded ports in compliance with ISO 228/1
<b>IMPELLERS</b>	Noryl FE1520PW
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Ceramic - Graphite - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors up to P2=0.55kW in class IE2 and from P2=0.75kW in class IE3 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm										kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	h3	n	n1	w	s	1~	3~
MS 07M	MS 07	1"	1"	113	361	182	132	51	183	182	120	87	9	7.3	7.3
MS 08M	MS 08			138	386									8.3	7.7
MS 010M	MS 10			138	411	202 *								10.5	10.6

(\*) h=221 mm for single phase versions at 110V

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
MS 07M	3.3 A	3.1 A	6.6 A
MS 08M	4.1 A	4.0 A	8.2 A
MS 10M	6.0 A	5.8 A	12.0 A

MODEL	VOLTAGE					
	230 V	400 V	690 V	240 V	415 V	720 V
MS 07	2.5 A	1.5 A	0.9 A	2.4 A	1.4 A	0.8 A
MS 08	3.4 A	2.0 A	1.2 A	3.3 A	1.9 A	1.1 A
MS 10	4.5 A	2.6 A	1.5 A	4.3 A	2.5 A	1.4 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
MS 07M	MS 07	84	108
MS 08M	MS 08	72	108
MS 10M	MS 10	72	108

# JS 1

## SELF-PRIMING "JET" PUMPS



Clean water Domestic use



### PERFORMANCE RANGE

- Flow rate up to **60 l/min** (3.6 m<sup>3</sup>/h)
- Head up to **48 m**

### APPLICATION LIMITS

- Manometric suction lift up to **9 m** (HS)
- Liquid temperature between **-10 °C** and **+40 °C**
- Ambient temperature up to **+40 °C**
- Max. working pressure **6 bar**
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

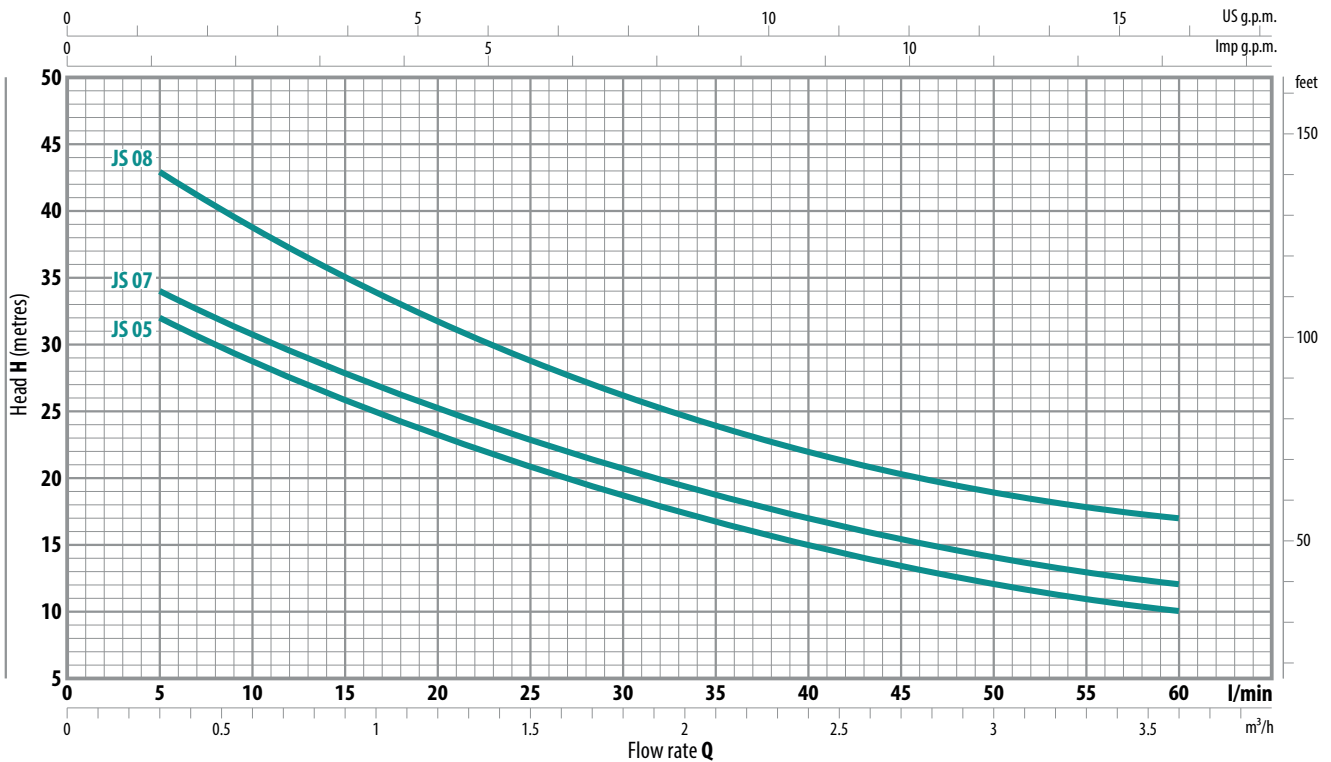
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup> | HS = 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate											
Single-phase	Three-phase	kW	HP		0	0.3	0.6	1.2	1.5	1.8	2.4	2.7	3.0	3.6		
				H metres	0	5	10	20	25	30	40	45	50	60		
JS 05M	JS 05	0.37	0.50		H metres	35	32	28.5	23.5	21	18.5	15	13.5	12	10	
JS 07M	JS 07	0.48	0.65	37		34	30.5	25.5	23	20.5	17	15.5	14	12		
JS 08M	JS 08	0.55	0.75	48		43	39	31.5	28.5	26	22	20.5	19	17		

Q = Flow rate  
H = Total manometric head  
HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

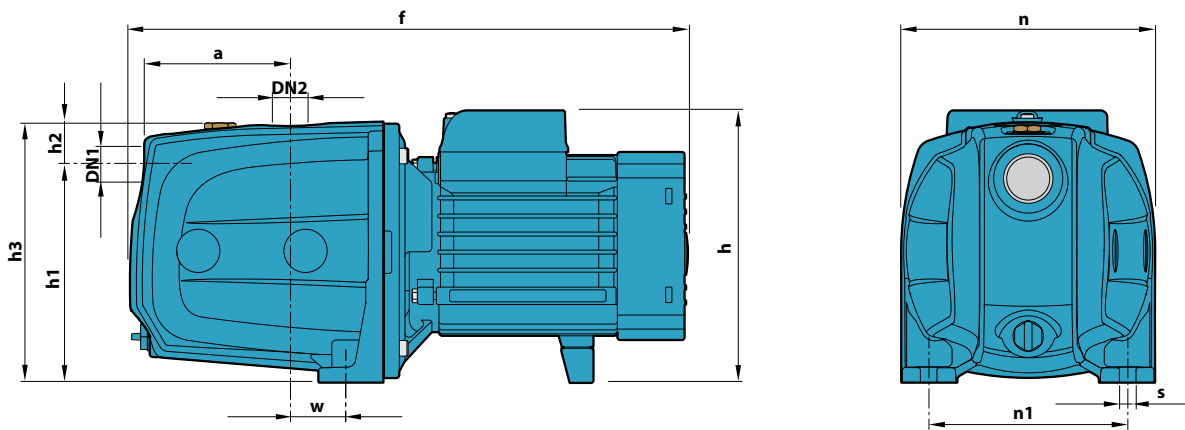
Suitable for use with clean water and with liquids that are not chemically aggressive towards the materials from which the pump is made. The self-priming JS pumps are designed to pump water even in cases where air is present. Because of their reliability and the fact that they are easy to use, they are recommended for use in domestic applications such as the distribution of water in combination with small or medium sized pressure tanks, and for the irrigation of gardens and orchards, etc.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded ports in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Ceramic - Graphite - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors in class IE2 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm										kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	h3	n	n1	w	s	1~	3~
JS 05M	JS 05	1"	1"	94	352	171	127	33	160	158	124	24	10	9.9	9.9
JS 07M	JS 07													10.0	10.0
JS 08M	JS 08													10.6	10.0

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase	230 V	240 V	110 V
JS 05M	2.8 A	2.7 A	5.6 A
JS 07M	3.1 A	3.0 A	6.0 A
JS 08M	3.9 A	3.8 A	7.3 A

MODEL	VOLTAGE					
	230 V	400 V	690 V	240 V	415 V	720 V
Three-phase	230 V	400 V	690 V	240 V	415 V	720 V
JS 05	2.1 A	1.2 A	0.7 A	2.0 A	1.1 A	0.6 A
JS 07	2.3 A	1.3 A	0.8 A	2.2 A	1.2 A	0.7 A
JS 08	3.0 A	1.7 A	1.0 A	2.9 A	1.6 A	0.9 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
JS 05M	JS 05	98	140
JS 07M	JS 07	98	140
JS 08M	JS 08	98	140

Clean water
 Domestic use
 Civil use



### PERFORMANCE RANGE

- Flow rate up to **70 l/min** (4.2 m<sup>3</sup>/h)
- Head up to **58 m**

### APPLICATION LIMITS

- Manometric suction lift up to **9 m** (HS)
- Liquid temperature between **-10 °C** and **+40 °C**
- Ambient temperature up to **+40 °C**
- Max. working pressure **6 bar**
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

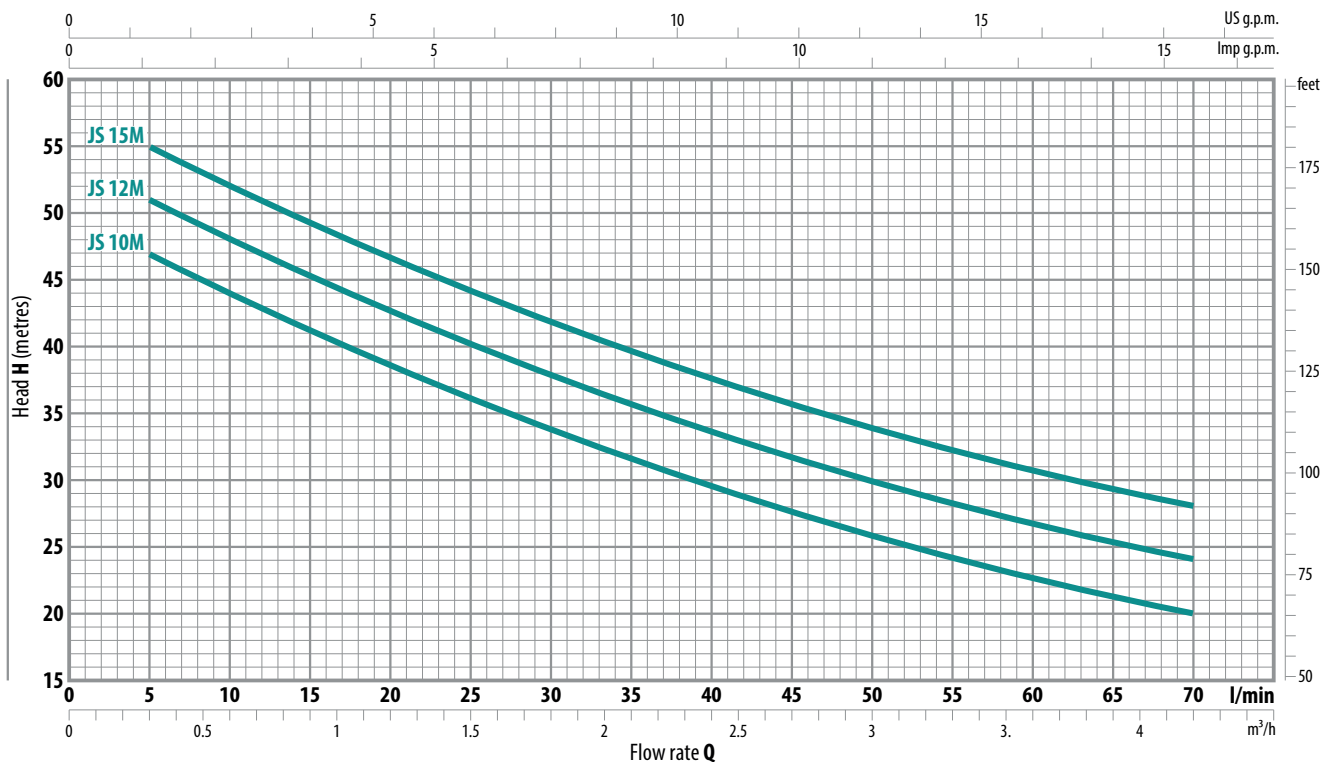
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup> | HS = 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate													
Single-phase	Three-phase	kW	HP		0	0.3	0.6	1.2	1.5	1.8	2.4	2.7	3.0	3.6	4.2			
				H metres	0	5	10	20	25	30	40	45	50	60	70			
JS 10M	JS 10	0.75	1		H metres	50	47	44	38.5	36	34	29.5	27.5	26	22.5	20		
JS 12M	JS 12	0.90	1.25	54		51	48	42.5	40	38	33.5	31.5	30	26.5	24			
JS 15M	JS 15	1.1	1.5	58		55	52	46.5	44	42	37.5	35.5	34	31	28			

Q = Flow rate  
 H = Total manometric head  
 HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.



## INSTALLATION AND USE

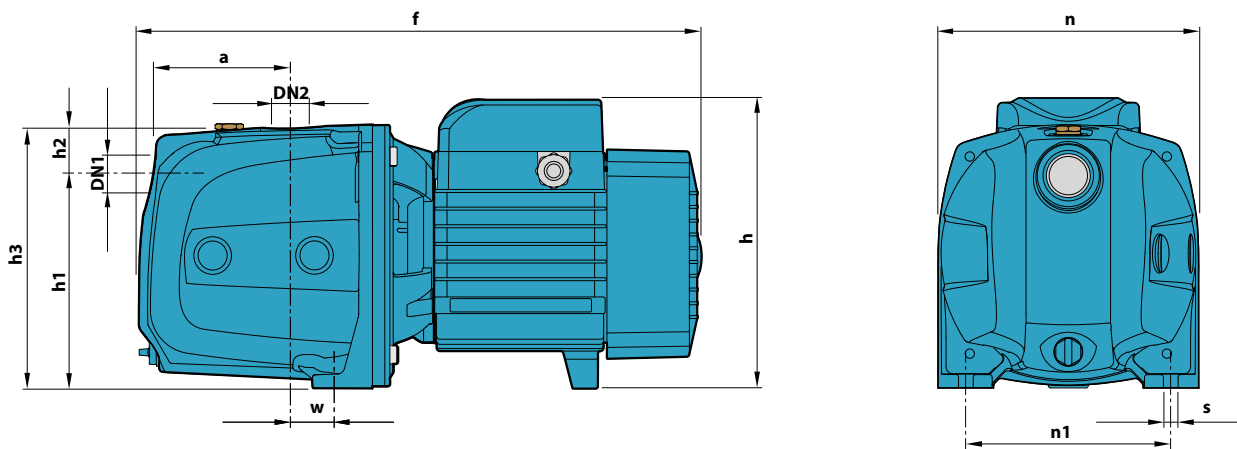
Suitable for use with clean water and liquids that are not chemically aggressive towards the materials from which the pump is made. The self-priming JS pumps are designed to pump water even in cases where air is present. Because of their reliability and the fact that they are easy to use, they are recommended for use in domestic applications such as the distribution of water in combination with small or medium sized pressure tanks, and for the irrigation of gardens and orchards, etc.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded ports in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Ceramic - Graphite - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors in class IE3 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm										kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	h3	n	n1	w	s	1~	3~
JS 10M	JS 10	1"	1"	96	388	201 *	147	33	180	180	142	22	10	13.0	13.0
JS 12M	JS 12													14.0	14.0
JS 15M	JS 15													14.2	14.2

(\*) h=220 mm for single phase versions at 110 V

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase	230 V	240 V	110 V
JS 10M	4.7 A	4.5 A	9.4 A
JS 12M	5.8 A	5.3 A	11.6 A
JS 15M	6.0 A	5.5 A	12.0 A

MODEL	VOLTAGE					
	230 V	400 V	690 V	240 V	415 V	720 V
Three-phase	230 V	400 V	690 V	240 V	415 V	720 V
JS 10	3.5 A	2.0 A	1.2 A	3.4 A	1.9 A	1.1 A
JS 12	4.6 A	2.7 A	1.6 A	4.4 A	2.5 A	1.5 A
JS 15	5.1 A	3.0 A	1.7 A	4.9 A	2.8 A	1.6 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
JS 10M	JS 10	72	96
JS 12M	JS 12	72	96
JS 15M	JS 15	72	96

# JET 1

## SELF-PRIMING "JET" PUMPS

 Clean water  Domestic use



### PERFORMANCE RANGE

- Flow rate up to **60 l/min** (3.6 m<sup>3</sup>/h)
- Head up to **48 m**

### APPLICATION LIMITS

- Manometric suction lift up to **9 m** (HS)
- Liquid temperature between **-10 °C** and **+40 °C**
- Ambient temperature up to **+40 °C**
- Max. working pressure **6 bar**
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

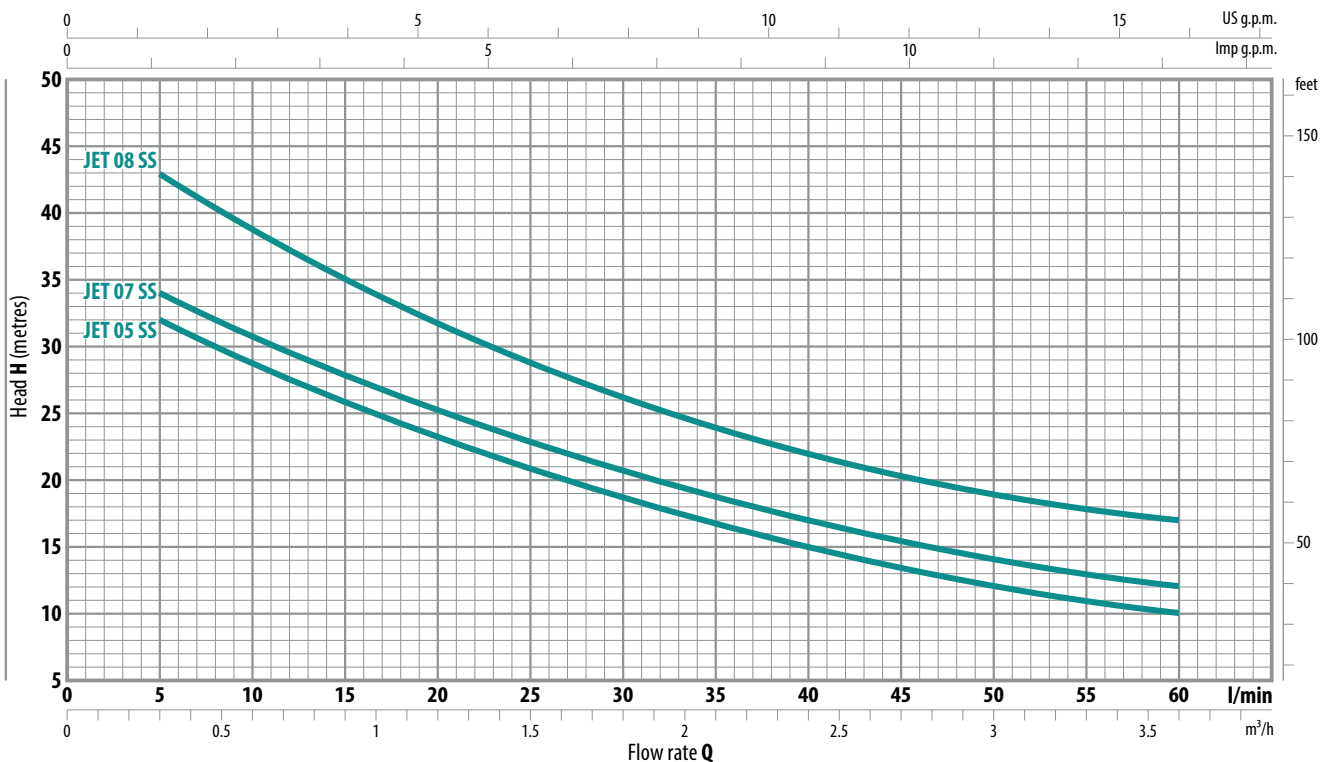
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup> | HS = 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate											
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	0.3	0.6	1.2	1.5	1.8	2.4	2.7	3.0	3.6	
				l/min	0	5	10	20	25	30	40	45	50	60		
JET 05M SS	JET 05 SS	0.37	0.50	H metres	35	32	28.5	23.5	21	18.5	15	13.5	12	10		
JET 07M SS	JET 07 SS	0.48	0.65		37	34	30.5	25.5	23	20.5	17	15.5	14	12		
JET 08M SS	JET 08 SS	0.55	0.75		48	43	39	31.5	28.5	26	22	20.5	19	17		

Q = Flow rate  
H = Total manometric head  
HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

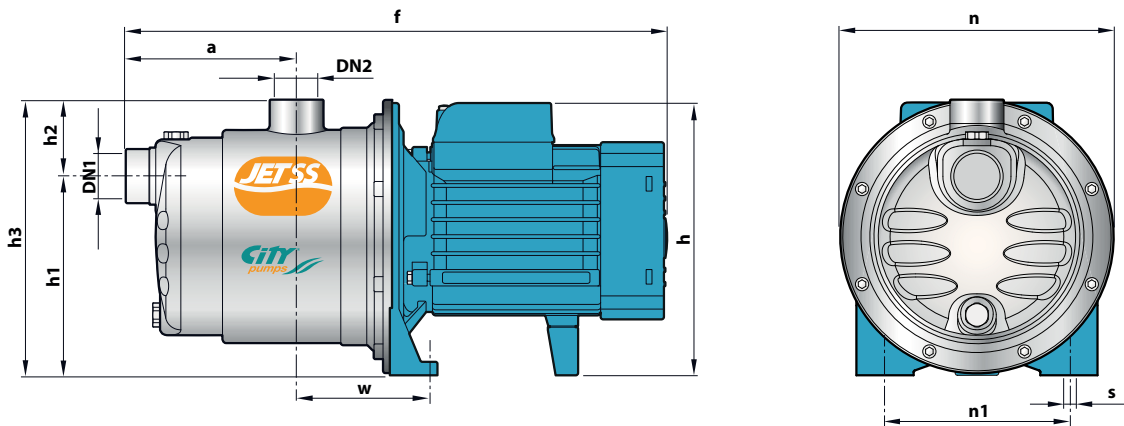
Suitable for use with clean water and with liquids that are not chemically aggressive towards the materials from which the pump is made. The self-priming **JET SS** pumps are designed to pump water even in cases where air is present. Because of their reliability and the fact that they are easy to use, they are recommended for use in domestic applications such as the distribution of water in combination with small or medium sized pressure tanks, and for the irrigation of gardens and orchards, etc.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Stainless steel AISI 304 complete with threaded ports in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Ceramic - Graphite - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors in class IE2 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm										kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	h3	n	n1	w	s	1~	3~
JET 05M SS	JET 05 SS	1"	1"	113	361	182	132	51	183	182	120	87	9	7.1	7.1
JET 07M SS	JET 07 SS													7.2	7.2
JET 08M SS	JET 08 SS													7.8	7.2

## ABSORPTION

MODEL	VOLTAGE		
Single-phase	230 V	240 V	110 V
JET 05M SS	2.8 A	2.7 A	5.6 A
JET 07M SS	3.1 A	3.0 A	6.0 A
JET 08M SS	3.9 A	3.8 A	7.3 A

MODEL	VOLTAGE					
Three-phase	230 V	400 V	690 V	240 V	415 V	720 V
JET 05 SS	2.1 A	1.2 A	0.7 A	2.0 A	1.1 A	0.6 A
JET 07 SS	2.3 A	1.3 A	0.8 A	2.2 A	1.2 A	0.7 A
JET 08 SS	3.0 A	1.7 A	1.0 A	2.9 A	1.6 A	0.9 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
JET 05M SS	JET 05 SS	84	120
JET 07M SS	JET 07 SS	84	120
JET 08M SS	JET 08 SS	84	120

# JET 2

## SELF-PRIMING "JET" PUMPS



Clean water
 Domestic use
 Civil use



### PERFORMANCE RANGE

- Flow rate up to **70 l/min** (4.2 m<sup>3</sup>/h)
- Head up to **60 m**

### APPLICATION LIMITS

- Manometric suction lift up to **9 m** (HS)
- Liquid temperature between **-10 °C** and **+40 °C**
- Ambient temperature up to **+40 °C**
- Max. working pressure **6 bar**
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

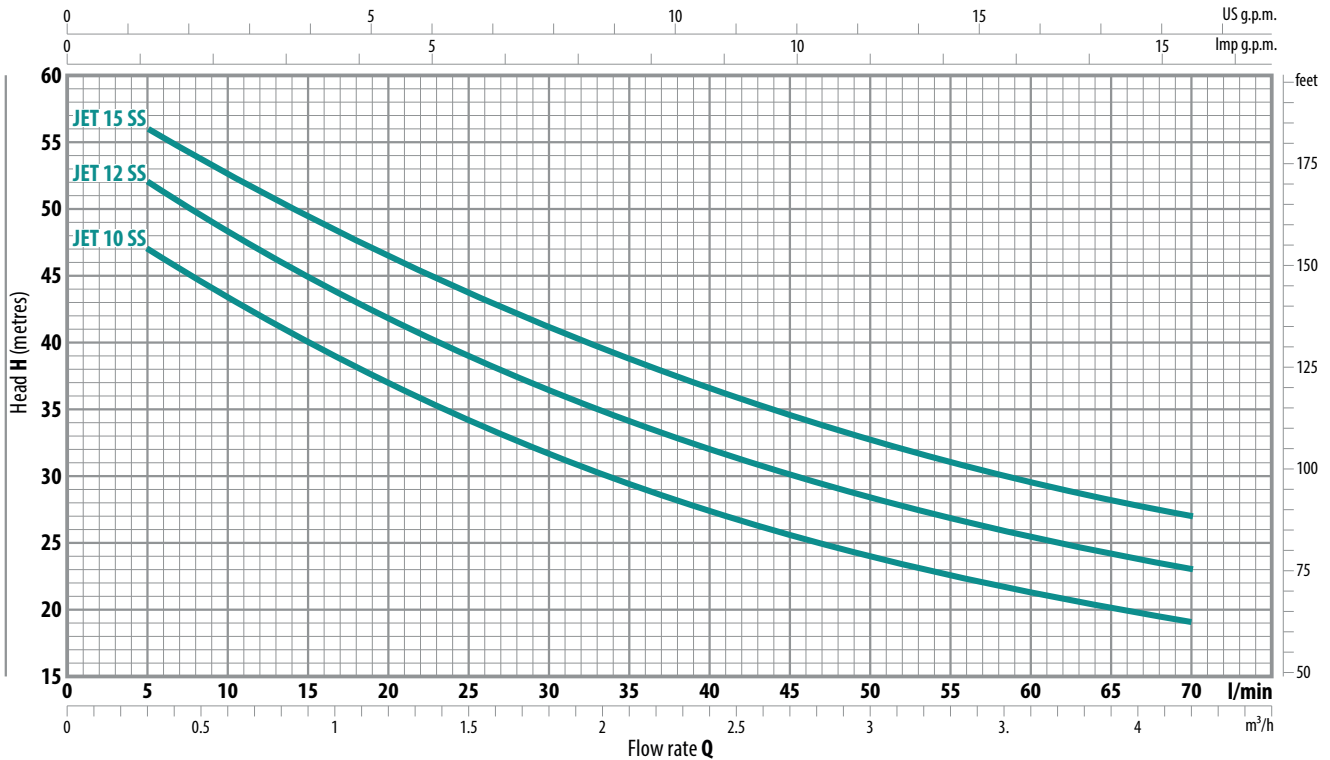
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup> | HS = 0 m



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate													
Single-phase	Three-phase	kW	HP		0	0.3	0.6	1.2	1.5	1.8	2.4	2.7	3.0	3.6	4.2			
				H metres	0	5	10	20	25	30	40	45	50	60	70			
JET 10M SS	JET 10 SS	0.75	1	H metres	50	47	43	37	34	31.5	27.5	25.5	24	21	19			
JET 12M SS	JET 12 SS	0.90	1.25		55	52	48	42	39	36	32	30	28.5	25.5	23			
JET 15M SS	JET 15 SS	1.1	1.5		60	56	53	46.5	43.5	41	36.5	34.5	32.5	29.5	27			

Q = Flow rate  
 H = Total manometric head  
 HS = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

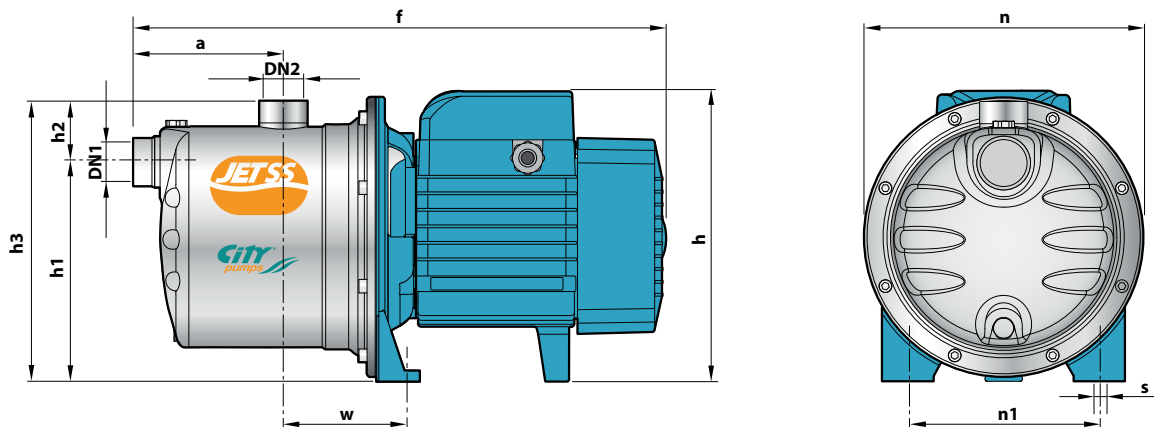
Suitable for use with clean water and with liquids that are not chemically aggressive towards the materials from which the pump is made. The self-priming **JET SS** pumps are designed to pump water even in cases where air is present. As a result of their reliability and the fact that they are easy to use, they are recommended for use in domestic applications such as the distribution of water in combination with small or medium sized pressure tanks, and for the irrigation of gardens and orchards, etc.

The pump should be installed in an enclosed environment or sheltered from inclement weather.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Stainless steel AISI 304 complete with threaded ports in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>MECHANICAL SEAL</b>	Ceramic - Graphite - NBR
<b>ELECTRIC MOTOR</b>	The three-phase pumps are fitted with high performance motors in class IE3 (IEC 60034-30)

## DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm										kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	h3	n	n1	w	s	1~	3~
JET 10M SS	JET 10 SS	1"	1"	111	393	217 *	162	46	208	208	142	91	10	10.2	10.2
JET 12M SS	JET 12 SS													11.2	11.2
JET 15M SS	JET 15 SS													11.5	11.5

(\*) **h=236 mm** for single phase versions at 110 V

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
JET 10M SS	4.7 A	4.5 A	9.4 A
JET 12M SS	5.8 A	5.3 A	11.6 A
JET 15M SS	6.2 A	5.7 A	12 A

MODEL	VOLTAGE					
	230 V	400 V	690 V	240 V	415 V	720 V
JET 10 SS	3.5 A	2.0 A	1.2 A	3.4 A	1.9 A	1.1 A
JET 12 SS	4.6 A	2.7 A	1.6 A	4.4 A	2.5 A	1.5 A
JET 15 SS	5.3 A	3.1 A	1.7 A	4.9 A	2.8 A	1.6 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
JET 10M SS	JET 10 SS	60	80
JET 12M SS	JET 12 SS	60	80
JET 15M SS	JET 15 SS	60	80

- Clean water
- Domestic use
- Civil use
- Agricultural use



### PERFORMANCE RANGE

- Flow rate up to **120 l/min** (7.2 m<sup>3</sup>/h)
- Head up to **95 m**

### APPLICATION LIMITS

- Maximum liquid temperature **+40 °C**
- Maximum sand content **150 g/m<sup>3</sup>**
- **20 m** maximum immersion depth (with a sufficiently long power cable)
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

- Float switch for single-phase versions

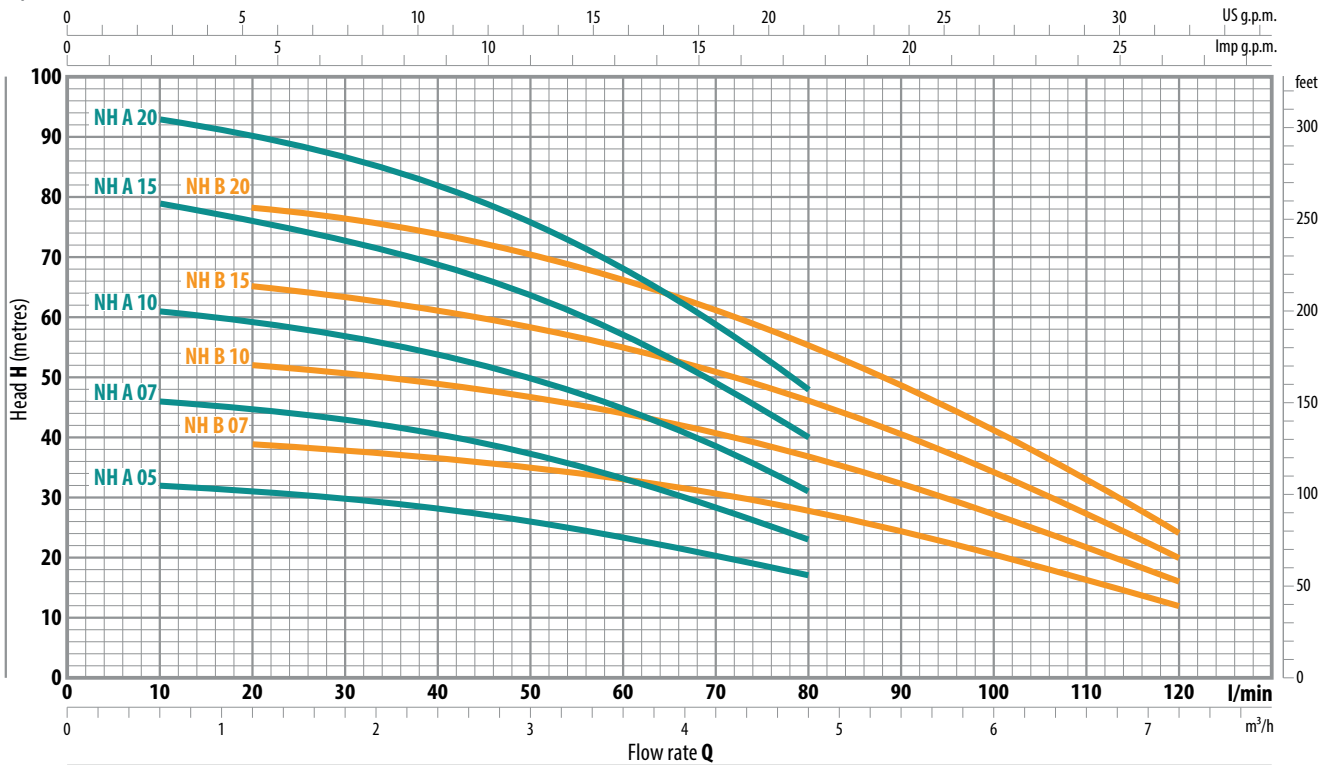
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate Q												
Single-phase	Three-phase	kW	HP		0	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	6.0	6.6	7.2	
NH A 05M + float	NH A 05	0.37	0.5	H metres	33	32	31	29.5	28	26	23.5	20.5	17				
NH A 07M + float	NH A 07	0.55	0.75		48	46	44.5	42.8	40.5	37.5	33.5	29	23				
NH A 10M + float	NH A 10	0.75	1		63	61	59	57	54	50	45	39	31				
NH A 15M + float	NH A 15	1.1	1.5		81	79	75.5	73	68.5	63.5	57.5	49.5	40				
NH A 20M + float	NH A 20	1.5	2		95	93	90	87	82	76	68.5	59.5	48				
NH B 07M + float	NH B 07	0.55	0.75		40	-	39	38	37	35	33	30.5	28	20.5	16.5	12	
NH B 10M + float	NH B 10	0.75	1		53	-	52	50.5	49	46.5	44	40.5	37	27.5	22	16	
NH B 15M + float	NH B 15	1.1	1.5		67	-	65	63.5	61.5	58	55	50.5	46.5	34	27.5	20	
NH B 20M + float	NH B 20	1.5	2		80	-	78	76	74	70	66	61	56	41	33	24	

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.  
→ Single-phase pumps without float switch on request

## INSTALLATION AND USE

Because of their high efficiency and reliability they are suitable for use with clean water in domestic, civil and agricultural applications such as the distribution of water in combination with pressure tanks, for the irrigation of gardens and orchards and for pressure boosting, etc.

## OPTIONS AVAILABLE ON REQUEST

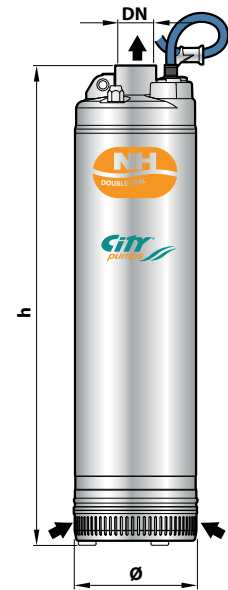
Pumps without float switch.

## CONSTRUCTION CHARACTERISTICS

<b>EXTERNAL SLEEVE</b>	Stainless steel AISI 304 complete with threaded delivery port in compliance with ISO 228/1
<b>MOTOR SLEEVE</b>	Stainless steel AISI 304
<b>IMPELLERS AND DIFFUSERS</b>	Noryl FE1520PW
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Ceramic - Graphite - NBR <b>Pump side:</b> Silicon carbide - Graphite - NBR
<b>POWER CABLE</b>	DRINCABLE® type 20 m long power cable

## DIMENSIONS AND WEIGHT

MODEL		PORT DN	N. STAGES	DIMENSIONS mm		kg	
Single-phase	Three-phase			∅	h	1~	3~
NH A 05M + float	NH A 05	1 1/4"	2	135	459	14.0	13.8
NH A 07M + float	NH A 07		3		486	14.5	14.3
NH A 10M + float	NH A 10		4		543	16.1	15.3
NH A 15M + float	NH A 15		5		570	17.5	16.7
NH A 20M + float	NH A 20		6		617	19.8	18.8
NH B 07M + float	NH B 07		3		486	14.5	14.3
NH B 10M + float	NH B 10		4		543	16.1	15.3
NH B 15M + float	NH B 15		5		570	17.5	16.7
NH B 20M + float	NH B 20		6		617	19.8	18.8



## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
<b>Single-phase</b>			
NH A 05M + float	4.4 A	4.3 A	8.8 A
NH A 07M + float	5.4 A	5.2 A	10.8 A
NH A 10M + float	6.2 A	6.0 A	12.4 A
NH A 15M + float	7.6 A	7.3 A	15.2 A
NH A 20M + float	8.8 A	8.5 A	17.6 A
NH B 07M + float	5.0 A	4.8 A	10.0 A
NH B 10M + float	6.2 A	6.0 A	12.4 A
NH B 15M + float	7.2 A	6.9 A	14.4 A
NH B 20M + float	8.7 A	8.4 A	17.4 A

MODEL	VOLTAGE			
	230 V	400 V	240 V	415 V
<b>Three-phase</b>				
NH A 05	2.8 A	1.6 A	2.7 A	1.5 A
NH A 07	3.3 A	1.9 A	3.2 A	1.8 A
NH A 10	4.0 A	2.3 A	3.9 A	2.2 A
NH A 15	5.0 A	2.9 A	4.9 A	2.8 A
NH A 20	5.7 A	3.3 A	5.5 A	3.2 A
NH B 07	3.2 A	1.8 A	3.1 A	1.7 A
NH B 10	3.8 A	2.2 A	3.7 A	2.1 A
NH B 15	4.9 A	2.8 A	4.7 A	2.7 A
NH B 20	5.6 A	3.2 A	5.4 A	3.1 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
NH A 05M + float	NH A 05	30	54
NH A 07M + float	NH A 07	30	54
NH A 10M + float	NH A 10	30	54
NH A 15M + float	NH A 15	25	45
NH A 20M + float	NH A 20	25	45
NH B 07M + float	NH B 07	30	54
NH B 10M + float	NH B 10	30	54
NH B 15M + float	NH B 15	25	45
NH B 20M + float	NH B 20	25	45

# MSP4

## 4" MONOBLOCK SUBMERSIBLE PUMPS



-  Clean water
-  Domestic use
-  Civil use
-  Agricultural use



### PERFORMANCE RANGE

- Flow rate up to **150 l/min** (9 m<sup>3</sup>/h)
- Head up to **128 m**

### APPLICATION LIMITS

- Maximum liquid temperature **+35 °C**
- Maximum sand content **150 g/m<sup>3</sup>**
- Maximum immersion depth of **60 m** with a sufficiently long power cable
- Vertical and horizontal installation
- Starts/hour: **20** at regular intervals
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### INSTALLATION AND USE

Suitable for pumping clean water from boreholes that contain sand (up to 150 g/m<sup>3</sup>). Because of their high efficiency and reliability they are suitable for use in domestic applications such as domestic water supply as part of a pressure supply and for irrigation, etc.

### CONSTRUCTION CHARACTERISTICS

<b>DELIVERY BODY AND EXTERNAL SLEEVE</b>	Stainless steel AISI 304 complete with threaded delivery port in compliance with ISO 228/1.
<b>IMPELLERS</b>	Lexan 141-R
<b>DIFFUSERS</b>	Noryl FE1520PW
<b>STAGE CASING</b>	Stainless steel AISI 304
<b>PUMP SHAFT</b>	Stainless steel AISI 304
<b>DRIVE COUPLING</b>	Stainless steel AISI 316L
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 1.4104 (AISI 431 for 1.1 kW single-phase)
<b>MOTOR SLEEVE</b>	Stainless steel AISI 304
<b>TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Ceramic - Graphite - NBR <b>Pump side:</b> Silicon carbide - Graphite - NBR
<b>POWER CABLE</b>	PBS-P type 20 m long power cable

### ABSORPTION

MODEL	VOLTAGE	
	230 V	240 V
<b>Single-phase</b>		
<b>MSP – 0.55 kW</b>	<b>5.0 A</b>	<b>4.8 A</b>
<b>MSP – 0.75 kW</b>	<b>6.0 A</b>	<b>5.8 A</b>
<b>MSP – 1.1 kW</b>	<b>8.0 A</b>	<b>7.8 A</b>

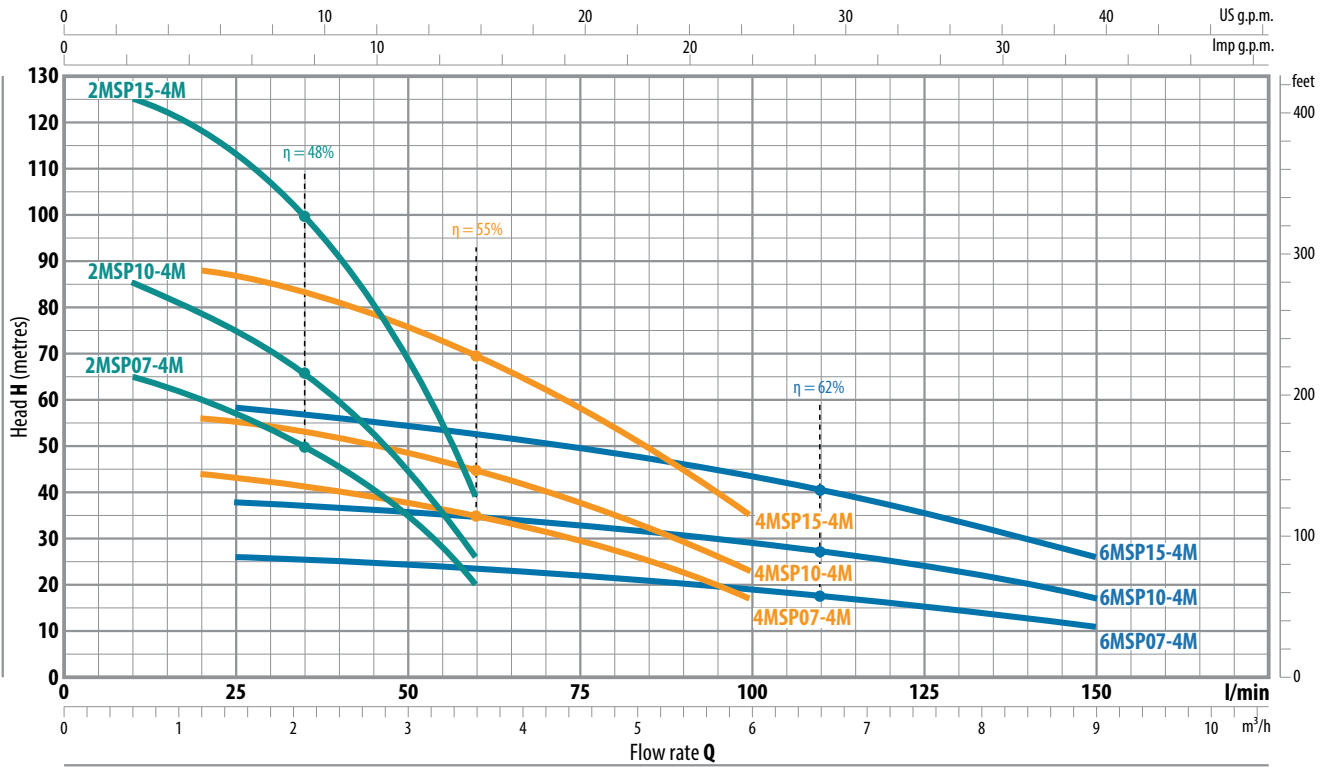
### PALLETIZATION

MODEL	GROUPAGE/CONTAINER
Single-phase	n. pumps
<b>2MSP07-4M</b>	<b>55</b>
<b>2MSP10-4M</b>	<b>33</b>
<b>2MSP15-4M</b>	<b>33</b>
<b>4MSP07-4M</b>	<b>55</b>
<b>4MSP10-4M</b>	<b>55</b>
<b>4MSP15-4M</b>	<b>33</b>
<b>6MSP07-4M</b>	<b>55</b>
<b>6MSP10-4M</b>	<b>55</b>
<b>6MSP15-4M</b>	<b>33</b>



# CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL Single-phase	POWER (P <sub>2</sub> )		Q	Flow rate						
	kW	HP		m <sup>3</sup> /h	l/min	0	0.6	1.2	1.8	2.4
2MSP07-4M	0.55	0.75	H metres	66	65	60	54	46	35	20
2MSP10-4M	0.75	1		86	85	79	71	60	45	26
2MSP15-4M	1.1	1.5		128	125	118	108	91	70	39

MODEL Single-phase	POWER (P <sub>2</sub> )		Q	Flow rate										
	kW	HP		m <sup>3</sup> /h	l/min	0	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4
4MSP07-4M	0.55	0.75	H metres	46	44	42	40	38	35	31.5	27	23	17	
4MSP10-4M	0.75	1		60	56	54.5	52	49	45	40.5	35	29	23	
4MSP15-4M	1.1	1.5		92	88	85	81	76	70	63	54.5	45	35	

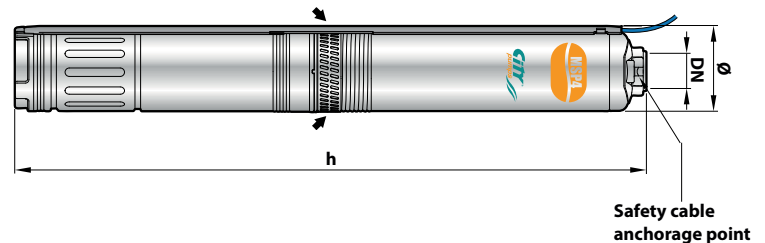
MODEL Single-phase	POWER (P <sub>2</sub> )		Q	Flow rate						
	kW	HP		m <sup>3</sup> /h	l/min	0	1.5	3.0	4.5	6.0
6MSP07-4M	0.55	0.75	H metres	27	26	24	22	19	15	11
6MSP10-4M	0.75	1		40	38	36	33	29	24	17
6MSP15-4M	1.1	1.5		61	58	54	50	44	35	26

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## DIMENSIONS AND WEIGHT

MODEL Single-phase	PORT DN	DIMENSIONS mm			kg
		N. STAGES	∅	h	
2MSP07-4M	1 1/4"	10	100	705	12.5
2MSP10-4M		13		786	14.3
2MSP15-4M		20		986	17.8
4MSP07-4M		7		674	12.1
4MSP10-4M		9		743	13.8
4MSP15-4M		14		925	17.0
6MSP07-4M		4		641	10.7
6MSP10-4M		6		725	13.3
6MSP15-4M		9		887	16.5



# SP4

## 4" SUBMERSIBLE PUMPS



 Clean water  
(Maximum sand content 150 g/m<sup>3</sup>)

 Domestic use

 Civil use



### PERFORMANCE RANGE

- Flow rate up to **340 l/min** (20.4 m<sup>3</sup>/h)
- Head up to **405 m**

### APPLICATION LIMITS

- Maximum liquid temperature **+35 °C**
- Maximum sand content **150 g/m<sup>3</sup>**
- **100 m** immersion limit
- Installation:
  - vertical
  - horizontal, with the following limits:
    - 1SP4 - 1.5SP4 - 2SP4 - 4SP4 up to **27 stages**
    - 6SP4 - 8SP4 up to **17 stages**
    - 10SP4 - 12SP4 - 15SP4 up to **12 stages**
- Starts/hour: **20** at regular intervals
- Minimum flow rate for motor cooling **8 cm/s**
- Continuous service **S1**

### INSTALLATION AND USE

Suitable for use with clean water with a sand content of no more than 150 g/m<sup>3</sup>. Because of their high efficiency and reliability, they are suitable for use in domestic, civil and industrial applications such as for the distribution of water in combination with pressure tanks, for irrigation, for washing plants and for pressure boosting in fire-fighting sets, etc..

### CONSTRUCTION AND SAFETY STANDARDS

- Single-phase 230 V - 50 Hz
- Three-phase 400 V - 50 Hz

The single-phase versions supplied with a capacitor included in the packaging.

**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



### CONSTRUCTION CHARACTERISTICS

<b>DELIVERY BODY</b>	Precision cast stainless steel AISI 304 complete with threaded delivery port in compliance with ISO 228/1
<b>IMPELLER</b>	Lexan 141-R for 1-1.5-2-4-6-8 SP4 Noryl FE1520PW for 10-12-15 SP4
<b>DIFFUSER</b>	Noryl FE1520PW
<b>STAGE CASING</b>	Stainless steel AISI 304
<b>PUMP SHAFT</b>	Stainless steel AISI 304
<b>DRIVE COUPLING</b>	Stainless steel AISI 316L up to 2.2 kW; Stainless steel AISI 304 for higher powers
<b>MOTOR 4"</b>	Oil filled motor Jacket: AISI 316 stainless steel Shaft: "DUPLEX" stainless steel
<b>POWER CABLE</b>	Length of power cable: – for P2 from 0.37 to 3 kW: 1.7 m – for P2 from 4 to 7.5 kW: 2.7 m

### OPTIONS AVAILABLE ON REQUEST

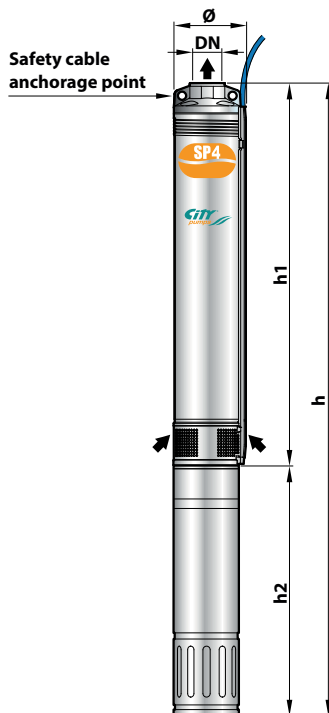
- Kit of cooling jacket complete with filter and supports



## DIMENSIONS AND WEIGHT

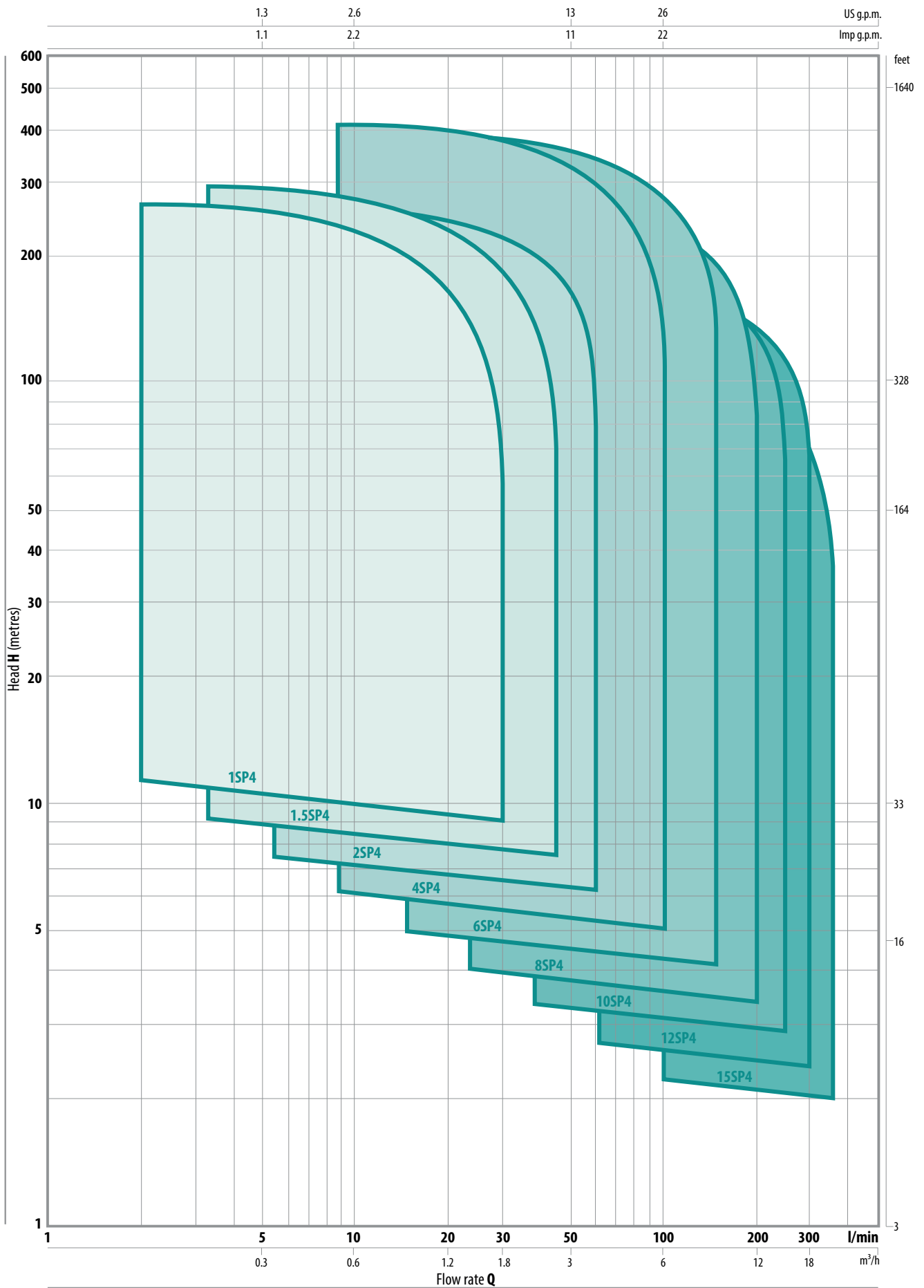
MODEL	PORT	DIMENSIONS mm				kg
		Ø	h1	h2	h	
<b>Single-phase</b>	<b>DN</b>					
1SP05-4M/R	1 1/4"	98	400	311	711	11.2
1SP07-4M/R			517	331	848	13.2
1SP10-4M/R			646	356	1002	15.9
1SP15-4M/R			856	396	1252	19.6
1SP20-4M/R			1065	437	1502	23.1
1.5SP05-4M/R			308	311	619	10.3
1.5SP07-4M/R			400	331	731	11.7
1.5SP10-4M/R			499	356	855	14.2
1.5SP15-4M/R			646	396	1042	17.5
1.5SP20-4M/R			800	437	1237	20.9
1.5SP30-4M/R			1134	492	1626	28.1
2SP05-4M/R			290	311	601	10.1
2SP07-4M/R			345	331	676	11.4
2SP10-4M/R			400	356	756	13.3
2SP15-4M/R			554	396	950	16.6
2SP20-4M/R			683	437	1120	19.5
2SP30-4M/R			929	492	1421	25.4
4SP07-4M			314	331	645	11.0
4SP10-4M/R			358	356	714	12.8
4SP15-4M/R			468	396	864	15.6
4SP20-4M/R			580	437	1017	18.3
4SP30-4M/R			756	492	1248	23.2
6SP07-4M/R			281	331	612	10.9
6SP10-4M/R			341	356	697	12.5
6SP15-4M/R			431	396	827	15.0
6SP20-4M/R			576	437	1013	17.8
6SP30-4M/R			695	492	1187	22.2
8SP10-4M/R			281	356	637	12.0
8SP15-4M/R			371	396	767	14.4
8SP20-4M/R			431	437	868	16.4
8SP30-4M/R			576	492	1068	21.0
10SP10-4M/R			616	356	972	14.0
10SP15-4M/R	762	396	1158	16.9		
10SP20-4M/R	981	437	1418	20.2		
10SP30-4M/R	1346	492	1838	26.4		
12SP10-4M/R	543	356	899	13.4		
12SP15-4M/R	689	396	1085	16.3		
12SP20-4M/R	835	437	1272	19.0		
12SP30-4M/R	1200	492	1692	25.2		
15SP15-4M/R	616	396	1012	15.7		
15SP20-4M/R	762	437	1199	18.4		
15SP30-4M/R	1054	492	1546	24.0		

MODEL	PORT	DIMENSIONS mm				kg
		Ø	h1	h2	h	
<b>Three-phase</b>	<b>DN</b>					
1SP05-4/R	1 1/4"	98	400	311	711	11.2
1SP07-4/R			517	331	848	13.2
1SP10-4/R			646	356	1002	15.9
1SP15-4/R			856	371	1227	18.8
1SP20-4/R			1065	396	1461	21.6
1.5SP05-4/R			308	311	619	10.3
1.5SP07-4/R			400	331	731	11.7
1.5SP10-4/R			499	356	855	14.2
1.5SP15-4/R			646	371	1017	16.7
1.5SP20-4/R			800	396	1196	19.4
1.5SP30-4/R			1134	437	1571	24.9
2SP05-4/R			290	311	601	10.1
2SP07-4/R			345	331	676	11.4
2SP10-4/R			400	356	756	13.3
2SP15-4/R			554	371	925	15.8
2SP20-4/R			683	396	1079	18.0
2SP30-4/R			929	437	1366	22.2
4SP07-4/R			314	331	645	11.0
4SP10-4/R			358	356	714	12.8
4SP15-4/R			468	371	839	14.8
4SP20-4/R			580	396	976	16.8
4SP30-4/R			756	437	1193	20.0
4SP40-4/R			978	450	1428	23.9
4SP55-4/R			1295	505	1800	31.1
4SP75-4/R			1652	700	2352	44.1
6SP07-4/R			281	331	612	10.9
6SP10-4/R			341	356	697	12.5
6SP15-4/R			431	371	802	14.2
6SP20-4/R			576	396	972	16.3
6SP30-4/R			695	437	1132	19.0
6SP40-4/R			900	450	1350	22.5
6SP55-4/R			1164	505	1669	27.7
6SP75-4/R	1519	700	2219	40.4		
6SP100-4/R	2063	800	2863	51.0		
8SP10-4/R	281	356	637	12.0		
8SP15-4/R	371	371	742	13.6		
8SP20-4/R	431	396	827	14.9		
8SP30-4/R	576	437	1013	17.8		
8SP40-4/R	695	450	1145	20.4		
8SP55-4/R	900	505	1405	25.4		
8SP75-4/R	1164	700	1864	36.5		
8SP100-4/R	1519	800	2319	43.9		
10SP10-4/R	616	356	972	14.0		
10SP15-4/R	762	371	1133	16.1		
10SP20-4/R	981	396	1377	18.7		
10SP30-4/R	1346	437	1783	23.2		
10SP40-4/R	1784	450	2234	28.2		
10SP55-4/R	2368	505	2873	36.1		
10SP75-4/R	3171	700	3871	51.2		
12SP10-4/R	543	356	899	13.4		
12SP15-4/R	689	371	1060	15.5		
12SP20-4/R	835	396	1231	17.5		
12SP30-4/R	1200	437	1637	22.0		
12SP40-4/R	1565	450	2015	26.5		
12SP55-4/R	2003	505	2508	32.9		
12SP75-4/R	2660	700	3360	46.9		
15SP15-4/R	616	371	987	14.9		
15SP20-4/R	762	396	1158	16.9		
15SP30-4/R	1054	437	1491	20.8		
15SP40-4/R	1346	450	1796	24.7		
15SP55-4/R	1711	505	2216	30.5		
15SP75-4/R	2295	700	2995	43.9		



# PERFORMANCE RANGE

50 Hz |  $n = 2900 \text{ min}^{-1}$



PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>

MODEL		POWER (P <sub>2</sub> )		Q	H metres							
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	0.3	0.6	0.9	1.2	1.5	1.8
1SP05-4M /R	1SP05-4 /R	0.37	0.50	0	0	5	10	15	20	25	30	
1SP07-4M /R	1SP07-4 /R	0.55	0.75	77	73	67	60	51	40	26		
1SP10-4M /R	1SP10-4 /R	0.75	1	107	101	93	83	71	55	36		
1SP15-4M /R	1SP15-4 /R	1.1	1.5	148	140	129	115	98	77	50		
1SP20-4M /R	1SP20-4 /R	1.5	2	206	197	182	161	136	107	70		
				266	254	234	207	176	137	90		
				0	0.3	0.9	1.5	1.8	2.1	2.7		
				0	5	15	25	30	35	45		
1.5SP05-4M /R	1.5SP05-4 /R	0.37	0.50	50	48	44	36	32	26	14		
1.5SP07-4M /R	1.5SP07-4 /R	0.55	0.75	81	78	71	59	52	43	23		
1.5SP10-4M /R	1.5SP10-4 /R	0.75	1	106	102	93	78	68	56	30		
1.5SP15-4M /R	1.5SP15-4 /R	1.1	1.5	156	151	136	115	100	83	45		
1.5SP20-4M /R	1.5SP20-4 /R	1.5	2	200	193	175	147	128	106	58		
1.5SP30-4M /R	1.5SP30-4 /R	2.2	3	288	277	250	211	184	153	83		
				0	0.6	1.2	1.8	2.4	3.0	3.6		
				0	10	20	30	40	50	60		
2SP05-4M /R	2SP05-4 /R	0.37	0.50	48	46	44	39	33	25	14		
2SP07-4M /R	2SP07-4 /R	0.55	0.75	70	68	63	57	48	36	20		
2SP10-4M /R	2SP10-4 /R	0.75	1	90	88	82	74	62	46	26		
2SP15-4M /R	2SP15-4 /R	1.1	1.5	135	130	122	111	93	71	39		
2SP20-4M /R	2SP20-4 /R	1.5	2	180	173	164	150	126	96	52		
2SP30-4M /R	2SP30-4 /R	2.2	3	260	250	238	216	183	138	75		
				0	1.2	2.4	3.0	3.6	4.8	6.0		
				0	20	40	50	60	80	100		
4SP07-4M	4SP07-4 /R	0.55	0.75	46	44	40	38	35	28	17		
4SP10-4M /R	4SP10-4 /R	0.75	1	60	56	52	49	45	35	23		
4SP15-4M /R	4SP15-4 /R	1.1	1.5	92	88	81	76	70	55	35		
4SP20-4M /R	4SP20-4 /R	1.5	2	120	112	104	98	90	70	45		
4SP30-4M /R	4SP30-4 /R	2.2	3	170	162	150	141	130	101	63		
-	4SP40-4 /R	3	4	230	220	202	190	175	137	85		
-	4SP55-4 /R	4	5.5	308	293	269	249	230	181	117		
-	4SP75-4 /R	5.5	7.5	405	385	350	325	300	235	155		
				0	1.5	3.0	4.5	6.0	7.5	9.0		
				0	25	50	75	100	125	150		
6SP07-4M /R	6SP07-4 /R	0.55	0.75	27	26	24	22	19	15	11		
6SP10-4M /R	6SP10-4 /R	0.75	1	40	38	36	33	29	24	17		
6SP15-4M /R	6SP15-4 /R	1.1	1.5	61	58	54	50	44	35	26		
6SP20-4M /R	6SP20-4 /R	1.5	2	87	83	78	71	61	49	35		
6SP30-4M /R	6SP30-4 /R	2.2	3	114	107	100	91	79	62	45		
-	6SP40-4 /R	3	4	154	148	138	128	112	92	67		
-	6SP55-4 /R	4	5.5	210	200	186	170	149	121	86		
-	6SP75-4 /R	5.5	7.5	285	276	258	240	212	170	124		
-	6SP100-4 /R	7.5	10	380	365	340	315	280	233	173		
				0	2.4	4.8	6.0	7.2	9.6	12.0		
				0	40	80	100	120	160	200		
8SP10-4M /R	8SP10-4 /R	0.75	1	27	26	24	23	22	17	10		
8SP15-4M /R	8SP15-4 /R	1.1	1.5	47	46	43	41	38	29	16		
8SP20-4M /R	8SP20-4 /R	1.5	2	60	58	55	52	48	37	21		
8SP30-4M /R	8SP30-4 /R	2.2	3	87	85	80	76	70	54	30		
-	8SP40-4 /R	3	4	112	110	104	99	92	70	40		
-	8SP55-4 /R	4	5.5	153	150	141	134	124	95	53		
-	8SP75-4 /R	5.5	7.5	205	200	190	181	167	128	72		
-	8SP100-4 /R	7.5	10	280	272	257	244	225	175	98		
				0	3.0	6.0	7.5	9.0	12	15.0		
				0	50	100	125	150	200	250		
10SP10-4M/R	10SP10-4/R	0.75	1	33	29	25	23	20.5	13.5	4		
10SP15-4M/R	10SP15-4/R	1.1	1.5	43	39	35	31	27.5	18	6		
10SP20-4M/R	10SP20-4/R	1.5	2	60	54	47	42	37.5	25	8		
10SP30-4M/R	10SP30-4/R	2.2	3	87	79	69	62	55	36.5	11		
-	10SP40-4/R	3	4	120	109	95	85	76	50	15		
-	10SP55-4/R	4	5.5	163	148	129	116	103	68	21		
-	10SP75-4/R	5.5	7.5	223	203	176	159	141	93	29		
				0	3.0	6.0	8.4	12	15.6	18.0		
				0	50	100	140	200	260	300		
12SP10-4M/R	12SP10-4/R	0.75	1	27	25	22.5	20.5	16.5	10.7	5		
12SP15-4M/R	12SP15-4/R	1.1	1.5	38	35	31.5	28.5	23.2	15	7		
12SP20-4M/R	12SP20-4/R	1.5	2	48	45	40.7	36.7	29.8	19.2	9		
12SP30-4M/R	12SP30-4/R	2.2	3	75	70	63.3	57	46.5	30	14		
-	12SP40-4/R	3	4	102	95	85.8	77.5	63	40.5	19		
-	12SP55-4/R	4	5.5	135	125	113	102	83	53.5	25		
-	12SP75-4/R	5.5	7.5	183	170	153.7	138.7	112.8	72.7	34		
				0	3.0	6.0	9.0	12	15	20.4		
				0	50	100	150	200	250	340		
15SP15-4M/R	15SP15-4/R	1.1	1.5	32	30	27.5	24.5	21.5	17.5	3		
15SP20-4M/R	15SP20-4/R	1.5	2	43	40	36.5	32.5	28.5	23.5	5		
15SP30-4M/R	15SP30-4/R	2.2	3	64	60	54.5	49	43	35	7		
-	15SP40-4/R	3	4	86	80	73	65.5	57.5	46.5	9		
-	15SP55-4/R	4	5.5	113	105	95.5	86	75.5	61	12		
-	15SP75-4/R	5.5	7.5	156	145	132	119	104.5	84.5	17		

Clean water

Domestic use

Civil use



### PERFORMANCE RANGE

- Flow rate up to **120 l/min** (7.2 m<sup>3</sup>/h)
- Head up to **42 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Suction down to **22 mm** above ground level
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps is complete with:

- power cable
- float switch
- hose connector Ø 35 mm
- complete connector with flap-check valve

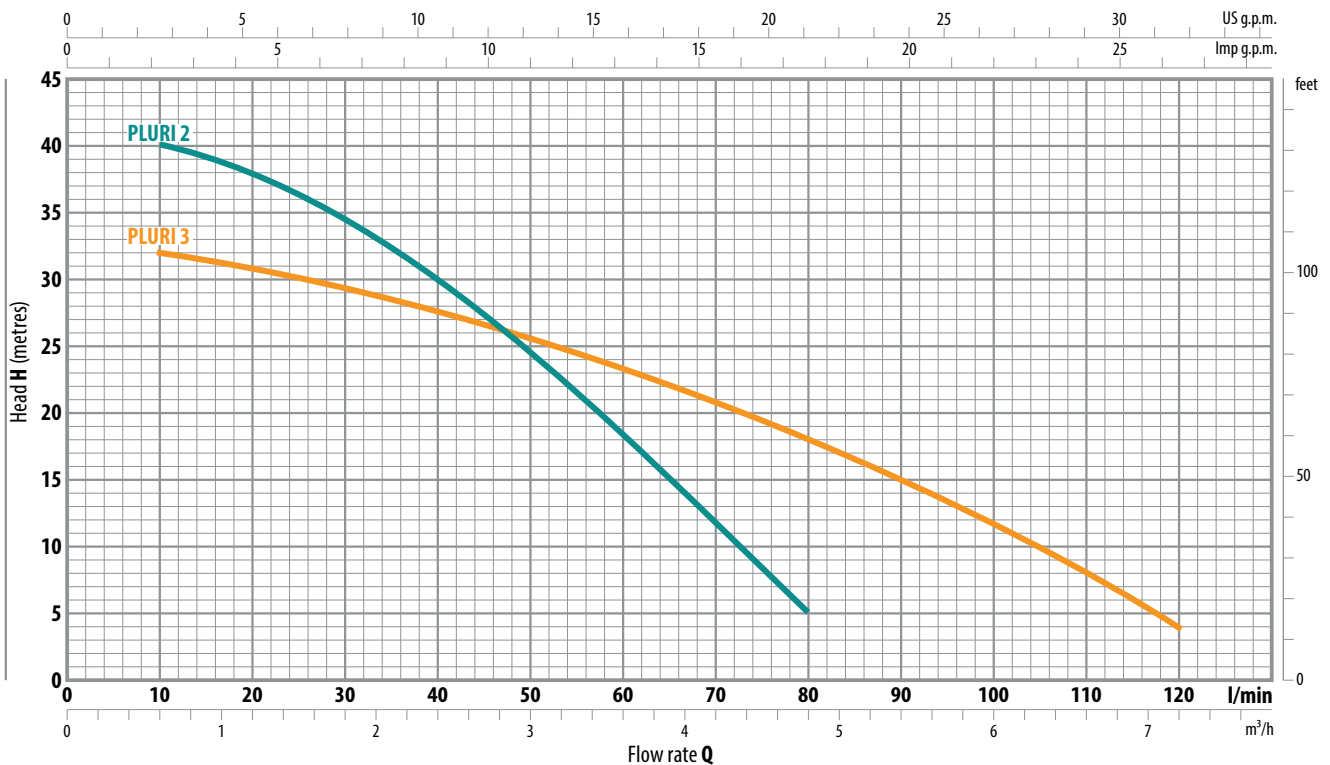
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

| 50 Hz | n= 2900 min<sup>-1</sup>



MODEL	POWER (P <sub>2</sub> )		Q	Flow rate Q													
	kW	HP		m <sup>3</sup> /h	0	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2
Single-phase			l/min	0	10	20	30	40	50	60	70	80	90	100	110	120	
PLURI 2	0.55	0.75	H metres	42	40	38	34	30	24	18	11.5	5					
PLURI 3	0.55	0.75	H metres	33	32	31	29.5	28	25.5	23	20.5	18	15	12	8	4	

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

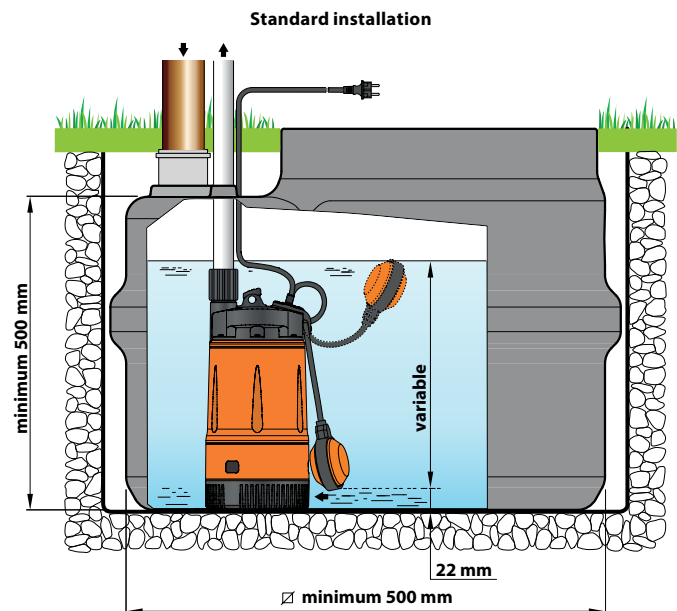
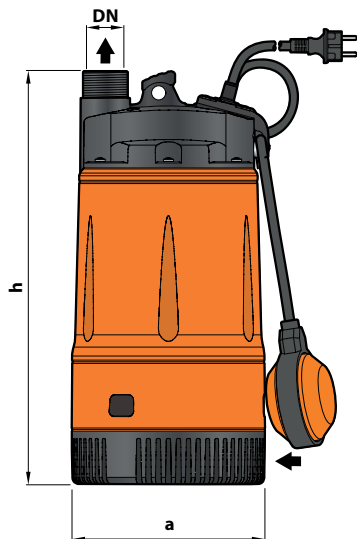
PLURI pumps are recommended for pumping clean water and liquids that are not chemically aggressive for the materials from which the pump is made.

Because of their high efficiency and reliability they are suitable for use in applications such as domestic water supply from reservoirs, tanks or relatively deep wells, for drawing rain water from cisterns to water gardens or for use in irrigation systems, etc.

## CONSTRUCTION CHARACTERISTICS

<b>DELIVERY BODY</b>	Glass fibre reinforced technopolymer complete with threaded delivery port in compliance with ISO 228/1
<b>PUMP BODY AND SUCTION FILTER</b>	Glass fibre reinforced technopolymer
<b>IMPELLERS</b>	Noryl FE1520PW
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Ceramic - Graphite - NBR <b>Pump side:</b> Ceramic - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable with Schuko plug

## DIMENSIONS AND WEIGHT



MODEL	PORT DN	N. STAGES	DIMENSIONS mm		kg
			a	h	
Single-phase	1¼"	3	178	380	9.4
PLURI 2					
PLURI 3					

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase			
PLURI 2	3.4 A	3.3 A	6.8 A
PLURI 3	3.6 A	3.5 A	7.2 A

## PALLETIZATION

MODEL	GROUPAGE	CONTAINER
Single-phase	n. pumps	n. pumps
PLURI 2	60	80
PLURI 3	60	80

Clean water

Domestic use

Civil use



### PERFORMANCE RANGE

- Flow rate up to **120 l/min** (7.2 m<sup>3</sup>/h)
- Head up to **42 m**
- Restart pressure: **1.5 bar**

### APPLICATION LIMITS

- **5 m** maximum immersion depth
- Maximum height between pump and point of use **10 m**
- Maximum liquid temperature **+40 °C**
- Suction down to **22 mm** above ground level
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps is complete with:

- power cable
- internal electronic device for pump starting (when tap opened) and stopping (when tap closed)
- threaded connector 1¼" (delivery)
- hose connector Ø 35 mm

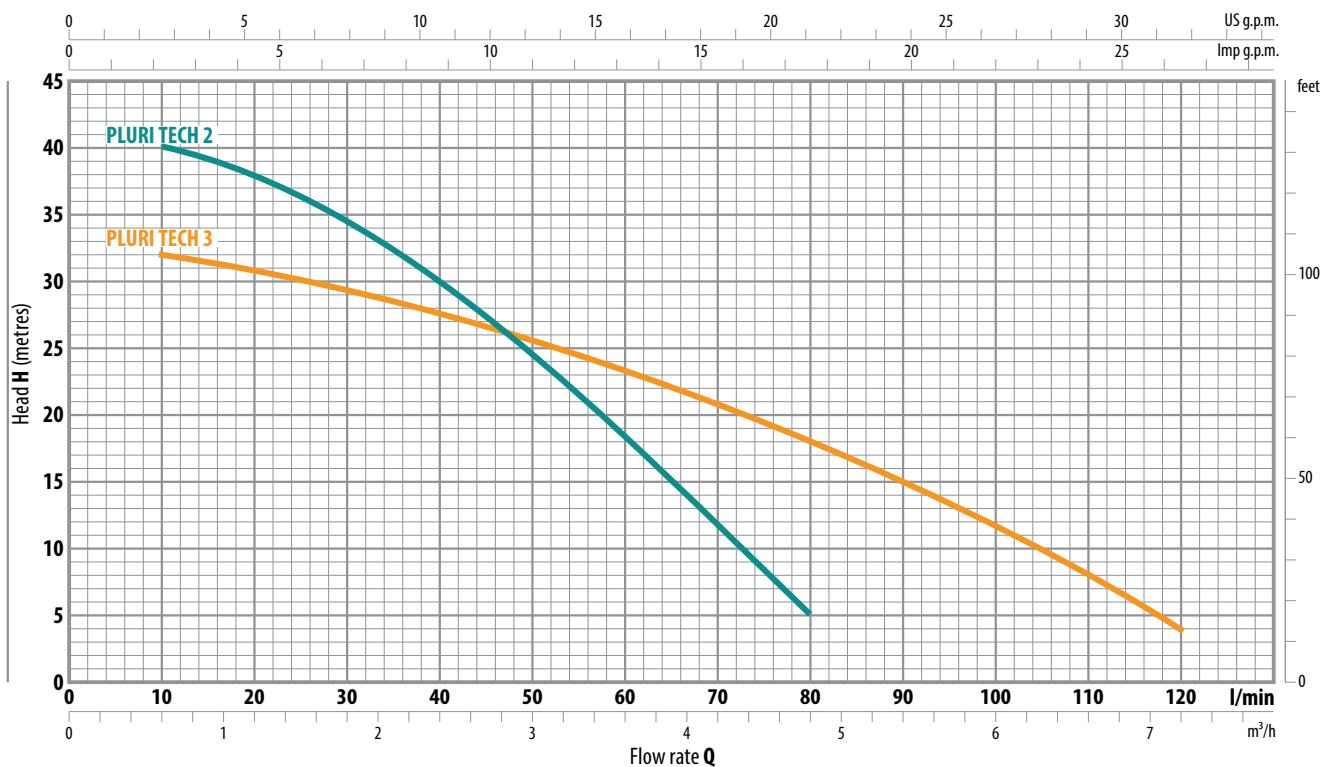
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL	POWER (P <sub>2</sub> )		Q	Flow rate													
	kW	HP		m <sup>3</sup> /h	0	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2
Single-phase			l/min	0	10	20	30	40	50	60	70	80	90	100	110	120	
PLURI TECH 2	0.55	0.75	H metres	42	40	38	34	30	24	18	11.5	5					
PLURI TECH 3	0.55	0.75	H metres	33	32	31	29.5	28	25.5	23	20.5	18	15	12	8	4	

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.



## INSTALLATION AND USE

PLURI TECH pumps are recommended for pumping clean water and liquids that are not chemically aggressive for the materials from which the pump is made.

Because of their high efficiency and reliability they are suitable for use in applications such as domestic water supply from reservoirs, tanks or relatively deep wells, for drawing rain water from cisterns to water gardens or for use in irrigation systems, etc.

An internal electronic device starts or stops the pump automatically when the tap is opened or closed.

### CONSTRUCTION CHARACTERISTICS

<b>DELIVERY BODY</b>	Glass fibre reinforced technopolymer
<b>PUMP BODY AND SUCTION FILTER</b>	Glass fibre reinforced technopolymer
<b>IMPELLERS</b>	Noryl FE1520PW
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Ceramic - Graphite - NBR <b>Pump side:</b> Ceramic - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable with Schuko plug

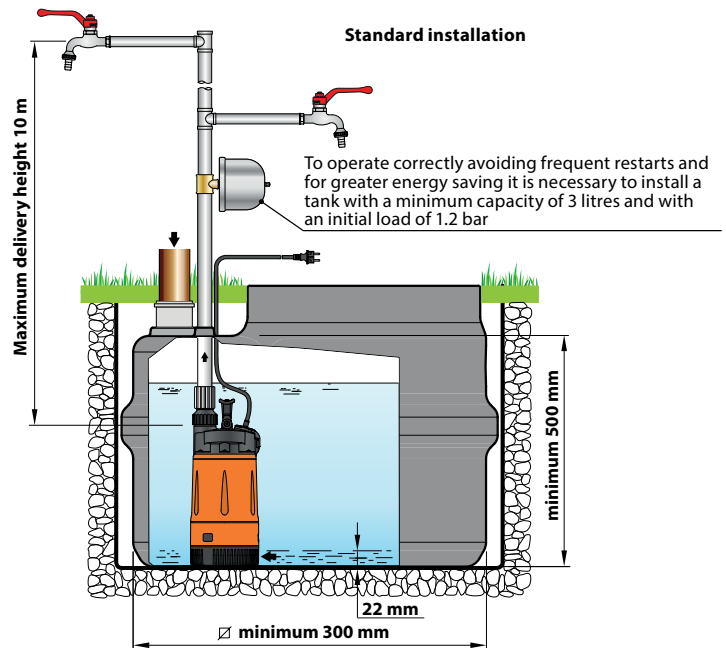
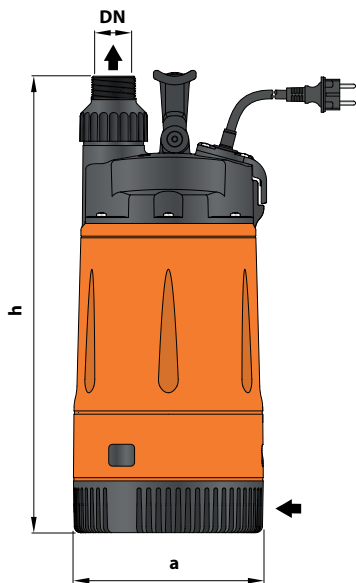
### ELECTRONIC DEVICE

PLURI TECH pumps are fitted with an internal electronic device which starts the pump when the pressure of the system falls below 1.5 bar (eg. when opening a tap) and stops it when the flow falls below 3 litre per minute.

It protects the pump:

- against dry running;
- against blockage: after long periods of pump inactivity the electronic device starts the pump every 48 hours for 10 seconds

## DIMENSIONS AND WEIGHT



MODEL	PORT DN	N. STAGES	DIMENSIONS mm		kg
			a	h	
Single-phase					
PLURI TECH 2	1 1/4"	3	178	428	9.5
PLURI TECH 3					

## ABSORPTION

MODEL	VOLTAGE	
	230 V	110 V
PLURI TECH 2	3.4 A	6.8 A
PLURI TECH 3	3.6 A	7.2 A

## PALLETIZATION

MODEL	GROUPAGE	CONTAINER
Single-phase	n. pumps	n. pumps
PLURI TECH 2	60	80
PLURI TECH 3	60	80

# SPEED

## SUBMERSIBLE DRAINAGE PUMPS



Clear water

Domestic use



### PERFORMANCE RANGE

- Flow rate up to **260 l/min** (15.6 m<sup>3</sup>/h)
- Head up to **10.5 m**

### APPLICATION LIMITS

- Immersion depth up to **3 m** (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C** (Maximum liquid temperature +90 °C for a maximum of 3 minutes intermittent service)
- Passage of suspended solids up to **Ø 10 mm**
- Suction level **14 mm** above ground level
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:

- power cable
- float switch

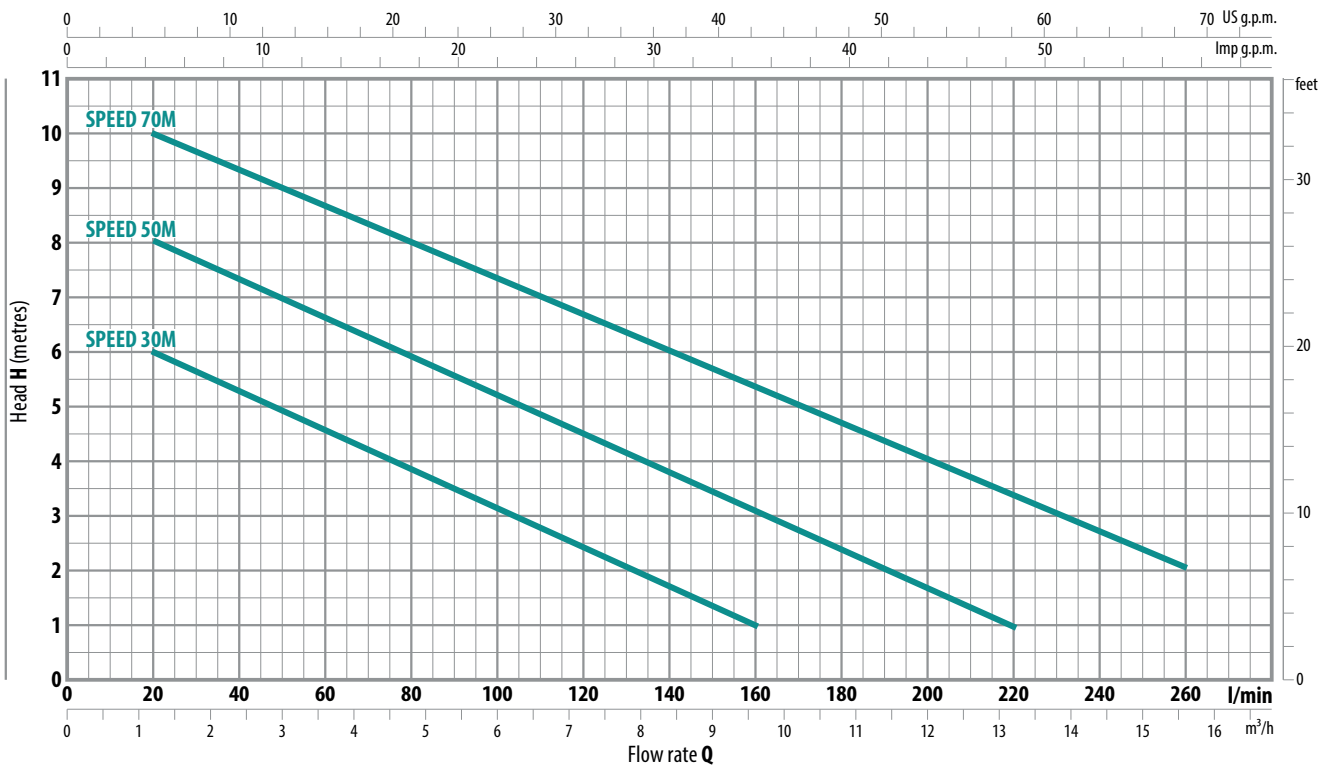
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL	POWER (P <sub>2</sub> )		Q	Flow rate															
	kW	HP		0	1.2	2.4	3.6	4.8	6.0	7.2	8.4	9.6	10.8	12	13.2	14.4	15.6		
Single-phase			l/min	0	20	40	60	80	100	120	140	160	180	200	220	240	260		
SPEED 30M	0.25	0.33	H metres	7	6	5.5	4.5	4	3	2.5	1.5	1							
SPEED 50M	0.37	0.50		9	8	7.5	6.5	6	5.5	4.5	4	3	2.5	1.8	1				
SPEED 70M	0.55	0.75		10.5	10	9	8.8	8	7.5	6.5	6	5.5	4.8	4	3.5	2.5	2		

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

The SPEED series is suitable for use with clear water that does not contain abrasive particles.

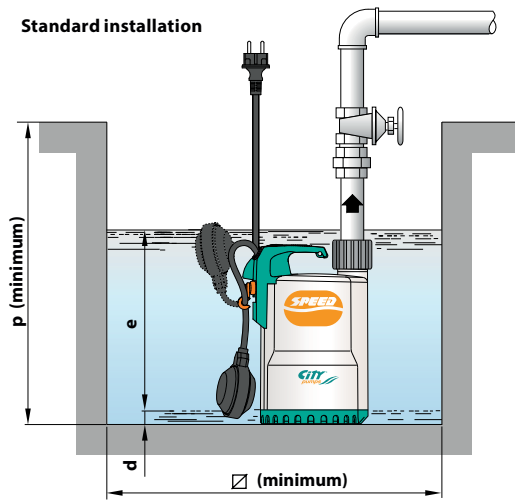
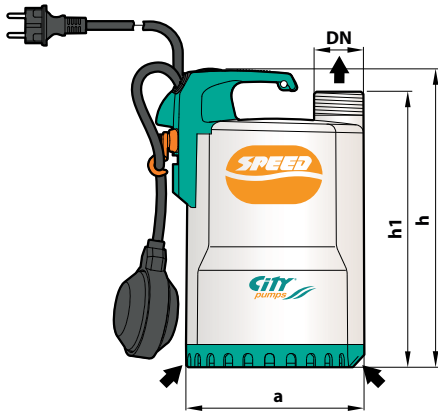
Because of the design solutions that have been adopted, such as the complete cooling of the motor and the shaft with double seal, these pumps are easy to use and reliable.

They are suitable for use in applications such as draining small flooded areas (rooms, cellars, garages) in the event of an emergency, for the disposal of waste water in the home (from dishwashers, washing machines) and for emptying drainage traps.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Technopolymer
<b>IMPELLER</b>	Noryl FE1520PW
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>SHAFT WITH DOUBLE SEAL AND OIL CHAMBER</b>	Ceramic - Graphite - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m long power cable with Schuko plug

## DIMENSIONS AND WEIGHT



MODEL	PORT	DIMENSIONS mm							kg
		a	h	h1	d	e	p	Ø	
Single-phase	DN								
SPEED 30M	1 1/4"	152	257	237	14	variable	350	350	5.2
SPEED 50M			287	267					5.2
SPEED 70M									6.6

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase			
SPEED 30M	1.5 A	1.4 A	3.0 A
SPEED 50M	2.0 A	1.9 A	5.3 A
SPEED 70M	3.2 A	3.1 A	7.9 A

## PALLETIZATION

MODEL	GROUPAGE	CONTAINER
Single-phase	n. pumps	n. pumps
SPEED 30M	96	144
SPEED 50M	96	144
SPEED 70M	96	144

# SPEED MOP

## SUBMERSIBLE DRAINAGE PUMPS



Clear water

Domestic use



### PERFORMANCE RANGE

- Flow rate up to **160 l/min** (9.6 m<sup>3</sup>/h)
- Head up to **9 m**

### APPLICATION LIMITS

- **3 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C** (Maximum liquid temperature +90 °C for a maximum of 3 minutes intermittent service)
- Passage of suspended solids up to **Ø 2 mm**
- Suction down to **2 mm** above ground level
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:  
– power cable

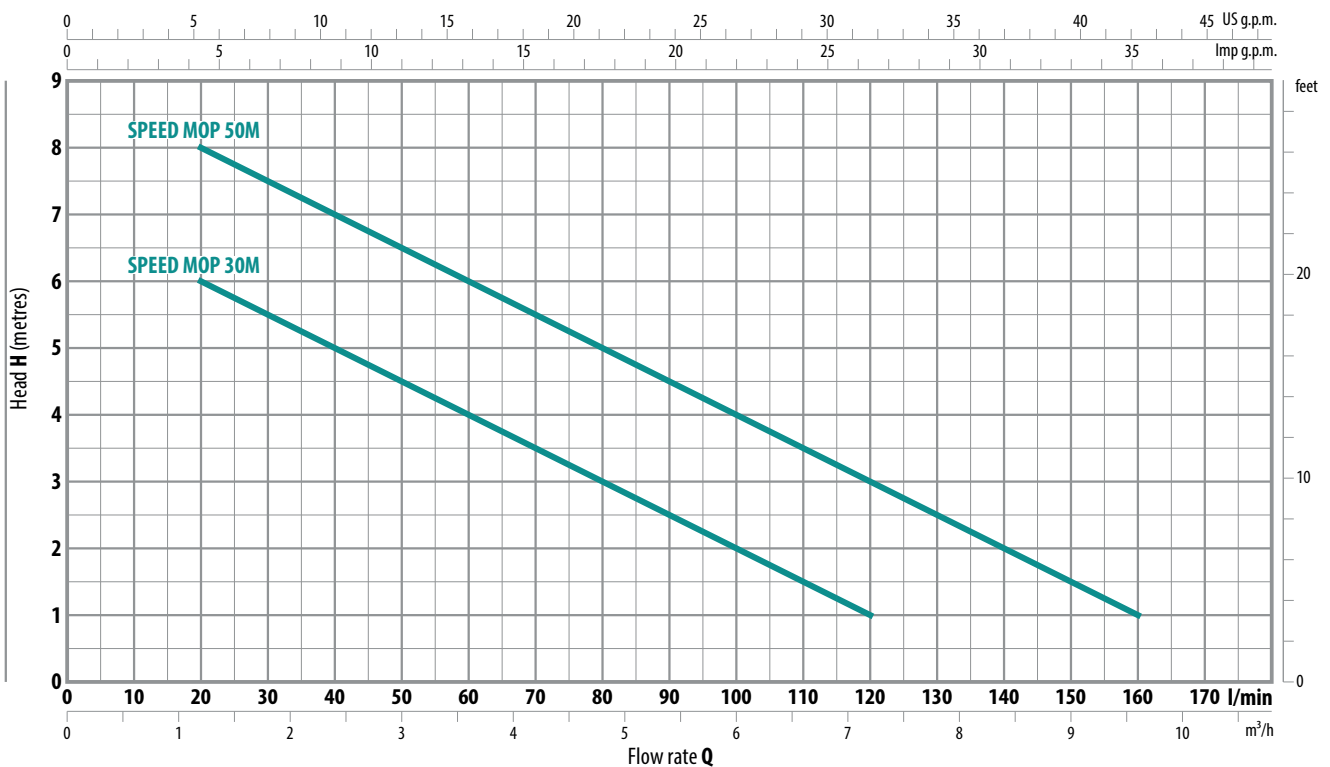
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

| 50 Hz | n= 2900 min<sup>-1</sup>



MODEL	POWER (P <sub>2</sub> )		Q	Flow rate											
	kW	HP		m <sup>3</sup> /h	0	1.2	2.4	3.6	4.8	6.0	7.2	8.4	9.6		
<b>Single-phase</b>			l/min	<b>0</b>	<b>20</b>	<b>40</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>			
<b>SPEED MOP 30M</b>	0.25	0.33	H metres	7	6	5	4	3	2	1					
<b>SPEED MOP 50M</b>	0.37	0.50		9	8	7	6	5	4	3	2	1			

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

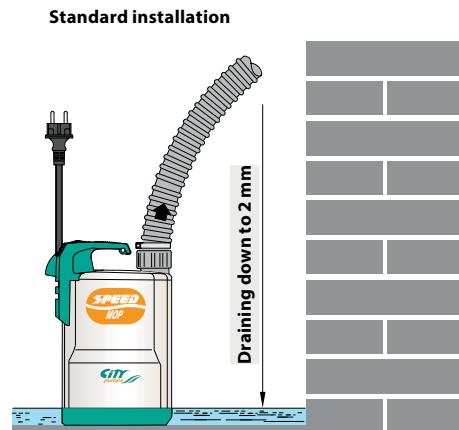
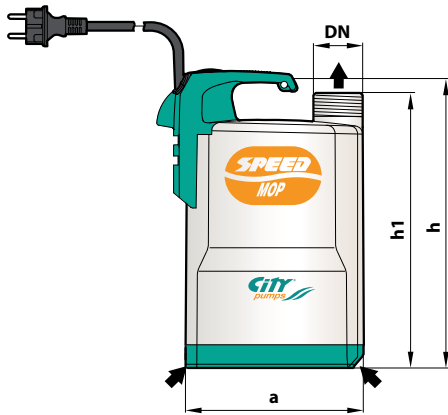
The SPEED MOP series is suitable for use with clear water that does not contain abrasive particles.

Because of their ability to drain water to a level of 2 millimetres above ground level, they are suitable for use in domestic emergencies where a small area must be drained to the lowest possible level.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Technopolymer
<b>IMPELLER</b>	Noryl FE1520PW
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>SHAFT WITH DOUBLE SEAL AND OIL CHAMBER</b>	Ceramic - Graphite - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m long power cable with Schuko plug

## DIMENSIONS AND WEIGHT



MODEL	PORT DN	DIMENSIONS mm			Minimum drying level	kg
		a	h	h1		
Single-phase						
SPEED MOP 30M	1¼"	152	257	237	2 mm	5.0
SPEED MOP 50M						5.0

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase			
SPEED MOP 30M	1.5 A	1.4 A	3.0 A
SPEED MOP 50M	2.0 A	1.9 A	5.3 A

## PALLETIZATION

MODEL	GROUPAGE	CONTAINER
Single-phase	n. pumps	n. pumps
SPEED MOP 30M	96	144
SPEED MOP 50M	96	144

# SPEED VORTEX

## SUBMERSIBLE PUMPS



Dirty water

Domestic use



### PERFORMANCE RANGE

- Flow rate up to **180 l/min** (10.8 m<sup>3</sup>/h)
- Head up to **8.5 m**

### APPLICATION LIMITS

- **3 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C** (Maximum liquid temperature +90 °C for a maximum of 3 minutes intermittent service)
- Passage of suspended solids up to **Ø 25 mm**
- Suction down to **25 mm** above ground level
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:

- power cable
- float switch

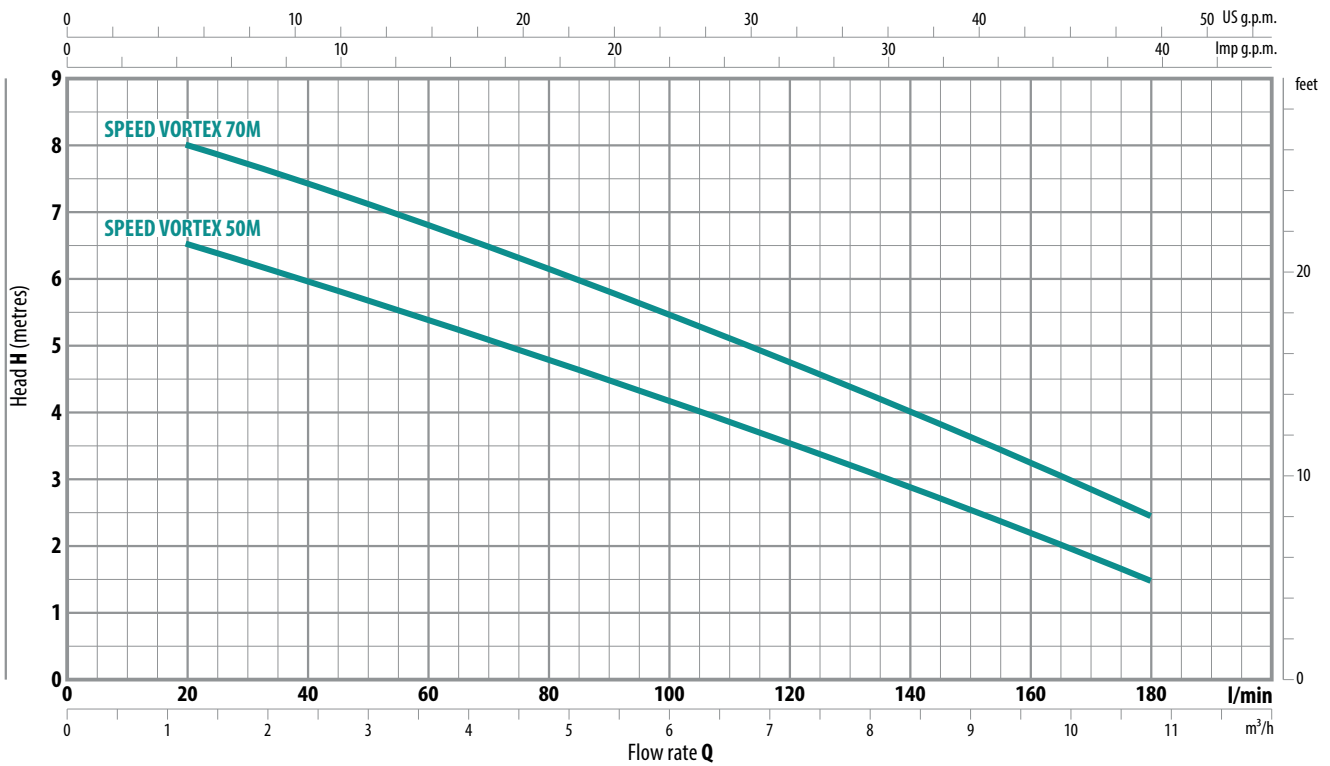
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL	POWER (P <sub>2</sub> )		Q	Flow rate											
	kW	HP		m <sup>3</sup> /h	0	1.2	2.4	3.6	4.8	6.0	7.2	8.4	9.6	10.8	
Single-phase			l/min	0	20	40	60	80	100	120	140	160	180		
SPEED VORTEX 50M	0.37	0.50	H metres	7	6.5	6	5.4	4.8	4.2	3.5	2.9	2.2	1.5		
SPEED VORTEX 70M	0.55	0.75		8.5	8	7.4	6.8	6.1	5.5	4.7	4	3.2	2.5		

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

The SPEED VORTEX pump is suitable for use with dirty water that is not chemically aggressive towards the materials from which the pump is made.

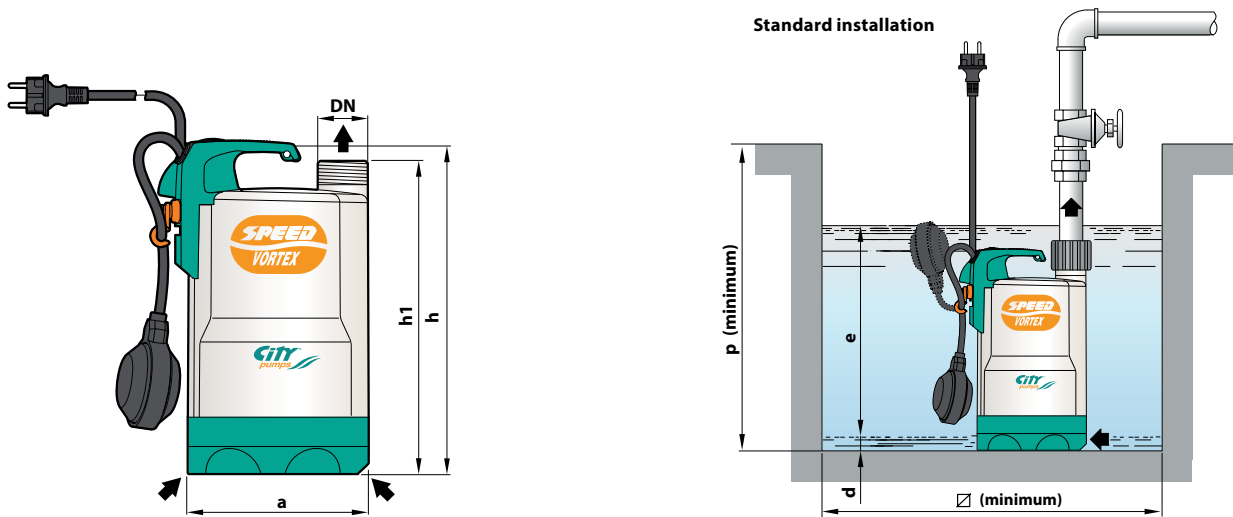
Because of the design solutions that have been adopted, such as the complete cooling of the motor and the shaft with double seal, these pumps are easy to use and reliable.

They are suitable for use in applications such as clearing dirty water, emptying tanks, discharging domestic waste water, and for emptying collection traps containing suspended solids up to a maximum of  $\varnothing 20$  mm.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Technopolymer
<b>IMPELLER</b>	Technopolymer VORTEX type
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>SHAFT WITH DOUBLE SEAL AND OIL CHAMBER</b>	Ceramic - Graphite - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m long power cable with Schuko plug

## DIMENSIONS AND WEIGHT



MODEL	PORT DN	DIMENSIONS mm							kg
		a	h	h1	d	e	p	∅	
Single-phase									
SPEED VORTEX 50M	1 1/4"	152	288	268	25	variable	350	350	5.2
SPEED VORTEX 70M			318	298					6.6

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase			
SPEED VORTEX 50M	2.0 A	1.9 A	4.0 A
SPEED VORTEX 70M	2.9 A	2.8 A	5.8 A

## PALLETIZATION

MODEL	GROUPAGE	CONTAINER
Single-phase	n. pumps	n. pumps
SPEED VORTEX 50M	96	144
SPEED VORTEX 70M	96	144

Clear water

Domestic use

Civil use



### PERFORMANCE RANGE

- Flow rate up to **220 l/min** (13.2 m<sup>3</sup>/h)
- Head up to **12 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+50 °C** (Maximum liquid temperature +90 °C for a maximum of 3 minutes intermittent service)
- Passage of suspended solids up to **Ø 10 mm**
- Suction level **14 mm** above ground level
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:

- power cable
- float switch for single-phase versions

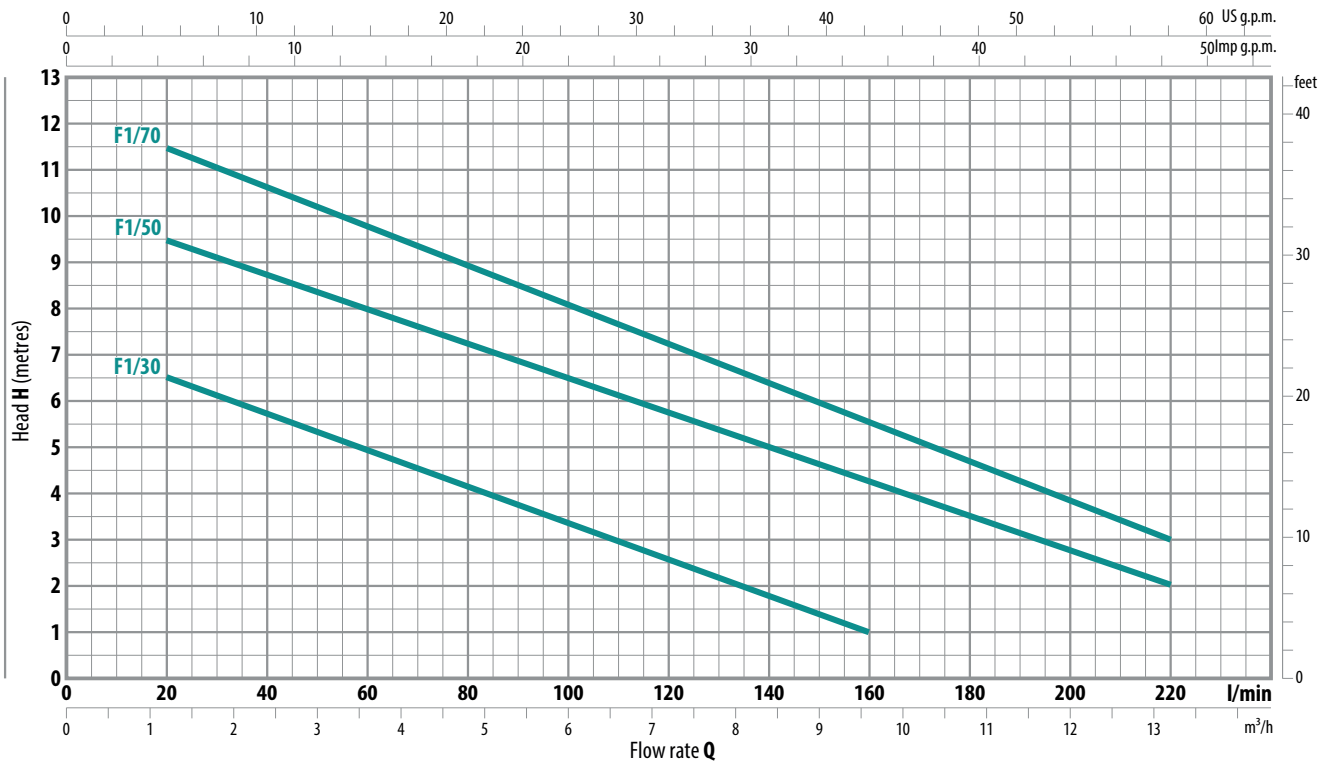
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate								
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	1.2	3.6	6.0	8.4	9.6	12.0	13.2
F1/30M	F1/30	0.25	0.33	l/min	0	20	60	100	140	160	200	220	
				H metres	7.5	6.5	5	3.5	2	1			
					10	9.5	8	6.5	5	4.5	2.5	2	
					12	11.5	9.5	8	6.5	5.5	3.5	3	

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.



## INSTALLATION AND USE

The F1 series pumps are suitable for use with clear water that does not contain abrasive particles.

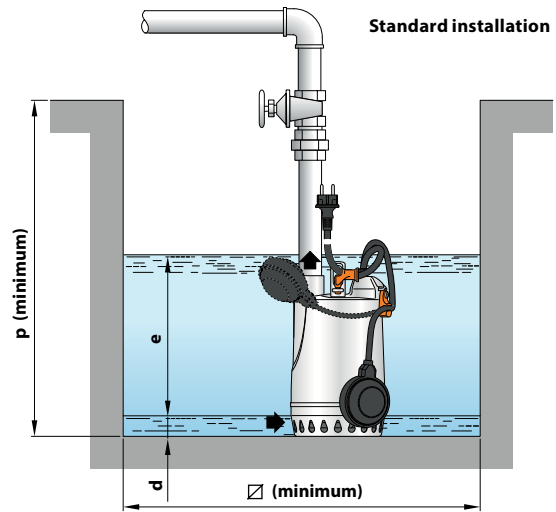
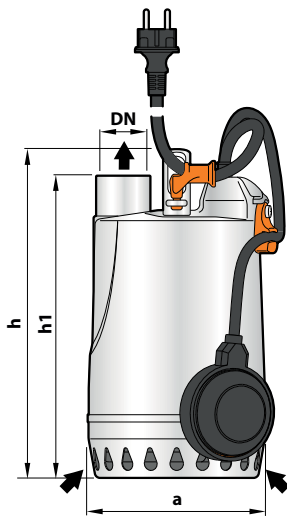
Because of the design solutions that have been adopted, such as the complete cooling of the motor and the shaft with double seal, these pumps are easy to use and reliable.

They are suitable for use in fixed installations and applications such as draining small flooded areas (rooms, cellars, garages) in the event of an emergency, for the disposal of waste water in the home (from dishwashers, washing machines) and for emptying drainage traps.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Stainless steel AISI 304 with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>SHAFT WITH DOUBLE SEAL AND OIL CHAMBER</b>	Ceramic - Graphite - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m long power cable (with Schuko plug for single-phase versions only)

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	DIMENSIONS mm							kg	
Single-phase	Three-phase		a	h	h1	d	e	p	Ø	1~	3~
F1/30M	F1/30	1 1/4"	147	255	247	14	variable	350	350	5.8	5.5
F1/50M	F1/50			285	277					5.8	5.5
F1/70M	F1/70			7.2	7.2						

## ABSORPTION

MODEL	VOLTAGE		
	Single-phase	230 V	240 V
F1/30M	1.5 A	1.4 A	3.0 A
F1/50M	2.0 A	1.9 A	5.3 A
F1/70M	3.6 A	3.5 A	7.5 A

MODEL	VOLTAGE			
	Three-phase	230 V	400 V	240 V
F1/30	1.6 A	0.9 A	1.5 A	0.85 A
F1/50	1.8 A	1.0 A	1.7 A	0.95 A
F1/70	2.8 A	1.6 A	2.7 A	1.55 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
F1/30M	F1/30	96	144
F1/50M	F1/50	96	144
F1/70M	F1/70	96	144

# F1 VORTEX

## SUBMERSIBLE PUMPS



Dirty water

Domestic use

Civil use



### PERFORMANCE RANGE

- Flow rate up to **180 l/min** (10.8 m<sup>3</sup>/h)
- Head up to **9 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+50 °C** (Maximum liquid temperature +90 °C for a maximum of 3 minutes intermittent service)
- Passage of solids up to **Ø 20 mm**
- Suction level **25 mm** above ground level
- Continuous service **S1**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:

- power cable
- float switch for single-phase versions

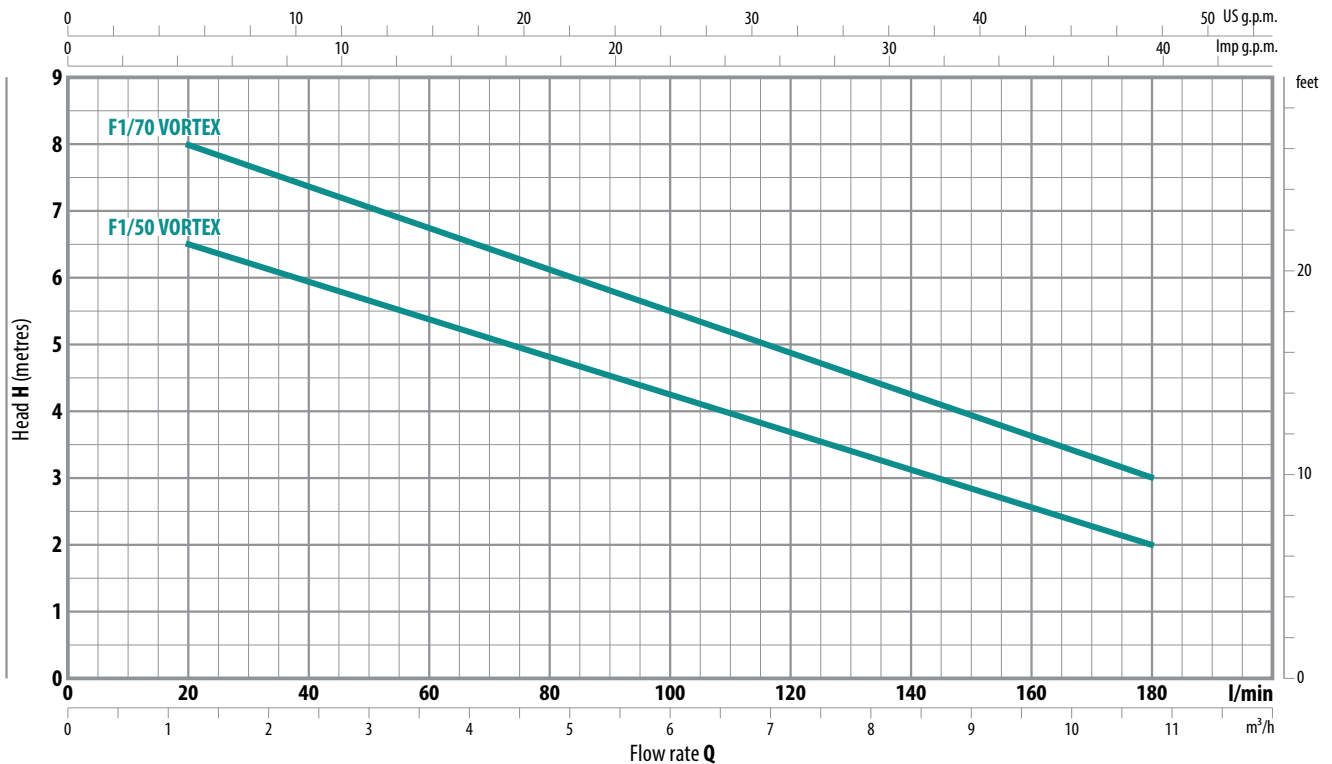
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate												
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	1.2	2.4	3.6	4.8	6	7.2	8.4	9.6	10.8		
				l/min	0	20	40	60	80	100	120	140	160	180			
F1/50M VORTEX	F1/50 VORTEX	0.37	0.50	H metres	7	6.5	6	5.5	4.8	4.3	3.7	3	2.5	2			
F1/70M VORTEX	F1/70 VORTEX	0.55	0.75		9	8	7.5	6.5	6	5.5	4.7	4.2	3.5	3			

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

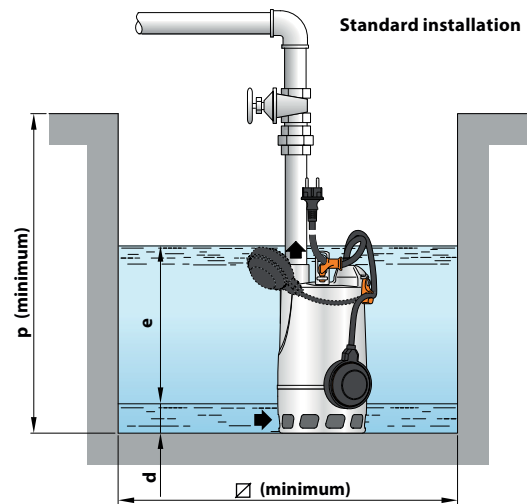
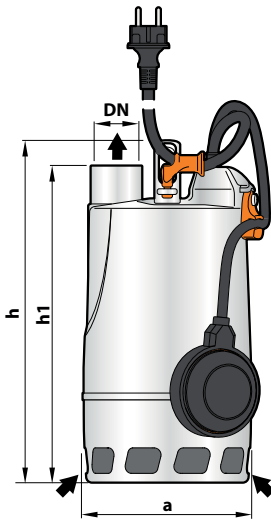
## INSTALLATION AND USE

The F1 VORTEX series pumps are suitable for use with dirty water. The design solutions that have been adopted, such as the complete cooling of the motor, guarantee the reliability of the pump. They are suitable for use in domestic applications such as for discharging dirty water containing suspended solids.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Stainless steel AISI 304 with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304 VORTEX type
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>SHAFT WITH DOUBLE SEAL AND OIL CHAMBER</b>	Ceramic - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m long power cable (with Schuko plug for single-phase versions only)

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	DIMENSIONS mm							kg	
Single-phase	Three-phase		a	h	h1	d	e	p	Ø	1~	3~
F1/50M VORTEX	F1/50 VORTEX	1¼"	147	290	278	25	variable	350	350	6.1	6.1
F1/70M VORTEX	F1/70 VORTEX			320	308					7.9	7.9

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
<b>Single-phase</b>			
F1/50M VORTEX	2.6 A	2.5 A	5.2 A
F1/70M VORTEX	3.2 A	3.1 A	6.4 A

MODEL	VOLTAGE			
	230 V	400 V	240 V	415 V
<b>Three-phase</b>				
F1/50 VORTEX	1.9 A	1.1 A	1.8 A	1.05 A
F1/70 VORTEX	2.6 A	1.5 A	2.5 A	1.45 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
F1/50M VORTEX	F1/50 VORTEX	72	120
F1/70M VORTEX	F1/70 VORTEX	72	120

Dirty water

Domestic use



### PERFORMANCE RANGE

- Flow rate up to **400 l/min** (24 m<sup>3</sup>/h)
- Head up to **11 m**

### APPLICATION LIMITS

- **5 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of suspended solids up to **Ø 40 mm**
- Suction down to **50 mm** above ground level
- **240 mm** minimum immersion depth for continuous service

### CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:

- power cable
- float switch for single-phase versions

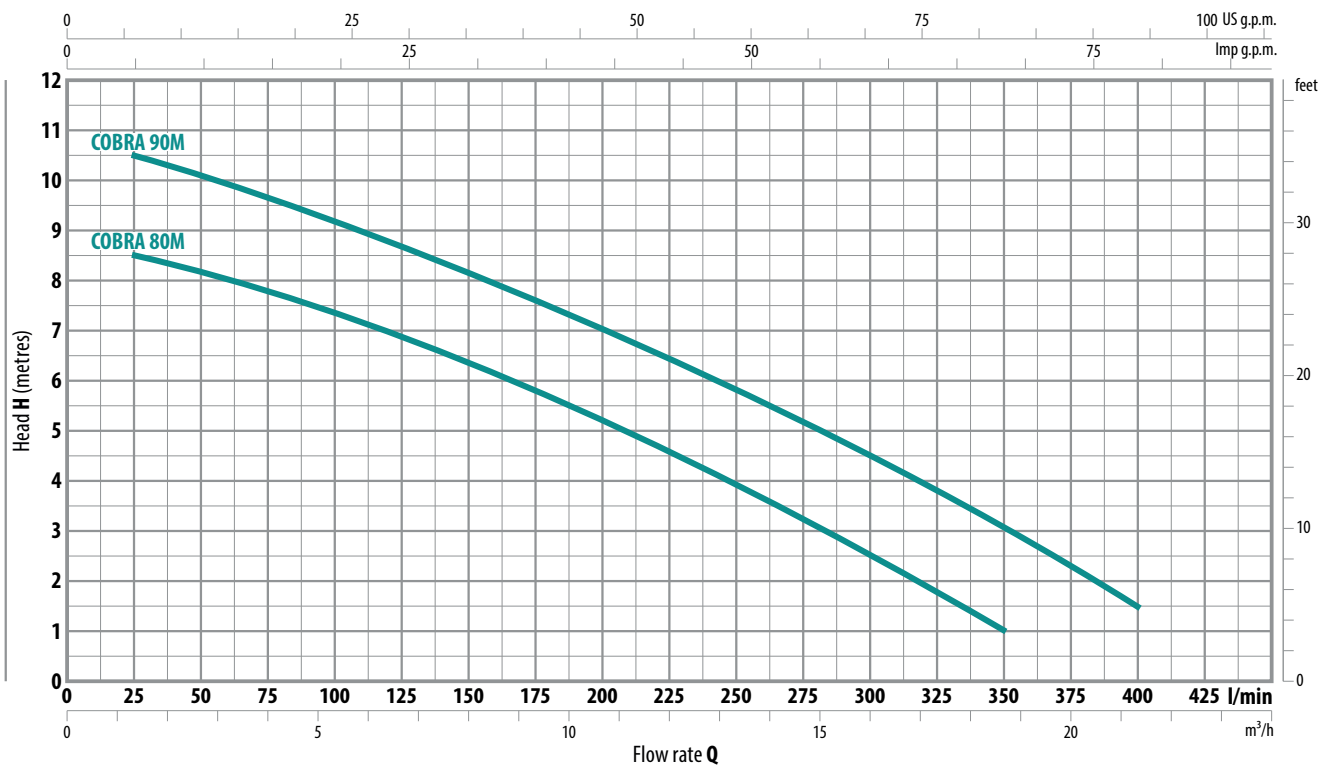
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

| 50 Hz | n= 2900 min<sup>-1</sup>



MODEL	POWER (P <sub>2</sub> )		Q	Flow rate													
	kW	HP		m <sup>3</sup> /h	0	1.5	3.0	4.5	6.0	9.0	12.0	15.0	18.0	21.0	24.0		
Single-phase			l/min	0	25	50	75	100	150	200	250	300	350	400			
COBRA 80M	0.50	0.70	H metres	9	8.5	8.3	8	7.5	6.5	5.2	4	2.5	1				
COBRA 90M	0.60	0.85		11	10.5	10	9.5	9.2	8.2	7	5.7	4.3	2.8	1.5			

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

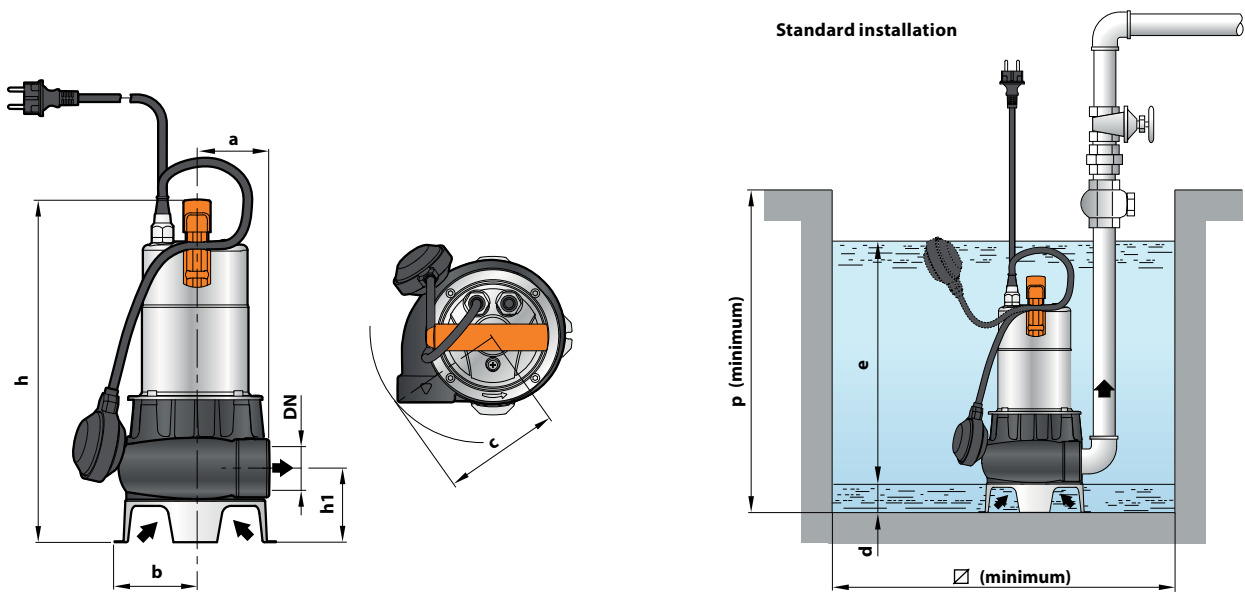
## INSTALLATION AND USE

COBRA series pumps are suitable for draining dirty water in domestic applications and for pumping dirty water containing suspended solids up to Ø 40 mm. They distinguish themselves for the ease with which they are installed and their reliability under automatic operating conditions in fixed installations.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Technopolymer VORTEX type
<b>MOTOR SHAFT</b>	Stainless steel EN 10088-3 - 1.4104
<b>SHAFT WITH DOUBLE SEAL</b>	Ceramic - Graphite - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m long power cable (with Schuko plug for single-phase versions only)

## DIMENSIONS AND WEIGHT



MODEL	PORT DN	Passage of solids	DIMENSIONS mm									kg 1~
			a	b	c	h	h1	d	e	p	Ø	
COBRA 80M	1½"	Ø 40 mm	75	87	130	378	82	50	variable	450	450	11.5
COBRA 90M												11.9

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
COBRA 80M	3.3 A	3.2 A	6.6 A
COBRA 90M	4.5 A	4.4 A	9.0 A

## PALLETIZATION

MODEL	GROUPAGE	CONTAINER
Single-phase	n. pumps	n. pumps
COBRA 80	60	80
COBRA 90	60	80

# SECURITY

## SUBMERSIBLE DRAINAGE PUMPS



Clear water

Domestic use

Civil use



### PERFORMANCE RANGE

- Flow rate up to **300 l/min** (18 m<sup>3</sup>/h)
- Head up to **26 m**

### APPLICATION LIMITS

- **5 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of suspended solids up to **Ø 10 mm**
- Suction down to **17 mm** above ground level
- Minimum immersion depth for continuous service: **220 mm**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:

- power cable
- float switch for single-phase versions

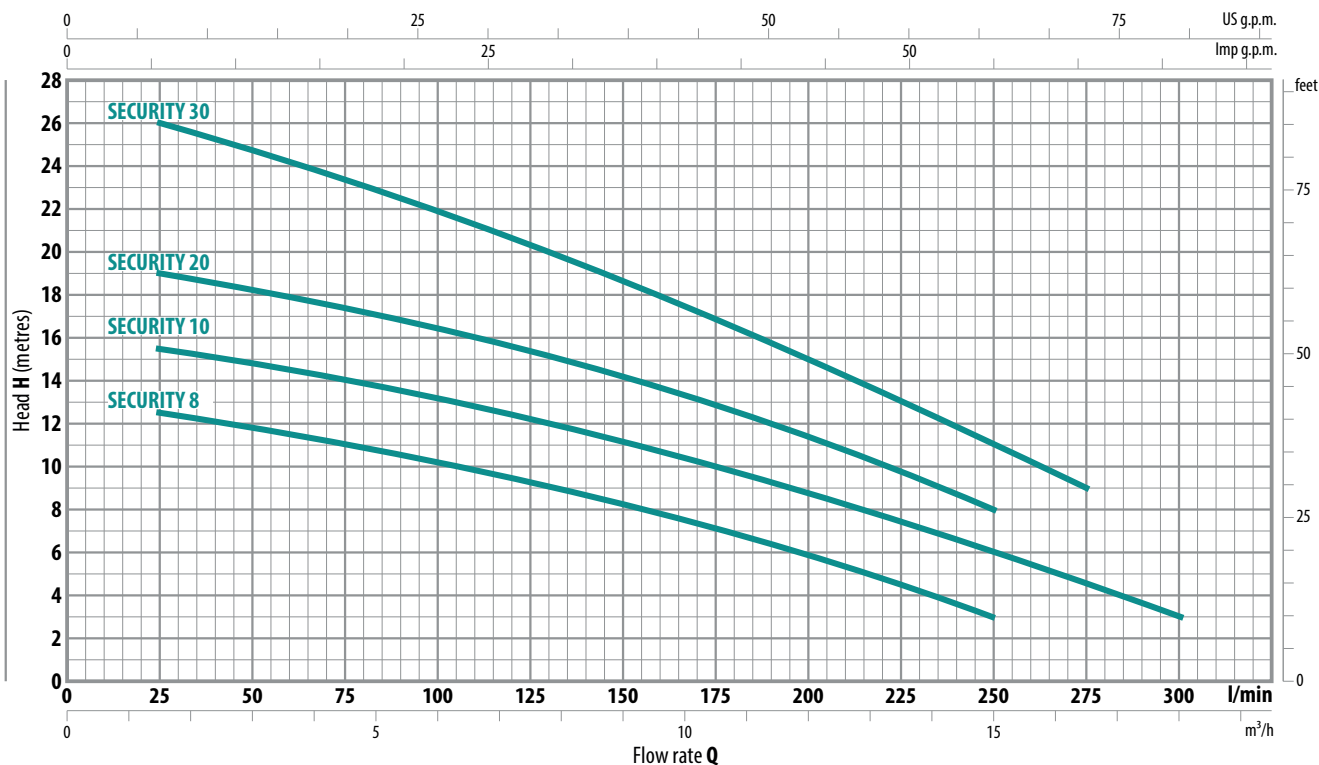
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate																	
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.2	15.0	16.5	18.0				
				l/min	0	25	50	75	100	125	150	175	200	220	250	275	300					
SECURITY 8M	SECURITY 8	0.55	0.75	H metres	13	12.5	12	11	10	9	8	7	6	4.7	3							
SECURITY 10M	SECURITY 10	0.75	1		16	15.5	15	14	13.2	12.2	11.2	10	8.8	7.8	6	4.5	3					
SECURITY 20M	SECURITY 20	0.75	1		20	19	18.5	17.5	16.5	15.5	14.3	13	11.5	10	8							
SECURITY 30M	SECURITY 30	1.1	1.5		26	26	25	23.5	22	20.5	18.7	17	15	13.5	11	9						

Q = Flow rate  
H = Total manometric head

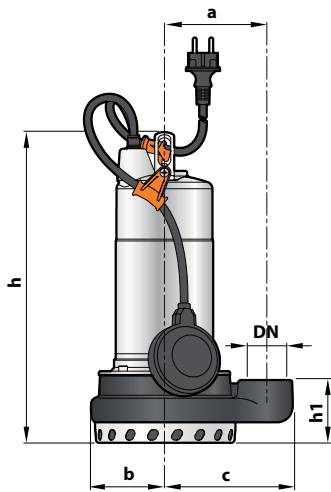
Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

Designed for draining clear or slightly dirty water, the SECURITY series pumps are recommended for domestic, civil and professional applications for draining flooded interiors such as basements and garages, for emptying swimming pools and tanks, for disposal of waste water which is not filthy.

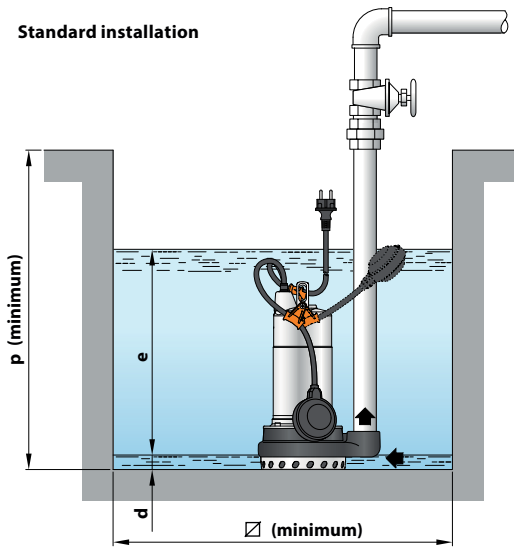
These pumps distinguish themselves for their reliability, which can be best appreciated under automatic operating conditions in fixed installations.

## DIMENSIONS AND WEIGHT



## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Technopolymer open type
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Silicon carbide - Graphite - NBR <b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m long power cable (10 m for SECURITY 30) (with Schuko plug for single-phase versions only)



MODEL		PORT DN	DIMENSIONS mm									kg	
Single-phase	Three-phase		a	b	c	h	h1	d	e	p	Ø	1~	3~
SECURITY 8M	SECURITY 8	1½"	115	85	147	340	72	17	variable	500	500	12.0	11.7
SECURITY 10M	SECURITY 10			93		355	84					13.1	12.0
SECURITY 20M	SECURITY 20			15.1	12.0								
SECURITY 30M	SECURITY 30			15.1	14.1								

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase	230 V	240 V	110 V
SECURITY 8M	3.2 A	3.1 A	6.4 A
SECURITY 10M	4.7 A	4.5 A	9.4 A
SECURITY 20M	5.7 A	5.5 A	11.4 A
SECURITY 30M	7.2 A	6.9 A	-

MODEL	VOLTAGE			
	230 V	400 V	240 V	415 V
Three-phase	230 V	400 V	240 V	415 V
SECURITY 8	2.8 A	1.6 A	2.7 A	1.55 A
SECURITY 10	3.5 A	2.0 A	3.4 A	1.95 A
SECURITY 20	4.2 A	2.4 A	4.0 A	2.3 A
SECURITY 30	5.2 A	3.0 A	5.0 A	2.9 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
SECURITY 8M	SECURITY 8	60	80
SECURITY 10M	SECURITY 10	60	80
SECURITY 20M	SECURITY 20	60	80
SECURITY 30M	SECURITY 30	60	80

# RANGER ST

SUBMERSIBLE PUMPS IN STAINLESS STEEL



## VORTEX

-  Filthy water
-  Domestic use
-  Civil use
-  Industrial use



## PERFORMANCE RANGE

- Flow rate up to **650 l/min** (39 m<sup>3</sup>/h)
- Head up to **15 m**

## APPLICATION LIMITS

- **5 m** maximum immersion depth
- Maximum liquid temperature **+40 °C**
- Passage of solids:
  - up to **Ø 40 mm** for RANGER /35-ST
  - up to **Ø 50 mm** for RANGER /50-ST
- Minimum immersion depth for continuous service:
  - **280 mm** for RANGER /35-ST
  - **300 mm** for RANGER /50-ST

## CONSTRUCTION AND SAFETY STANDARDS

- The pumps are complete with:
- power cable
  - float switch for single-phase versions

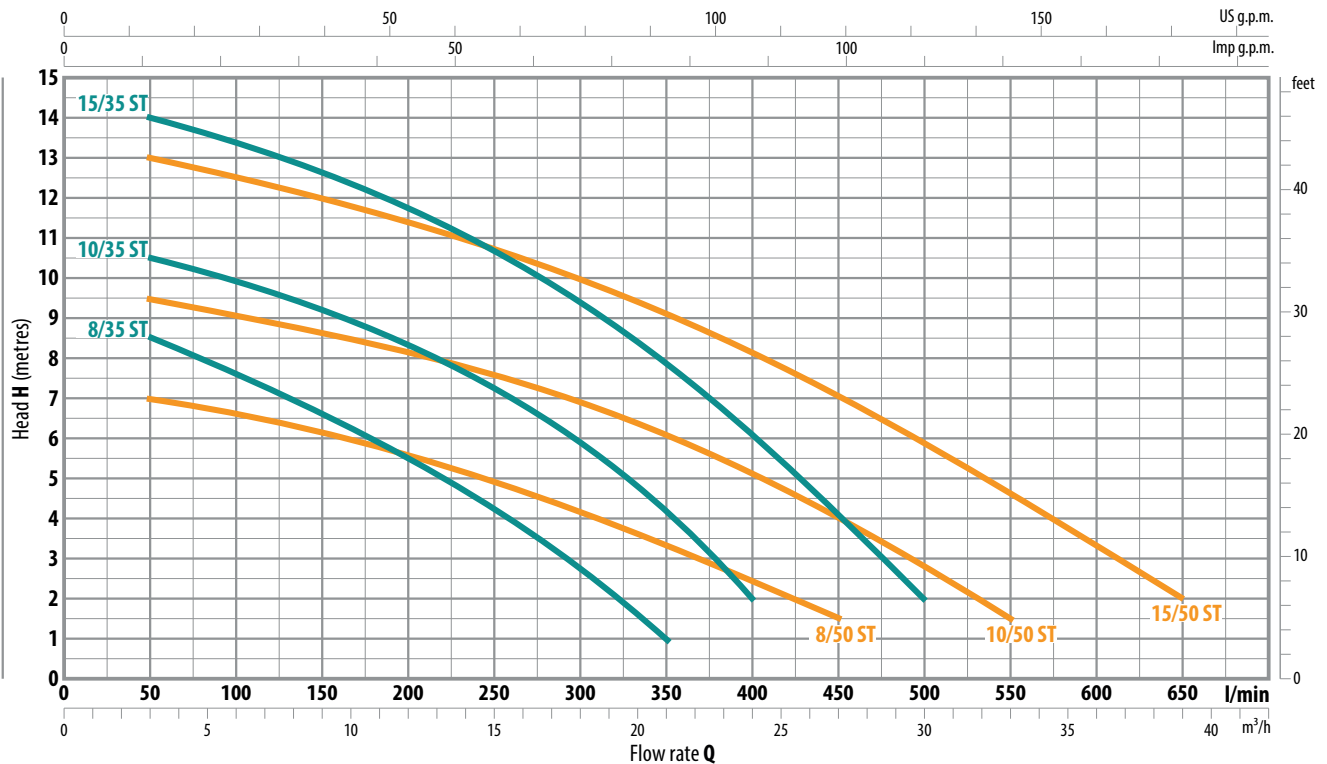
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate												
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	3	6	12	18	21	24	27	30	33	36	39
				l/min	0	50	100	200	300	350	400	450	500	550	600	650	
RANGER 8/35M ST	RANGER 8/35 ST	0.55	0.75	H metres	9.5	8.5	7.5	5.4	2.7	1							
RANGER 10/35M ST	RANGER 10/35 ST	0.75	1		11.5	10.5	10	8.3	6	4	2						
RANGER 15/35M ST	RANGER 15/35 ST	1.1	1.5		15	14	13.5	11.7	9.2	7.7	6	4.1	2				
RANGER 8/50M ST	RANGER 8/50 ST	0.55	0.75		7.5	7	6.6	5.7	4.2	3.5	2.5	1.5					
RANGER 10/50M ST	RANGER 10/50 ST	0.75	1		10	9.5	9.2	8.5	7	6	5	3.8	2.7	1.5			
RANGER 15/50M ST	RANGER 15/50 ST	1.1	1.5		13.5	13	12.5	11.5	10	9	8	7	6	4.7	3.3	2	

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.



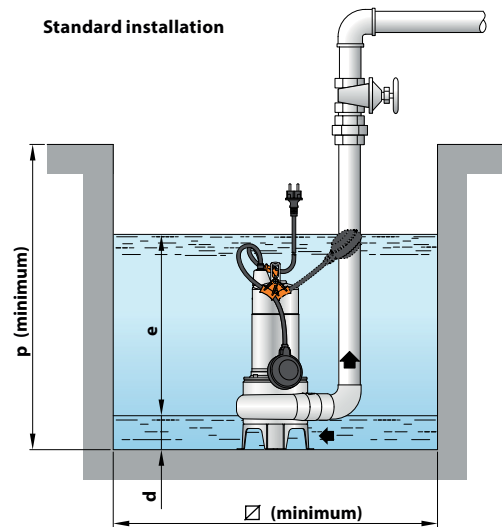
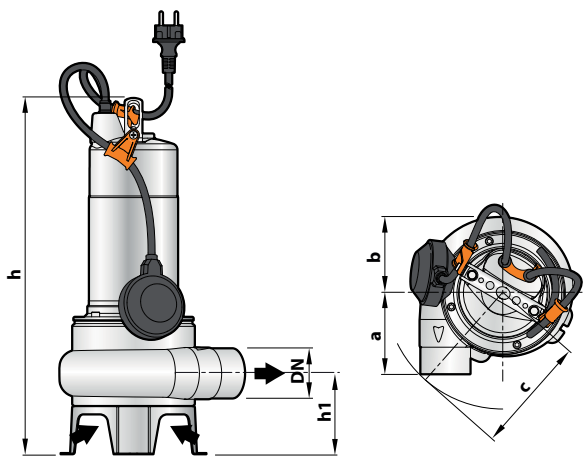
## INSTALLATION AND USE

The RANGER-ST submersible pumps in stainless steel are recommended for draining filthy water in domestic, civil and industrial applications, in every case where there are solid bodies in suspension, for example water mixed with mud, groundwater, surface water. They are suitable for draining flooded areas such as cellars, underground car parks, car washes, for emptying cesspools and for sewage disposal. These pumps distinguish themselves for their reliability, which can be best appreciated under automatic operating conditions in fixed installations.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Stainless steel AISI 304 with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304 VORTEX type
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Silicon carbide - Graphite - NBR <b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable (with Schuko plug for single-phase versions only)

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	Passage of solids	DIMENSIONS mm										kg	
Single-phase	Three-phase			a	b	c	h	h1	d	e	p	Ø	1~	3~	
RANGER 8/35M ST	RANGER 8/35 ST	1½"	Ø 40 mm	95	140	95	406	87	50	variable	500	500	10.3	10.0	
RANGER 10/35M ST	RANGER 10/35 ST						421						11.1	10.0	
RANGER 15/35M ST	RANGER 15/35 ST						430						13.1	12.1	
RANGER 8/50M ST	RANGER 8/50 ST	2"	Ø 50 mm	102	145	102	430	102	60	variable	500	500	10.4	10.1	
RANGER 10/50M ST	RANGER 10/50 ST						445						11.2	10.1	
RANGER 15/50M ST	RANGER 15/50 ST						445						13.2	12.2	

## ABSORPTION

MODEL	VOLTAGE		
	Single-phase	230 V	240 V
RANGER 8/35M ST	3.5 A	3.4 A	7.0 A
RANGER 10/35M ST	4.8 A	4.6 A	9.6 A
RANGER 15/35M ST	7.4 A	7.1 A	-
RANGER 8/50M ST	3.7 A	3.5 A	7.4 A
RANGER 10/50M ST	5.0 A	4.8 A	10.0 A
RANGER 15/50M ST	7.1 A	6.8 A	-

MODEL	VOLTAGE			
	Three-phase	230 V	400 V	240 V
RANGER 8/35 ST	3.0 A	1.7 A	2.9 A	1.65 A
RANGER 10/35 ST	3.5 A	2.0 A	3.4 A	1.95 A
RANGER 15/35 ST	5.2 A	3.0 A	5.0 A	2.9 A
RANGER 8/50 ST	3.2 A	1.8 A	3.1 A	1.75 A
RANGER 10/50 ST	3.5 A	2.0 A	3.4 A	1.95 A
RANGER 15/50 ST	5.2 A	3.0 A	5.0 A	2.9 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
RANGER 8/35M ST	RANGER 8/35 ST	60	80
RANGER 10/35M ST	RANGER 10/35 ST	60	80
RANGER 15/35M ST	RANGER 15/35 ST	54	72
RANGER 8/50M ST	RANGER 8/50 ST	54	72
RANGER 10/50M ST	RANGER 10/50 ST	54	72
RANGER 15/50M ST	RANGER 15/50 ST	54	72

# RANGER MC ST

SUBMERSIBLE PUMPS IN STAINLESS STEEL



## DOUBLE-CHANNEL

-  Filthy water
-  Domestic use
-  Civil use
-  Industrial use



## PERFORMANCE RANGE

- Flow rate up to **750 l/min** (45 m<sup>3</sup>/h)
- Head up to **15 m**

## APPLICATION LIMITS

- **5 m** maximum immersion depth
- Maximum liquid temperature **+40 °C**
- Passage of suspended solids up to **Ø 50 mm**
- Minimum immersion depth for continuous service: **300 mm**

## CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:

- power cable
- float switch for single-phase versions

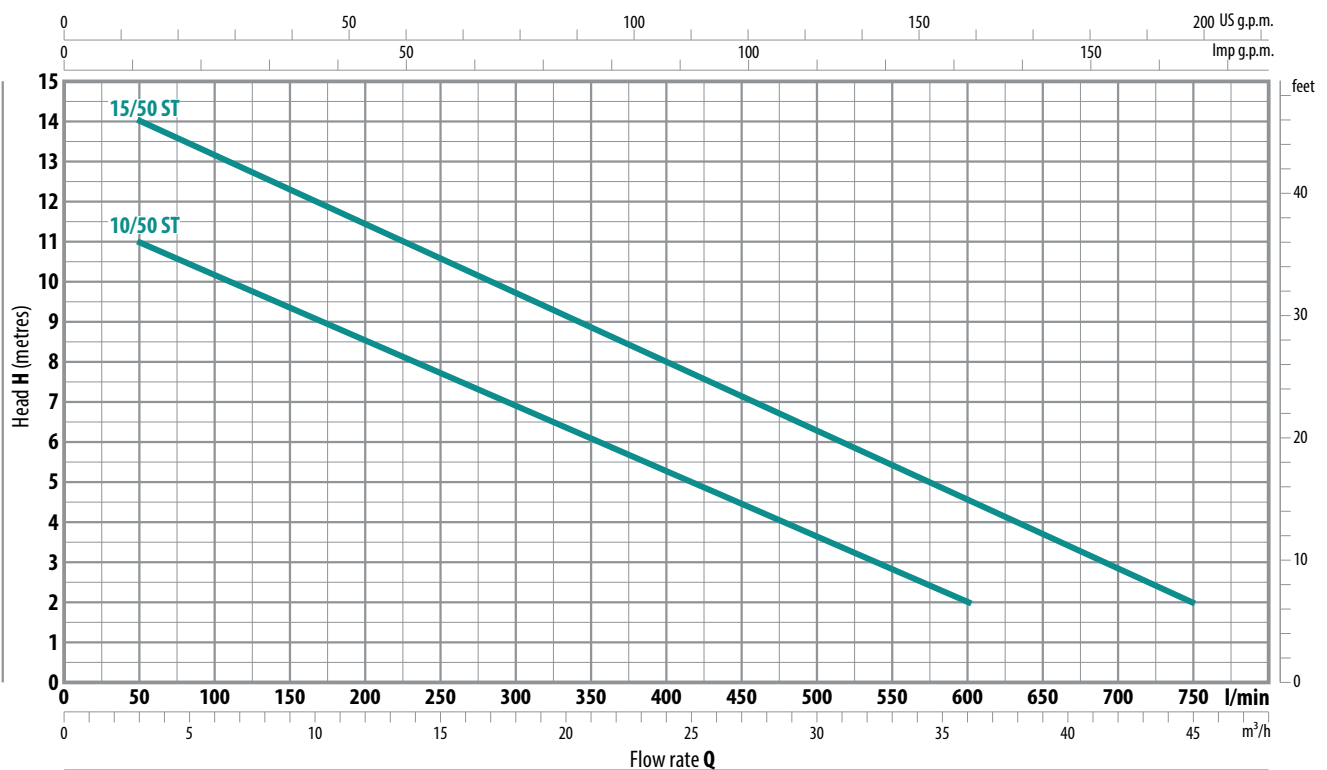
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n=2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate									
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	3	6	12	18	24	30	36	42
				l/min	0	50	100	200	300	400	500	600	700	750
RANGER MC 10/50M ST	RANGER MC 10/50 ST	0.75	1	H metres	12	11	10	8.5	7	5	3.6	2		
RANGER MC 15/50M ST	RANGER MC 15/50 ST	1.1	1.5		15	14	13	11.5	9.7	8	6.3	4.6	2.9	2

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

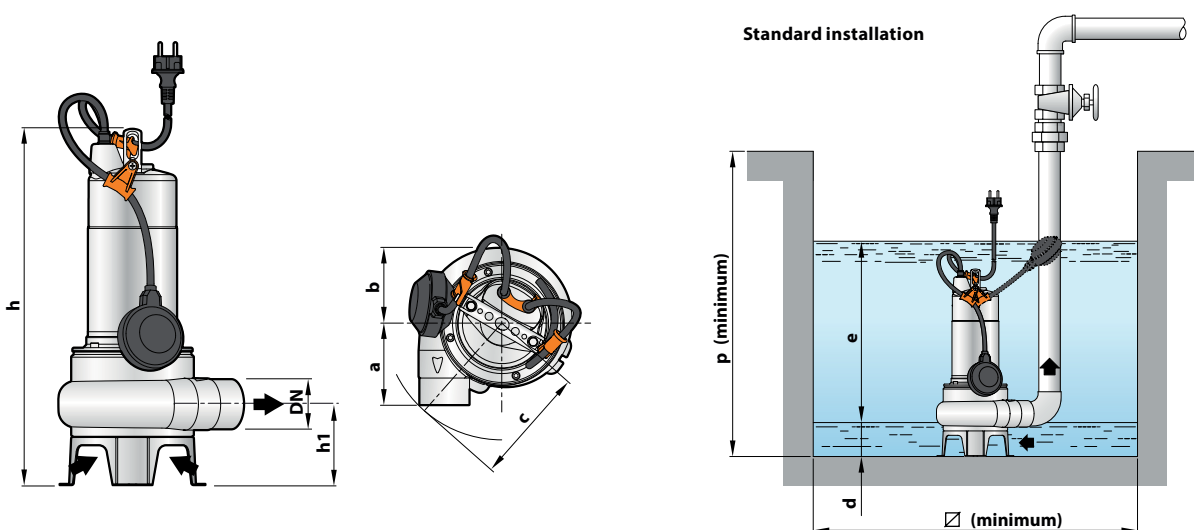
RANGER MC ST submersible pumps in stainless steel are recommended for draining dirty and filthy water in domestic, civil and industrial applications. They come equipped with a DOUBLE-CHANNEL impeller and are capable of pumping liquids containing short fibred suspended solids up to Ø 50 mm. They are ideal for pumping sewage, waste water, surface water and water mixed with mud in locations such as blocks of flats and detached houses.

These pumps distinguish themselves for their reliability, which can be best appreciated under automatic operating conditions in fixed installations.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Stainless steel AISI 304 with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Precision cast stainless steel AISI 304 DOUBLE-CHANNEL type
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Silicon carbide - Graphite - NBR <b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable (with Schuko plug for single-phase versions only)

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	Passage of solids	DIMENSIONS mm									kg	
Single-phase	Three-phase			a	b	c	h	h1	d	e	p	Ø	1~	3~
RANGER MC 10/50M ST	RANGER MC 10/50 ST	2"	Ø 50 mm	102	95	145	430	102	60	variable	500	500	11.9	10.8
RANGER MC 15/50M ST	RANGER MC 15/50 ST						445						13.5	12.5

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
<b>Single-phase</b>			
RANGER MC 10/50M ST	5.0 A	4.8 A	10.0 A
RANGER MC 15/50M ST	8.2 A	7.9 A	-

MODEL	VOLTAGE			
	230 V	400 V	240 V	415 V
<b>Three-phase</b>				
RANGER MC 10/50 ST	3.7 A	2.1 A	3.5 A	2.0 A
RANGER MC 15/50 ST	5.6 A	3.2 A	5.4 A	3.1 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
RANGER MC 10/50M ST	RANGER MC 10/50 ST	54	72
RANGER MC 15/50M ST	RANGER MC 15/50 ST	54	72

# RANGER

## SUBMERSIBLE PUMPS



### VORTEX

-  Filthy water
-  Domestic use
-  Civil use
-  Industrial use



### PERFORMANCE RANGE

- Flow rate up to **650 l/min** (39 m<sup>3</sup>/h)
- Head up to **14 m**

### APPLICATION LIMITS

- **5 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of solids:
  - up to **Ø 40 mm** for RANGER /35
  - up to **Ø 50 mm** for RANGER /50
- Minimum immersion depth for continuous service:
  - **280 mm** for RANGER /35
  - **300 mm** for RANGER /50

### CONSTRUCTION AND SAFETY STANDARDS

- The pumps are complete with:
- power cable
  - float switch for single-phase versions

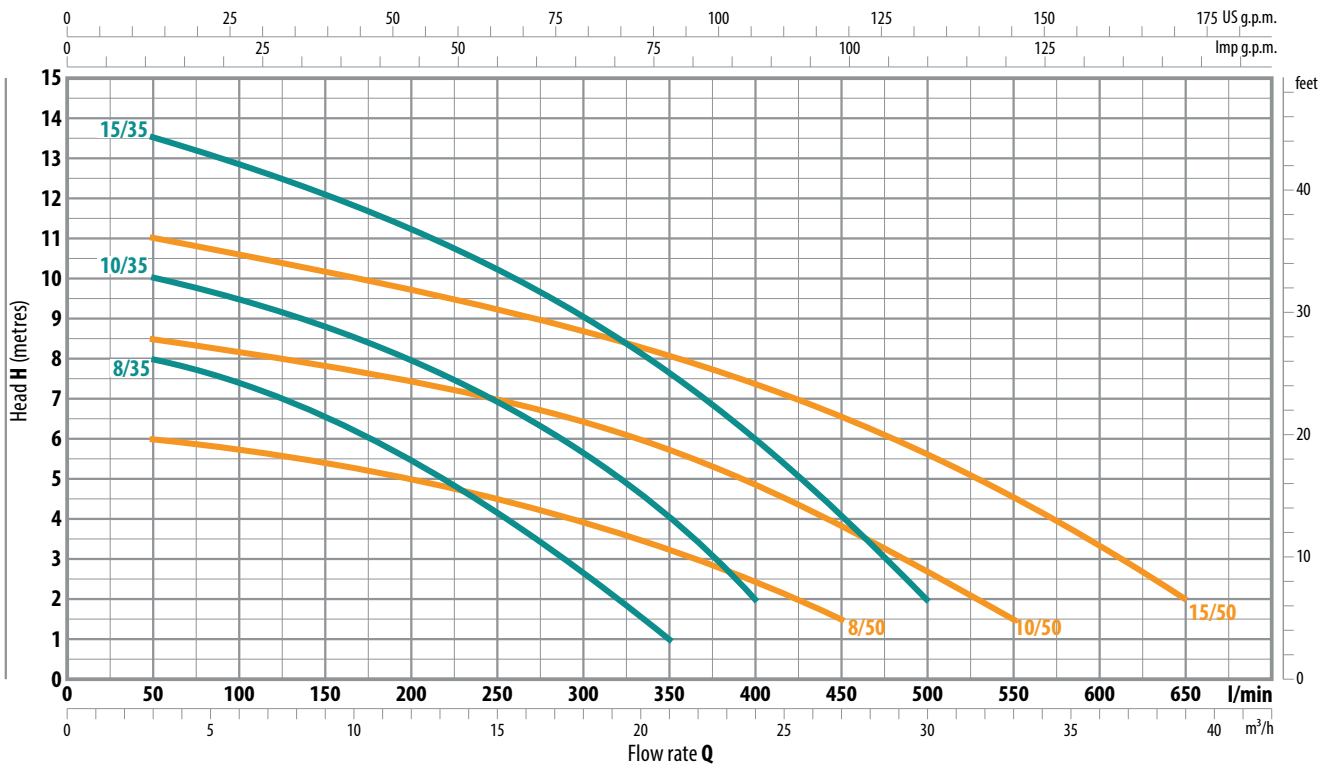
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n=2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate													
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	3	6	12	18	21	24	27	30	33	36	39	
				l/min	0	50	100	200	300	350	400	450	500	550	600	650		
RANGER 8/35M	RANGER 8/35	0.55	0.75	H metres	9	8	7.5	5.5	2.7	1								
RANGER 10/35M	RANGER 10/35	0.75	1		11	10	9.5	8	5.7	4	2							
RANGER 15/35M	RANGER 15/35	1.1	1.5		14	13.5	12.8	11.2	9	7.7	6	4	2					
RANGER 8/50M	RANGER 8/50	0.55	0.75		6.5	6	5.8	5	4	3.3	2.5	1.5						
RANGER 10/50M	RANGER 10/50	0.75	1		9	8.5	8.2	7.5	6.5	5.8	5	3.8	2.5	1.5				
RANGER 15/50M	RANGER 15/50	1.1	1.5		11.5	11	10.5	9.8	8.7	8	7.5	6.5	5.5	4.5	3.5	2		

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

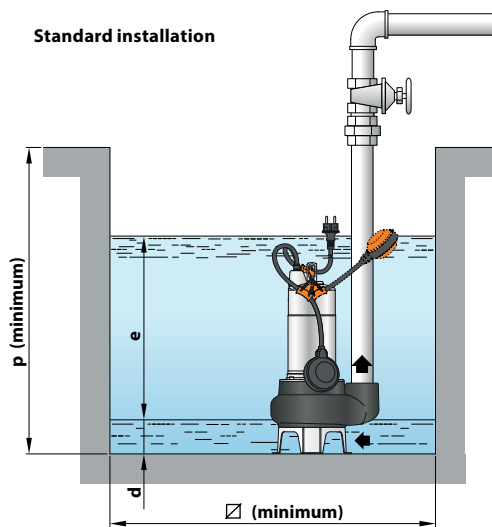
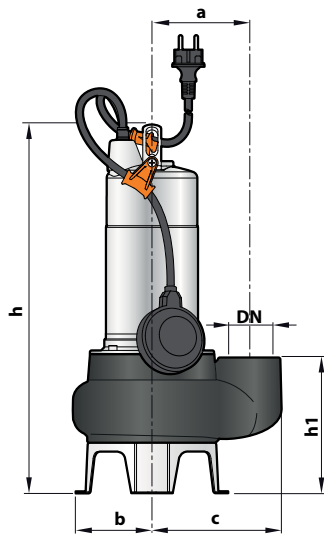
## INSTALLATION AND USE

RANGER pumps are recommended for domestic, civil and industrial applications in all cases where the water contains suspended solids up to Ø 50 mm, for example groundwater, surface water, filthy and dirty water.

They are for example suitable for draining flooded areas such as cellars, underground car parks, car washes, for emptying cesspools and for sewage disposal.

These pumps distinguish themselves for their reliability, which can be best appreciated under automatic operating conditions in fixed installations for the disposal of waste water in the home (from dishwashers, washing machines) and for emptying drainage traps.

## DIMENSIONS AND WEIGHT



## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304 VORTEX type
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Silicon carbide - Graphite - NBR <b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m for RANGER 8-10/35, 8-10/50 10 m for RANGER 15/35, 15/50 (with Schuko plug for single-phase versions only)

MODEL		PORT DN	Passage of solids	DIMENSIONS mm										kg					
Single-phase	Three-phase			a	b	c	h	h1	d	e	p	Ø	1~	3~					
RANGER 8/35M	RANGER 8/35	1½"	Ø 40 mm	115	95	148	406	139	50	variable	500	500	12.9	12.6					
RANGER 10/35M	RANGER 10/35						421						13.7	12.6					
RANGER 15/35M	RANGER 15/35						421						15.7	14.7					
RANGER 8/50M	RANGER 8/50	2"	Ø 50 mm			115	95	155	431				164	60	variable	500	500	13.4	13.1
RANGER 10/50M	RANGER 10/50								446									14.2	13.1
RANGER 15/50M	RANGER 15/50								446									16.2	15.2

## ABSORPTION

MODEL	VOLTAGE		
	Single-phase	230 V	240 V
RANGER 8/35M	3.5 A	3.4 A	7.0 A
RANGER 10/35M	4.8 A	4.6 A	9.6 A
RANGER 15/35M	7.4 A	7.1 A	-
RANGER 8/50M	3.7 A	3.5 A	7.4 A
RANGER 10/50M	5.0 A	4.8 A	10.0 A
RANGER 15/50M	7.1 A	6.8 A	-

MODEL	VOLTAGE			
	Three-phase	230 V	400 V	240 V
RANGER 8/35	3.0 A	1.7 A	2.9 A	1.65 A
RANGER 10/35	3.5 A	2.0 A	3.4 A	1.95 A
RANGER 15/35	5.2 A	3.0 A	5.0 A	2.9 A
RANGER 8/50	3.2 A	1.8 A	3.1 A	1.75 A
RANGER 10/50	3.5 A	2.0 A	3.4 A	1.95 A
RANGER 15/50	5.2 A	3.0 A	5.0 A	2.9 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
RANGER 8/35M	RANGER 8/35	60	80
RANGER 10/35M	RANGER 10/35	60	80
RANGER 15/35M	RANGER 15/35	54	72
RANGER 8/50M	RANGER 8/50	54	72
RANGER 10/50M	RANGER 10/50	54	72
RANGER 15/50M	RANGER 15/50	54	72

# RANGER MC

## SUBMERSIBLE PUMPS



### DOUBLE-CHANNEL

-  Filthy water
-  Domestic use
-  Civil use
-  Industrial use



### PERFORMANCE RANGE

- Flow rate up to **750 l/min** (45 m<sup>3</sup>/h)
- Head up to **15 m**

### APPLICATION LIMITS

- **5 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of suspended solids up to **Ø 50 mm**
- Minimum immersion depth for continuous service: **300 mm**

### CONSTRUCTION AND SAFETY STANDARDS

The pumps are complete with:

- power cable
- float switch for single-phase versions

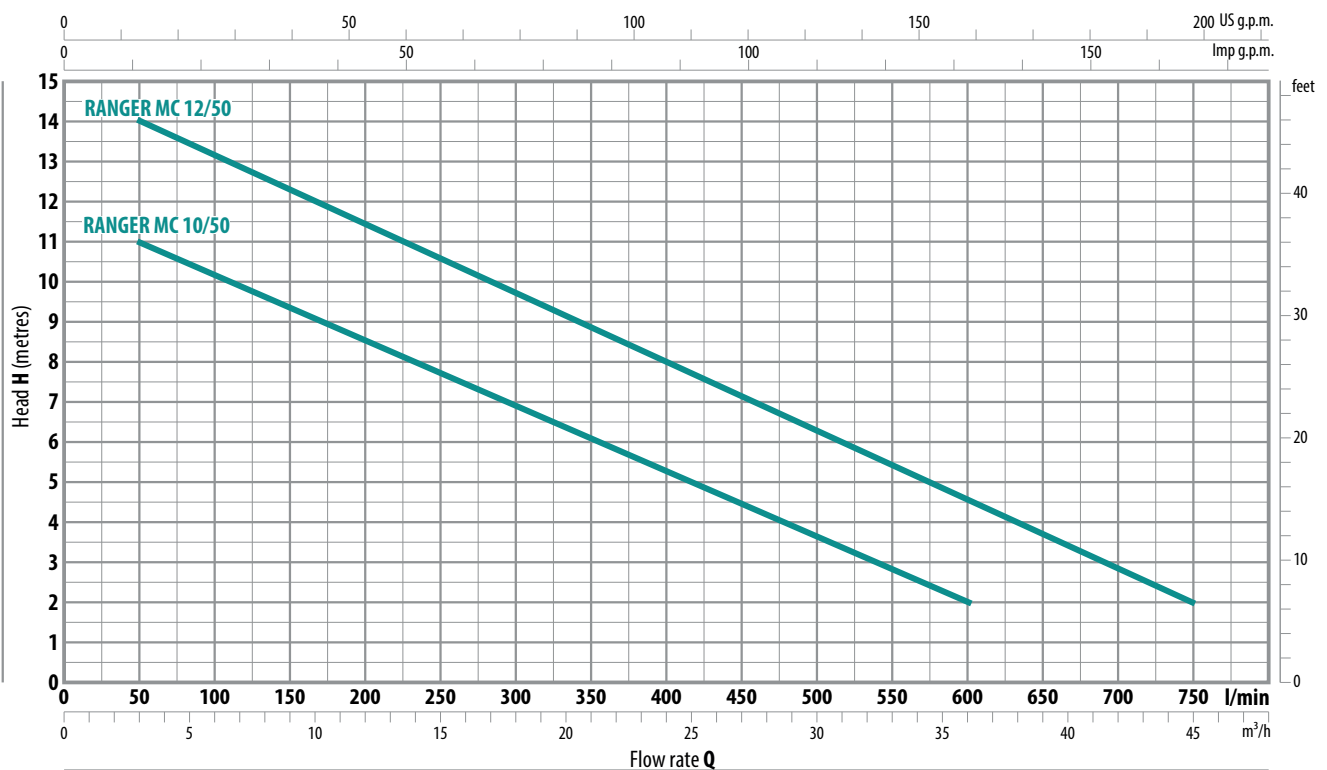
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n=2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate																			
Single-phase	Three-phase	kW	HP		0	3	6	12	18	24	30	36	42	45	0	50	100	200	300	400	500	600	700	750
RANGER MC 10/50M	RANGER MC 10/50	0.75	1	H metres	12	11	10	8.5	7	5	3.6	2												
RANGER MC 12/50M	RANGER MC 12/50	1.1	1.5		15	14	13	11.5	9.7	8	6.3	4.6	2.9	2										

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

RANGER MC submersible pumps are suitable for draining dirty and filthy water in domestic and civil applications. They come equipped with a DOUBLE-CHANNEL stainless steel impeller and are capable of pumping liquids containing short fibred suspended solids up to Ø 50 mm.

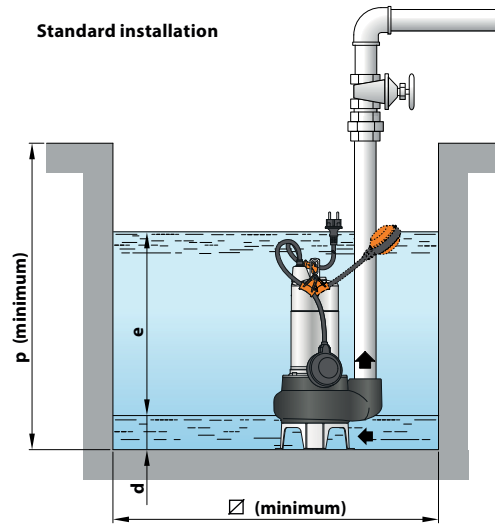
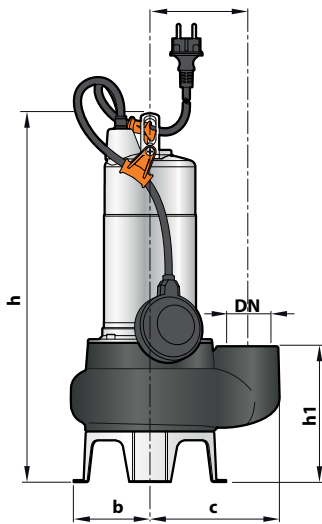
They are ideal for pumping sewage, waste water, surface water and water mixed with mud in locations such as blocks of flats and detached houses.

These pumps distinguish themselves for their reliability, which can be best appreciated under automatic operating conditions in fixed installations.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Precision cast stainless steel AISI 304 DOUBLE-CHANNEL type
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Silicon carbide - Graphite - NBR <b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 5 m for RANGER 10/50 10 m for RANGER 12/50 (with Schuko plug for single-phase versions only)

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	Passage of solids	DIMENSIONS mm								kg		
Single-phase	Three-phase			a	b	c	h	h1	d	e	p	Ø	1~	3~
RANGER MC 10/50M	RANGER MC 10/50	2"	Ø 50 mm	115	95	155	431	164	60	variable	500	500	14.9	13.8
RANGER MC 12/50M	RANGER MC 12/50						446						16.5	15.5

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
RANGER MC 10/50M	5.0 A	4.8 A	10.0 A
RANGER MC 12/50M	8.2 A	7.9 A	-

MODEL	VOLTAGE			
	230 V	400 V	240 V	415 V
RANGER MC 10/50	3.7 A	2.1 A	3.5 A	2.0 A
RANGER MC 12/50	5.6 A	3.2 A	5.4 A	3.1 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
RANGER MC 10/50M	RANGER MC 10/50	54	72
RANGER MC 12/50M	RANGER MC 12/50	54	72

### VORTEX

- Filthy water
- Domestic use
- Civil use



### PERFORMANCE RANGE

- Flow rate up to **650 l/min** (39 m<sup>3</sup>/h)
- Head up to **14 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of solids:
  - up to **Ø 40 mm** for TITAN /35
  - up to **Ø 50 mm** for TITAN /45
- Minimum immersion depth for continuous service:
  - **280 mm** for TITAN /35
  - **300 mm** for TITAN /45

### CONSTRUCTION AND SAFETY STANDARDS

- Power cable
- Float switch for single-phase versions

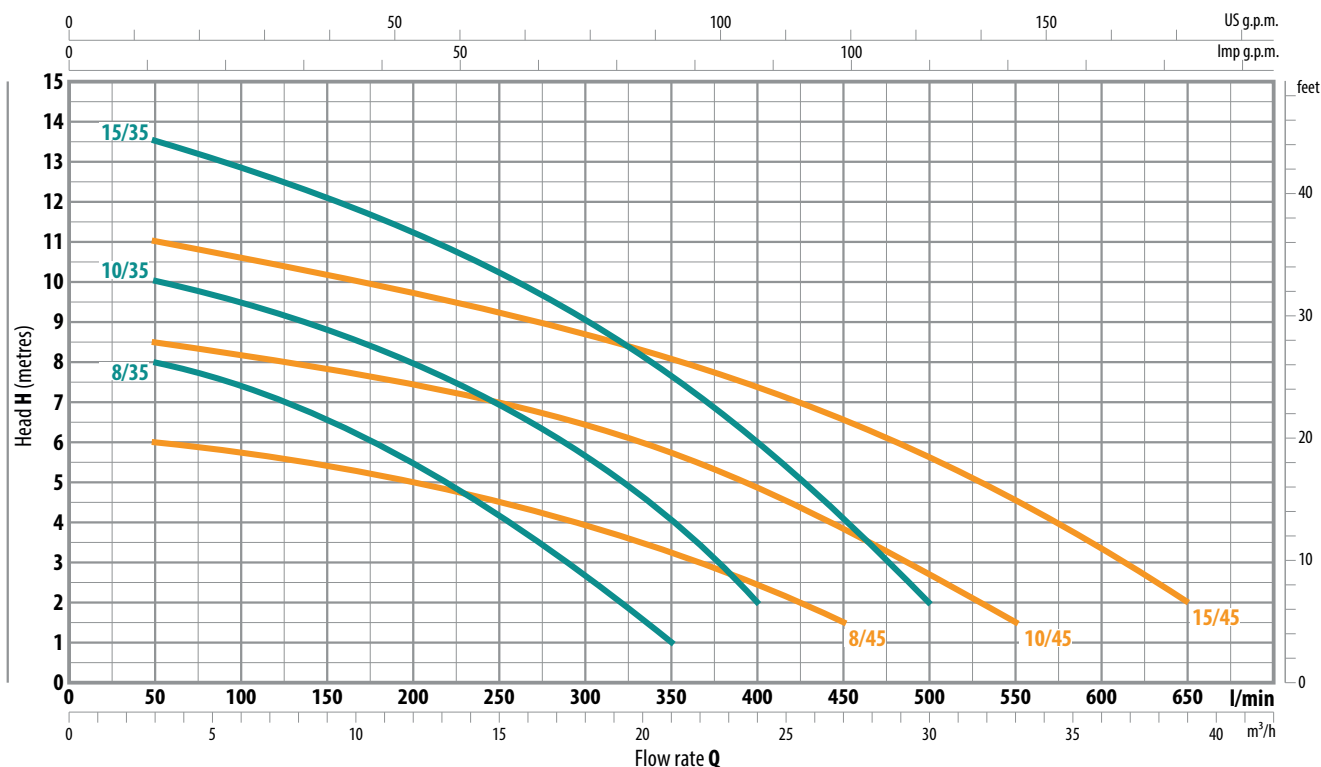
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	H metres													
Single-phase	Three-phase	kW	HP		0	3	6	12	18	21	24	27	30	33	36	39		
				l/min	0	50	100	200	300	350	400	450	500	550	600	650		
TITAN 8/35M	TITAN 8/35	0.55	0.75	H metres	9	8	7.5	5.5	2.7	1								
TITAN 10/35M	TITAN 10/35	0.75	1		11	10	9.5	8	5.7	4	2							
TITAN 15/35M	TITAN 15/35	1.1	1.5		14	13.5	12.8	11.2	9	7.7	6	4	2					
TITAN 8/45M	TITAN 8/45	0.55	0.75		6.5	6	5.8	5	4	3.3	2.5	1.5						
TITAN 10/45M	TITAN 10/45	0.75	1		9	8.5	8.2	7.5	6.5	5.8	5	3.8	2.5	1.5				
TITAN 15/45M	TITAN 15/45	1.1	1.5		11.5	11	10.5	9.8	8.7	8	7.5	6.5	5.5	4.5	3.5	2		

Q = Flow rate  
H = Total manometric head

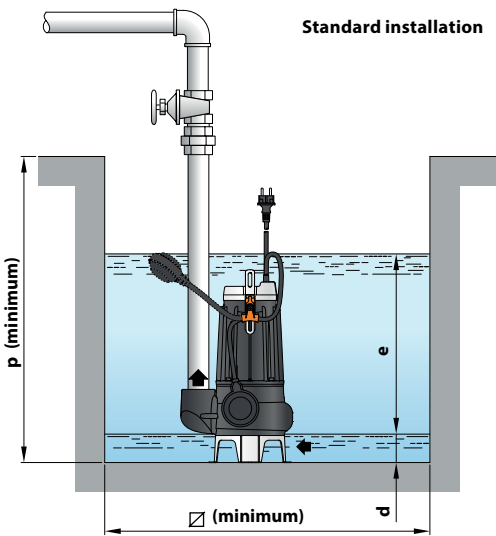
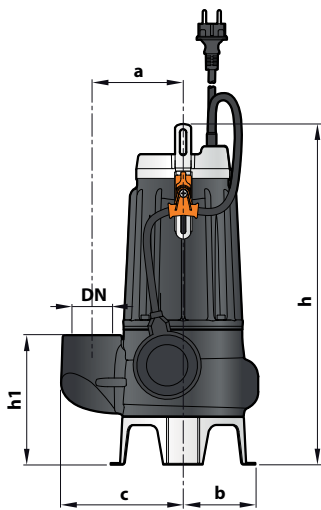
Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.



## INSTALLATION AND USE

TITAN series pumps, made from heavy gauge cast iron offering exceptional sturdiness and abrasion resistance, come equipped with a VORTEX impeller and are therefore suitable for draining waste water containing suspended solids, filthy water and mixed with mud.

## DIMENSIONS AND WEIGHT



## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Stainless steel AISI 304 VORTEX type
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Silicon carbide - Graphite - NBR <b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable (with Schuko plug for single-phase versions only)

MODEL		PORT DN	Passage of solids	DIMENSIONS mm									kg	
Single-phase	Three-phase			a	b	c	h	h1	d	e	p	Ø	1~	3~
TITAN 8/35M	TITAN 8/35	1½"	Ø 40 mm	115	95	148	388	139	50	variable	500	500	17.0	16.7
TITAN 10/35M	TITAN 10/35						403						17.8	16.7
TITAN 15/35M	TITAN 15/35					17.5	17.2							
TITAN 8/45M	TITAN 8/45	2"	Ø 50 mm	115	95	155	413	164	60	variable	500	500	18.3	17.2
TITAN 10/45M	TITAN 10/45						428						18.3	17.2
TITAN 15/45M	TITAN 15/45					19.9	18.9							

## ABSORPTION

MODEL	VOLTAGE		
	230 V	240 V	110 V
Single-phase	230 V	240 V	110 V
TITAN 8/35M	3.5 A	3.4 A	7.0 A
TITAN 10/35M	4.8 A	4.6 A	9.6 A
TITAN 15/35M	7.4 A	7.1 A	-
TITAN 8/45M	3.7 A	3.5 A	7.4 A
TITAN 10/45M	5.0 A	4.8 A	10.0 A
TITAN 15/45M	7.1 A	6.8 A	-

MODEL	VOLTAGE			
	230 V	400 V	240 V	415 V
Three-phase	230 V	400 V	240 V	415 V
TITAN 8/35	3.0 A	1.7 A	2.9 A	1.65 A
TITAN 10/35	3.5 A	2.0 A	3.4 A	1.95 A
TITAN 15/35	5.2 A	3.0 A	5.0 A	2.9 A
TITAN 8/45	3.2 A	1.8 A	3.1 A	1.75 A
TITAN 10/45	3.5 A	2.0 A	3.4 A	1.95 A
TITAN 15/45	5.2 A	3.0 A	5.0 A	2.9 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
TITAN 8/35M	TITAN 8/35	60	80
TITAN 10/35M	TITAN 10/35	60	80
TITAN 15/35M	TITAN 15/35	60	80
TITAN 8/45M	TITAN 8/45	54	72
TITAN 10/45M	TITAN 10/45	54	72
TITAN 15/45M	TITAN 15/45	54	72

# PATROL

## SUBMERSIBLE PUMPS



### DOUBLE-CHANNEL

-  Filthy water
-  Domestic use
-  Civil use



### PERFORMANCE RANGE

- Flow rate up to **750 l/min** (45 m<sup>3</sup>/h)
- Head up to **15 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of suspended solids up to **Ø 50 mm**
- Minimum immersion depth for continuous service: **300 mm**

### CONSTRUCTION AND SAFETY STANDARDS

- Power cable
- Float switch for single-phase versions

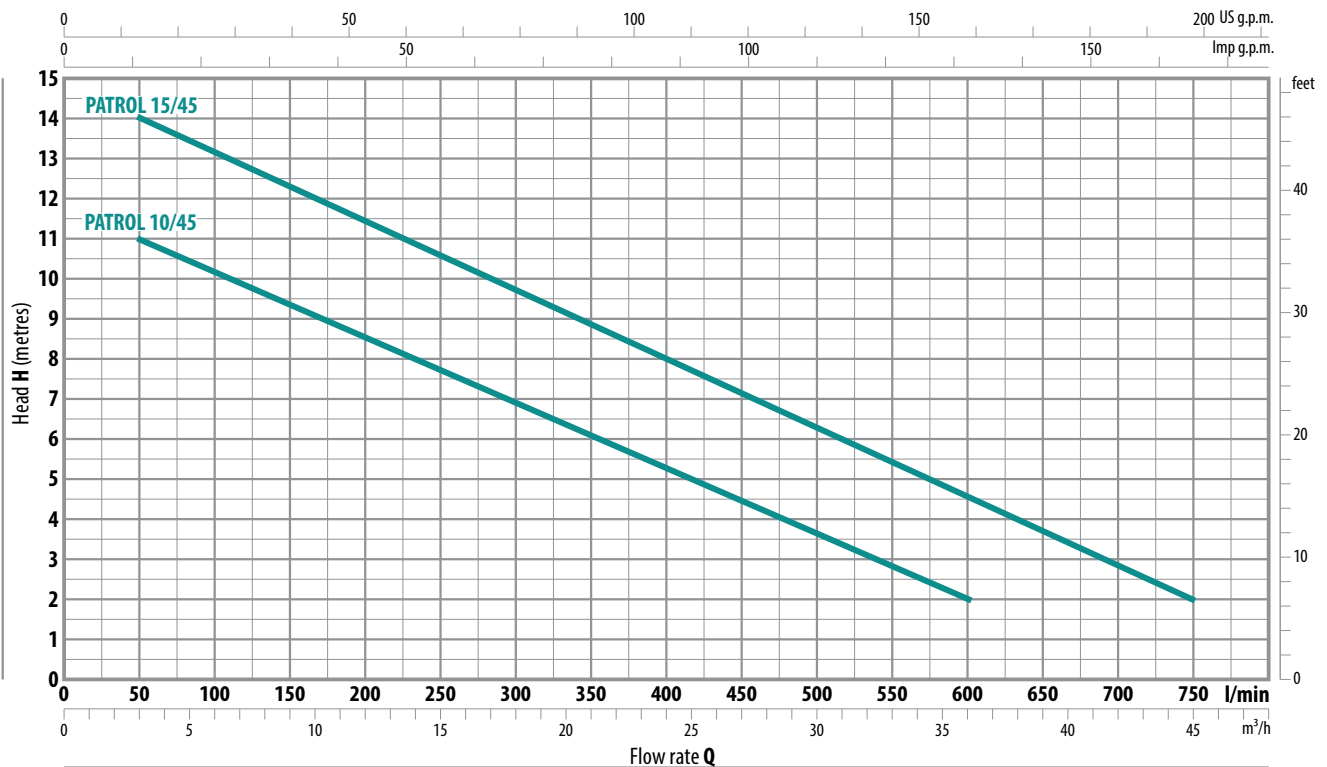
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

| 50 Hz | n= 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate												
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	3	6	12	18	24	30	36	42	45		
				l/min	0	50	100	200	300	400	500	600	700	750			
PATROL 10/45M	PATROL 10/45	0.75	1	H metres	12	11	10	8.5	7	5	3.5	2					
PATROL 15/45M	PATROL 15/45	1.1	1.5		15	14	13	11.5	9.7	8	6.3	4.5	3	2			

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## INSTALLATION AND USE

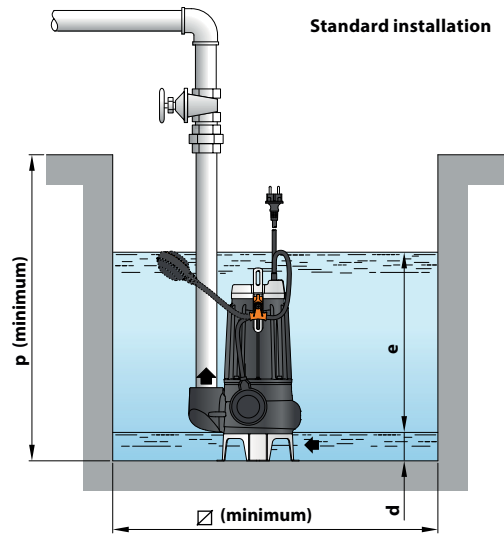
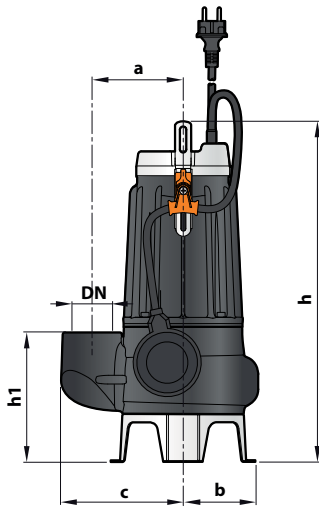
PATROL series pumps, made from heavy gauge cast iron offering exceptional sturdiness, abrasion resistance and durability, come equipped with a DOUBLE-CHANNEL impeller and are capable of pumping liquids containing short fibred suspended solids up to Ø 50 mm.

Recommended for conveying drained water and sewage, waste water, water mixed with mud, groundwater and surface water for applications in blocks of flats, industries, multi-storey and underground car parks, wash areas, etc.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Precision cast stainless steel AISI 304 DOUBLE-CHANNEL type
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Silicon carbide - Graphite - NBR <b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable (with Schuko plug for single-phase versions only)

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	Passage of solids	DIMENSIONS mm										kg	
Single-phase	Three-phase			a	b	c	h	h1	d	e	p	Ø	1~	3~	
PATROL 10/45M	PATROL 10/45	2"	Ø 50 mm	115	95	155	413	164	60	variable	500	500	19.0	17.9	
PATROL 15/45M	PATROL 15/45						428						20.2	19.2	

## ABSORPTION

MODEL	VOLTAGE		
	Single-phase	230 V	240 V
PATROL 10/45M	5.0 A	4.8 A	10.0 A
PATROL 15/45M	8.2 A	7.9 A	-

MODEL	VOLTAGE			
	Three-phase	230 V	400 V	240 V
PATROL 10/45	3.7 A	2.1 A	3.5 A	2.0 A
PATROL 15/45	5.6 A	3.2 A	5.4 A	3.1 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
PATROL 10/45M	PATROL 10/45	54	72
PATROL 15/45M	PATROL 15/45	54	72

### VORTEX

- Filthy water
- Domestic use
- Civil use
- Industrial use



### PERFORMANCE RANGE

- Flow rate up to **1200 l/min** (72 m<sup>3</sup>/h)
- Head up to **16 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of solids:
  - up to **Ø 50 mm** for TITAN /50
  - up to **Ø 70 mm** for TITAN /70
- Minimum immersion depth for continuous service:
  - **390 mm** for TITAN /50
  - **430 mm** for TITAN /70

### CONSTRUCTION AND SAFETY STANDARDS

- Power cable
- External float switch and control box for single-phase versions

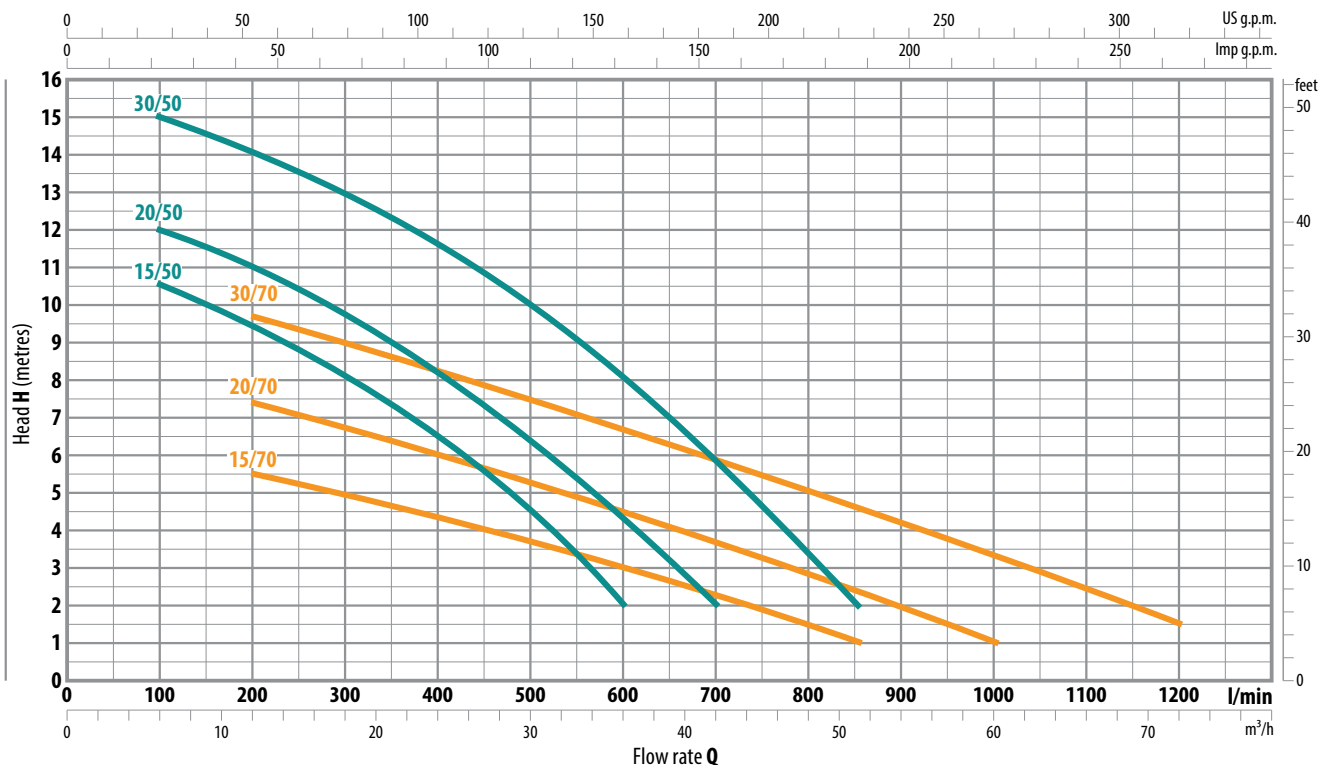
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



### CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n = 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate																
Single-phase	Three-phase	kW	HP		0	6	12	18	24	30	36	42	48	51	54	60	66	72			
				l/min	0	100	200	300	400	500	600	700	800	850	900	1000	1100	1200			
TITAN 15/50M	TITAN 15/50	1.1	1.5	H metres	11.5	10.5	9.5	8.2	6.5	4.5	2										
TITAN 20/50M	TITAN 20/50	1.5	2		13	12	11	9.5	8	6.5	4.5	2									
TITAN 30/50M	TITAN 30/50	2.2	3		16	15	14	13	11.5	10	8	5.9	3.3	2							
TITAN 15/70M	TITAN 15/70	1.1	1.5		6.5	–	5.5	5	4.4	3.7	3	2.2	1.5	1							
TITAN 20/70M	TITAN 20/70	1.5	2		8.5	–	7.4	6.7	6	5.2	4.5	3.6	2.8	2.4	2	1					
TITAN 30/70M	TITAN 30/70	2.2	3		11	–	9.7	9	8.2	7.5	6.7	5.8	5	4.6	4.2	3.3	2.5	1.5			

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

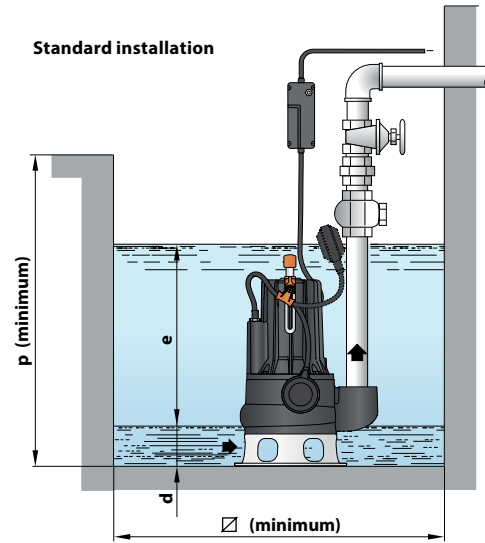
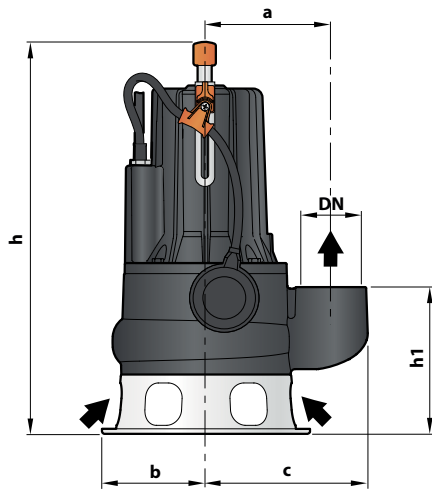
## INSTALLATION AND USE

The TITAN series of pumps, manufactured from heavy gauge robust cast iron, resistant to abrasion and long-lasting, are fitted with a VORTEX impeller and are therefore suitable for draining dirty, filthy and reflux water, and water mixed with putrid mud. They are suitable for installation in sewers, tunnels, excavations, canals, underground car parks, etc.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	VORTEX type in cast iron with an Epoxy Electro Coating treatment
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Ceramic - Graphite - NBR
	<b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	Passage of solids	DIMENSIONS mm									kg	
Single-phase	Three-phase			a	b	c	h	h1	d	e	p	∅	1~	3~
TITAN 15/50M	TITAN 15/50	2½"	Ø 50 mm	162	135	210	509	191	75	variable	800	800	36.2	34.9
TITAN 20/50M	TITAN 20/50						522/509						37.3	36.0
TITAN 30/50M	TITAN 30/50						548						41.2	38.0
TITAN 15/70M	TITAN 15/70	3"	Ø 70 mm	180	150	237	548	233	85	variable	800	800	39.0	37.7
TITAN 20/70M	TITAN 20/70						562/548						40.1	38.8
TITAN 30/70M	TITAN 30/70						562/548						44.0	40.8

## ABSORPTION

MODEL	VOLTAGE	
Single-phase	230 V	240 V
TITAN 15/50M	8.8 A	8.7 A
TITAN 20/50M	10.2 A	10.1 A
TITAN 30/50M	15.6 A	15.5 A
TITAN 15/70M	8.7 A	8.6 A
TITAN 20/70M	10.0 A	9.9 A
TITAN 30/70M	15.0 A	14.9 A

MODEL	VOLTAGE		
Three-phase	230÷240 V	400÷415 V	690÷720 V
TITAN 15/50	5.9 A	3.4 A	2.0 A
TITAN 20/50	7.3 A	4.2 A	2.4 A
TITAN 30/50	9.9 A	5.7 A	3.3 A
TITAN 15/70	5.7 A	3.3 A	1.9 A
TITAN 20/70	7.3 A	4.2 A	2.4 A
TITAN 30/70	9.5 A	5.5 A	3.2 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
TITAN 15/50M	TITAN 15/50	16	24
TITAN 20/50M	TITAN 20/50	16	24
TITAN 30/50M	TITAN 30/50	16	24
TITAN 15/70M	TITAN 15/70	12	12
TITAN 20/70M	TITAN 20/70	12	12
TITAN 30/70M	TITAN 30/70	12	12

# PATROL

## SUBMERSIBLE PUMPS



### DOUBLE-CHANNEL

-  Filthy water
-  Domestic use
-  Civil use
-  Industrial use



### PERFORMANCE RANGE

- Flow rate up to **1600 l/min** (96 m<sup>3</sup>/h)
- Head up to **25 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of solids:
  - up to **Ø 50 mm** for PATROL /50
  - up to **Ø 70 mm** for PATROL /70
- Minimum immersion depth for continuous service:
  - **390 mm** for PATROL /50
  - **430 mm** for PATROL /70

### CONSTRUCTION AND SAFETY STANDARDS

- Power cable
- External float switch and control box for single-phase versions

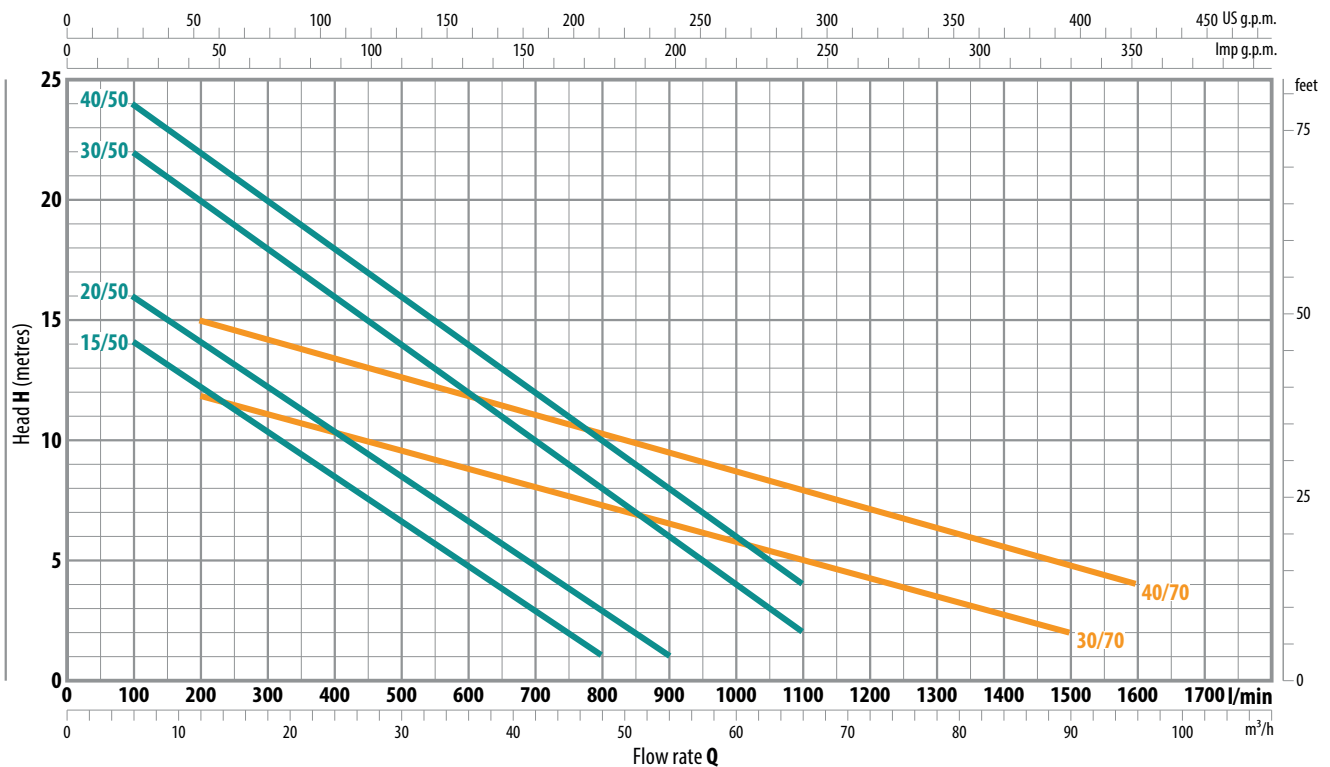
**EN 60335-1**  
**IEC 60335-1**  
**CEI 61-150**

**EN 60034-1**  
**IEC 60034-1**  
**CEI 2-3**



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n= 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate																
Single-phase	Three-phase	kW	HP		0	6	12	18	24	30	36	42	48	54	60	66	72	90	96		
PATROL 15/50M	PATROL 15/50	1.1	1.5	H metres	16	14	12.5	10.5	8.5	6.5	4.5	3	1								
PATROL 20/50M	PATROL 20/50	1.5	2		18	16	14	12.5	10.5	8.5	6.5	5	3	1							
PATROL 30/50M	PATROL 30/50	2.2	3		24	22	20	18	16	14	12	10	8	6	4	2					
–	PATROL 40/50	3	4		25	24	22	20	18	16	14	12	10	8	6	4					
PATROL 30/70M	PATROL 30/70	2.2	3		13	–	12	11	10.5	9.7	9	8	7.5	6.5	6	5	4.5	2			
–	PATROL 40/70	3	4		17	–	15	14	13.5	12.5	12	11	10.5	9.5	8.5	8	7	4.8	4		

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

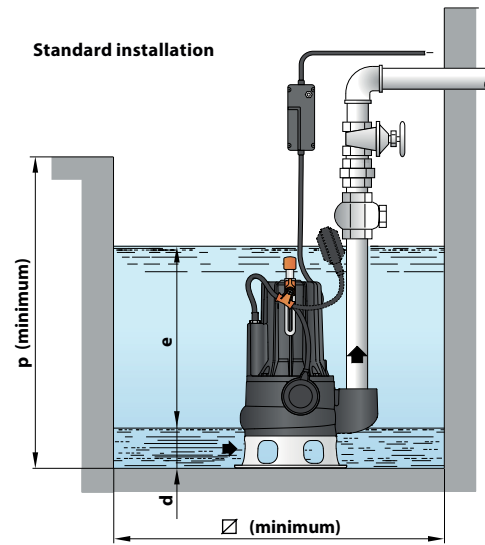
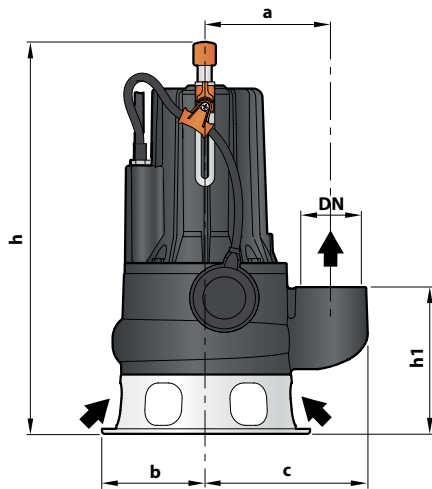
## INSTALLATION AND USE

PATROL series pumps, made from heavy gauge robust cast iron, resistant to abrasion and long-lasting, are fitted with a DOUBLE-CHANNEL impeller and are capable of pumping liquids containing short fibred suspended solids. They are ideal for pumping sewage, waste water, water mixed with mud, groundwater and surface water in locations such as blocks of flats, public buildings, factories, multi-storey and underground car parks, washing areas, etc.

## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with threaded port in compliance with ISO 228/1
<b>IMPELLER</b>	Precision cast stainless steel AISI 304 DOUBLE-CHANNEL type
<b>MOTOR SHAFT</b>	Stainless steel AISI 431
<b>TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Ceramic - Graphite - NBR <b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	Passage of solids	DIMENSIONS mm								kg		
Single-phase	Three-phase			a	b	c	h	h1	d	e	p	Ø	1~	3~
PATROL 15/50M	PATROL 15/50	2½"	Ø 50 mm	162	135	210	509	191	75	variable	800	800	36.7	35.4
PATROL 20/50M	PATROL 20/50						522/509						37.7	36.4
PATROL 30/50M	PATROL 30/50						522						41.9	38.6
-	PATROL 40/50						562/548						-	42.2
PATROL 30/70M	PATROL 30/70	3"	Ø 70 mm	180	150	237	562/548	233	85				45.0	41.7
-	PATROL 40/70						562						-	45.3

## ABSORPTION

MODEL	VOLTAGE	
Single-phase	230 V	240 V
PATROL 15/50M	9.0 A	8.9 A
PATROL 20/50M	10.5 A	10.4 A
PATROL 30/50M	15.2 A	15.1 A
PATROL 30/70M	15.2 A	15.1 A

MODEL	VOLTAGE		
Three-phase	230÷240 V	400÷415 V	690÷720 V
PATROL 15/50	6.1 A	3.5 A	2.0 A
PATROL 20/50	7.4 A	4.3 A	2.5 A
PATROL 30/50	9.9 A	5.7 A	3.3 A
PATROL 40/50	13.5 A	7.8 A	4.5 A
PATROL 30/70	10.2 A	5.9 A	3.4 A
PATROL 40/70	13.5 A	7.8 A	4.5 A

## PALLETIZATION

MODEL		GROUPAGE	CONTAINER
Single-phase	Three-phase	n. pumps	n. pumps
PATROL 15/50M	PATROL 15/50	16	24
PATROL 20/50M	PATROL 20/50	16	24
PATROL 30/50M	PATROL 30/50	16	24
-	PATROL 40/50	16	24
PATROL 30/70M	PATROL 30/70	12	12
-	PATROL 40/70	12	12

Filthy water

Domestic use

Civil use



### PERFORMANCE RANGE

- Flow rate up to **220 l/min** (13.2 m<sup>3</sup>/h)
- Head up to **30 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Suction down to **50 mm** above ground level
- Minimum immersion depth for continuous service **300 mm**

### CONSTRUCTION AND SAFETY STANDARDS

- Power cable
- External float switch and control box for single-phase versions

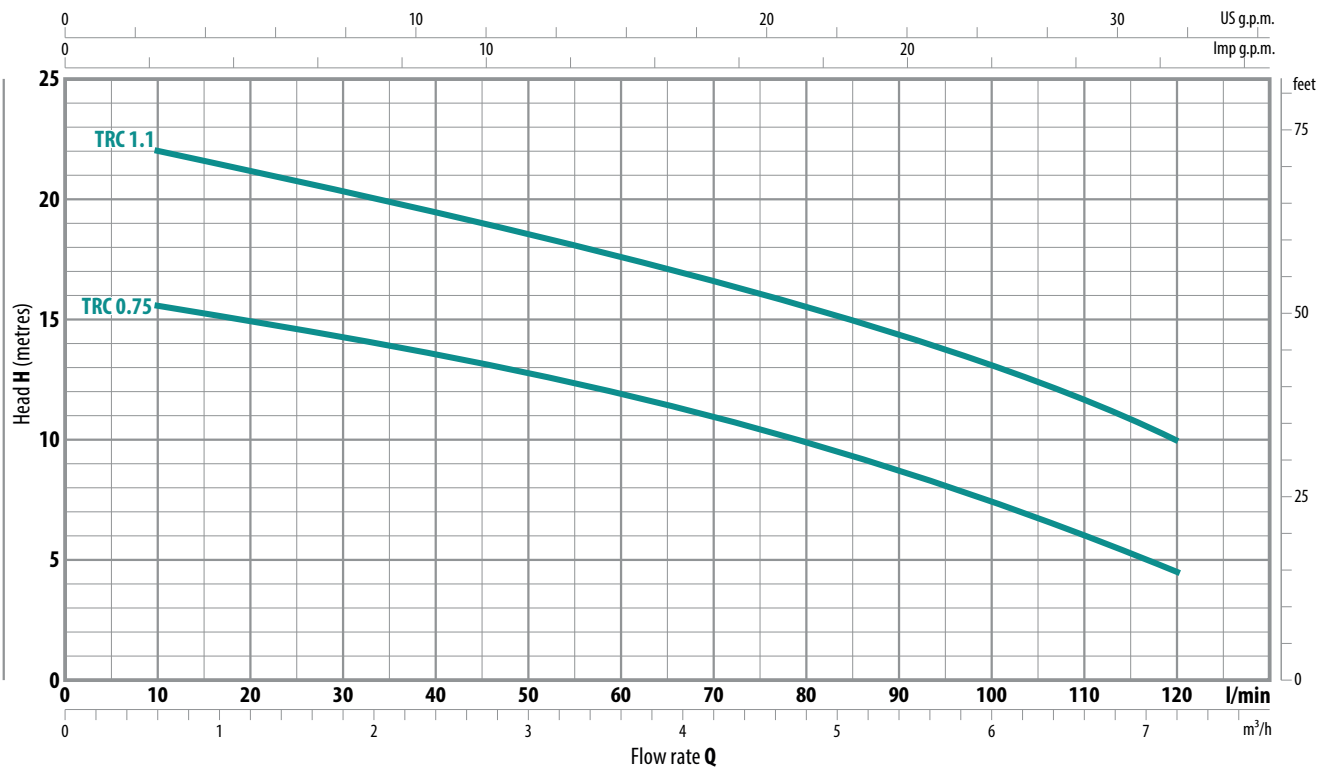
EN 60335-1  
IEC 60335-1  
CEI 61-150

EN 60034-1  
IEC 60034-1  
CEI 2-3



## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz | n=2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	Flow rate Q							
Single-phase	Three-phase	kW	HP		0	0.6	1.2	2.4	3.6	4.8	6.0	7.2
TRCm 0.75	TRC 0.75	0.75	1	H metres	16.5	15.5	15	13.5	11.8	10	7.5	4.5
TRCm 1.1	TRC 1.1	1.1	1.5		23	22	21	19.5	17.5	15.5	13	10

Q = Flow rate  
H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.



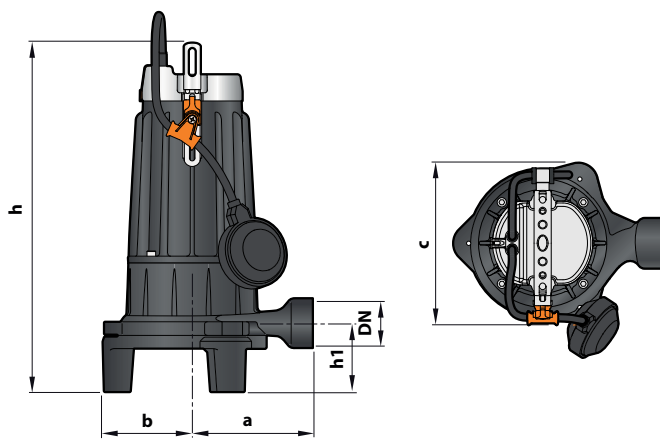
## INSTALLATION AND USE

The TRC series of grinder pumps manufactured from heavy gauge robust cast iron, resistant to abrasion and long-lasting, are fitted with a GRINDER in tempered stainless steel of great resistance which completely grinds up solid bodies and fibres in waste and reflux water from domestic and civil applications and conveys it under pressure into the sewers through small diameter pipes.

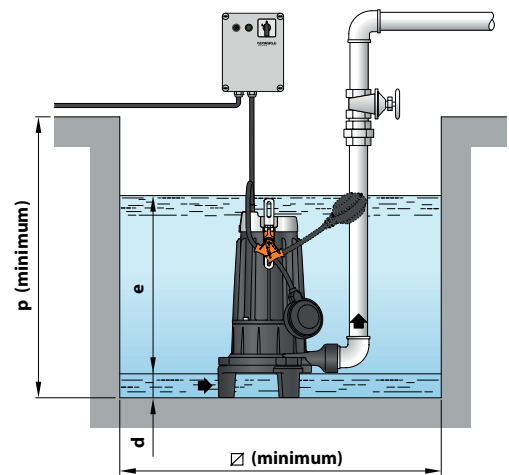
## CONSTRUCTION CHARACTERISTICS

<b>PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded port in compliance with ISO 228/1	
<b>IMPELLER</b>	Technopolymer open type	
<b>GRINDER</b>	Tempered AISI 440C stainless steel	
<b>MOTOR SHAFT</b>	Stainless steel AISI 431	
<b>SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER</b>	<b>Motor side:</b> Silicon carbide - Graphite - NBR	<b>Pump side:</b> Silicon carbide - Silicon carbide - NBR
<b>POWER CABLE</b>	H07 RN-F type 10 m long power cable (with Schuko plug for single-phase versions only)	

## DIMENSIONS AND WEIGHT



Standard installation (for single-phase version)



MODEL		PORT DN	DIMENSIONS mm									kg *	
Single-phase	Three-phase		a	b	c	h	h1	d	e	p	Ø	1~	3~
TRCm 0.75	TR 0.75	1¼"	140	100	200	387	61	50	variable	500	500	23.5	22.6
TRCm 1.1	TR 1.1											23.9	23.1

(\* weight of pump without control box)

## ABSORPTION

MODEL	VOLTAGE	
	230 V	240 V
TRCm 0.75	5.5 A	5.3 A
TRCm 1.1	7.4 A	7.1 A

MODEL	VOLTAGE			
	230 V	400 V	240 V	415 V
TRC 0.75	4.0 A	2.5 A	3.9 A	2.5 A
TRC 1.1	5.2 A	3.0 A	5.0 A	2.9 A

## PALLETIZATION

MODEL		GROUPAGE n. pumps	CONTAINER n. pumps
Single-phase	Three-phase		
TRCm 0.75	TR 0.75	40	60
TRCm 1.1	TR 1.1	40	60

# S.O.S.

## EMERGENCY KIT FOR EMPTYING OR PREVENTING FLOODS



🏠 Domestic use



S.O.S. is the indispensable and practical emergency kit for tackling flooding in garages, cellars and basements with efficacy and speed.

Thanks to the versatile drainage pump and the 15 metres long PVC hose it is possible to swiftly drain the flooded area, if necessary using the plastic crate as a filter.

With S.O.S. you can completely drain the area affected by flooding: the pump can in fact suck up water down to a level of only 2 mm from the bottom.

With S.O.S. you have everything you require ready for use:

- pump with a ready-fitted connector, a 10 metres long power cable with Schuko plug and an external float switch;
- PVC hose with a rapid connector;
- Crate-filter to prevent possible bulky residues blocking water drainage.

### TYPICAL USE

In the case of flooded premises place S.O.S. on the floor, attach the flat hose to the pump by means of the rapid connector, plug into the electricity network and empty the water through the hose. The plastic crate will act as a filter, making it possible to drain down to a level of about 2 cm from the bottom.

In order to drain the residual water disconnect the pump from the crate and place it on the floor. The pump will be able to drain down to a level of only 2 mm from the bottom.

S.O.S. also has the advantage that it can be stored on a shelf so as to have everything necessary in order and ready for use.



## COMPONENTS

### SUBMERSIBLE SPEED MOP PUMP

- Single-phase **230 V - 50 Hz**
- Thermal overload protector incorporated in the winding
- **10 metres** power cable fitted with Schuko plug
- External float switch
- **"CAMLOCK"** rapid connection
- Performance:
  - **H max= 9 m**
  - **Q max= 160 l/min**
- Emptying level down to **2 mm** from the bottom



### PVC HOSE

- **"CAMLOCK"** rapid connection
- Length of tube **15 m**
- Diameter of tube **1 1/4"**



### CRATE-FILTER

- Complete with a system for fixing the pump for a stable operation and an easy detachment for use of the pump without the crate-filter
- Complete with a lid so as to put away S.O.S. in order and have it always ready for use



## DIMENSIONS AND WEIGHTS

TYPE	DIMENSIONS mm			kg*
	a	b	h	
S.O.S.	400	300	320	9.3

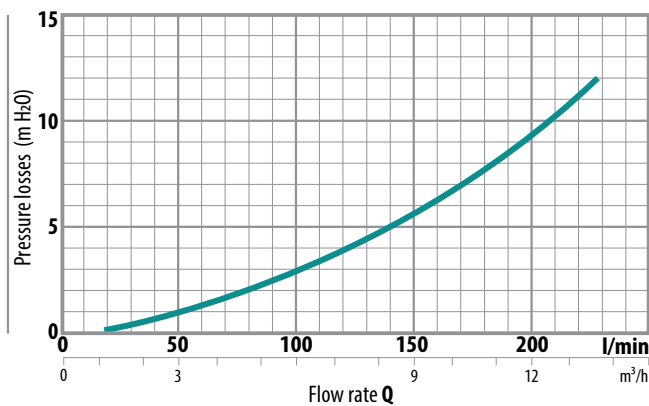
(\* Overall weight: pump, hose, connectors and crate)



↑ Domestic use

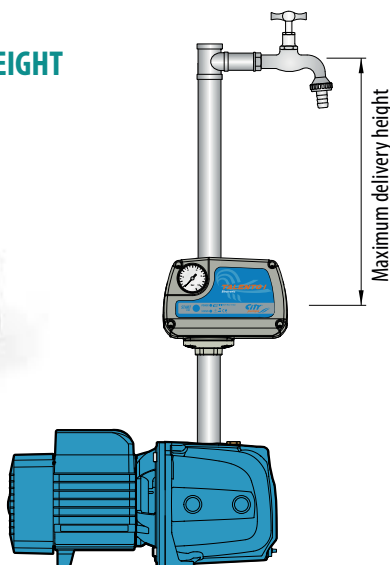


### PRESSURE LOSSES

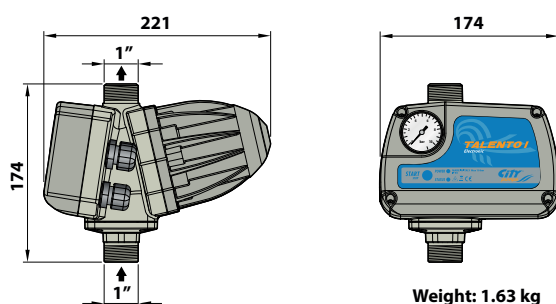


### MAXIMUM DELIVERY HEIGHT

- 2.2 bar version ● = 18 m
- 1.5 bar version ● = 11 m
- 0.8 bar version ● = 5 m



### DIMENSIONS AND WEIGHT



### PERFORMANCE RANGE

- Max flow rate: **200 l/min** (12 m<sup>3</sup>/h)
- Working pressure: **10 bar**
- Restarting pressure: **1.5 bar** ●

### APPLICATION LIMITS

- Maximum liquid temperature **+65 °C**
- Ambient temperature up to **+40 °C**
- Burst pressure **> 40 bar**
- Protection: **IP 65**
- Power: – **0.75 kW (1 HP)** TALENTO-1  
– **1.5 kW (2 HP)** TALENTO-2
- Voltage: **230 V**
- Frequency: **50/60 Hz**
- Max current: – **10 A** TALENTO-1  
– **16 A** TALENTO-2
- Flow rate: **12 m<sup>3</sup>/h**

### CONSTRUCTION AND SAFETY STANDARDS

- Resinated and easily replaced electronic card for complete protection from humidity, fitted in the case with an IP 65 protection.
- The electronic card inside TALENTO has undergone the strictest EMC tests of electromagnetic compatibility.

### INSTALLATION AND USE

The TALENTO series consists of electronic devices designed to start (when a tap is turned on) and stop (when a tap is turned off) single-phase pumps.

A microprocessor protects the pump from dry running, and allows the pump to be restarted either automatically or manually. It also prevents the pump from starting too often when small leaks are present within an installation.

### OPTIONS AVAILABLE ON REQUEST

- TALENTO-1 version with restarting pressure **0.8 bar** ●
- TALENTO-2 version with restarting pressure **2.2 bar** ●
- Version with 1" NPT
- Version with cable and Schuko plug and socket
- Version with pressure gauge

### STARTING PRESSURE

There are three different models available, each with a different starting pressure and easily identified by the coloured cap positioned at the rear of the TALENTO, for installations requiring delivery at various heights.

### ACCESSORIES



# TALENTO SMALL

## ELECTRONIC PRESSURE REGULATORS



↑ Domestic use



### PERFORMANCE RANGE

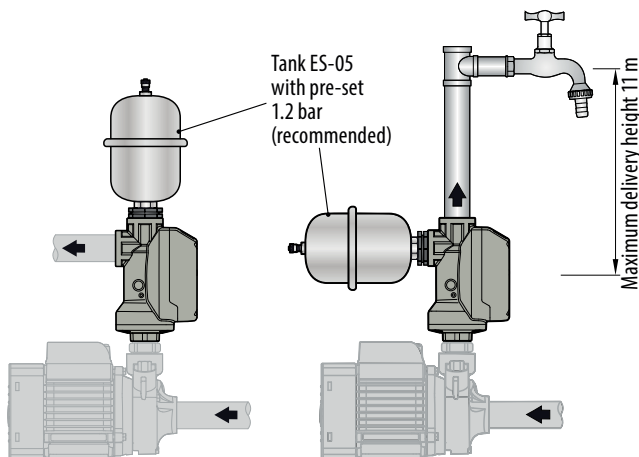
- Max flow rate: **200 l/min** (12 m<sup>3</sup>/h)
- Working pressure: **10 bar**
- Restarting pressure: **1.5 bar**

### APPLICATION LIMITS

- Maximum liquid temperature **+50 °C**
- Ambient temperature up to **+40 °C**
- Burst pressure **40 bar**
- Protection: **IP 65**
- Power: – **0.75 kW (1 HP)** TALENTO SMALL-1  
– **1.5 kW (2 HP)** TALENTO SMALL-2
- Voltage: **230 V**
- Frequency: **50/60 Hz**
- Max current: – **12 A** TALENTO SMALL-1  
– **16 A** TALENTO SMALL-2

### STANDARD INSTALLATION

In order to avoid frequent restarts we advise installing a small accumulation tank (ES-05).



### CONSTRUCTION AND SAFETY STANDARDS

- Tropicalised resinated and easily replaced electronic card for complete protection from humidity, fitted in the case with an IP 65 protection.
- The electronic card inside the TALENTO SMALL has undergone the strictest EMC tests of electromagnetic compatibility (low emission of interference and a high immunity to disturbance) as a guarantee of its reliable use everywhere.

### INSTALLATION AND USE

Flow and pressure sensing device for control and protection of single-phase pumps up to 2 HP (for domestic applications). It starts the pump when there is a drop in system pressure (e.g. when opening a tap) and stops the pump when the flow drops below 2 l/min (tap closed).

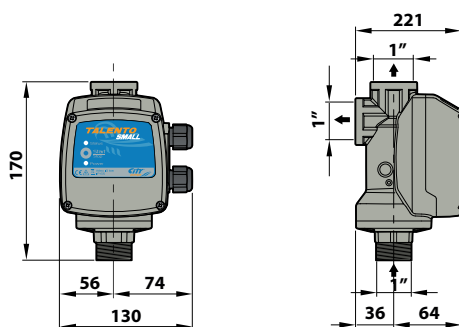
### OPTIONS AVAILABLE ON REQUEST

- Version with pressure gauge

### ACCESSORIES

- **ES-05** Stainless steel 0.5 litre tank (1")
- **GSR** Special three piece joint with an o-ring seal (1" M)

### DIMENSIONS AND WEIGHT



Weight: 0.7 kg





## SP - SPHERICAL TANK

MODEL	FITTING	CAPACITY	PALLETIZATION n. tanks
<b>24 SP</b>	1"	24 litres	54

- Maximum working pressure 8 bar
- Inter-changeable butyl rubber membrane



## CY - CYLINDRICAL TANK

MODEL	FITTING	CAPACITY	PALLETIZATION n. tanks
<b>24 CY</b>	1"	20 litres	56
<b>60 CY</b>	1"	60 litres	15
<b>100 CY</b>	1"	100 litres	12
<b>200 CY</b>	1½"	200 litres	6
<b>300 CY</b>	1½"	300 litres	6

- Maximum working pressure 10 bar
- Inter-changeable butyl rubber membrane



## FLEXIBLE HOUSE

MODEL	PIPE	FITTINGS	LENGTH
<b>FH 5</b>	1"	1" x 1"	500 mm
<b>FH 6</b>	1"	1" x 1"	600 mm
<b>FH 10</b>	1"	1" x 1"	1000 mm

- Flexible EPDM rubber hoses
- Maximum working pressure 10 bar



## FLEXIBLE HOUSE COMPLETE WITH ELBOW

MODEL	PIPE	FITTINGS	LENGTH
<b>FHC 5</b>	¾"	1" x 1"	500 mm
<b>FHC 6</b>	1"	1" x 1"	600 mm

- Flexible EPDM rubber hoses
- Maximum working pressure 10 bar



## FV - FOOT VALVES

MODEL	FITTING
<b>FV 0.5</b>	½"
<b>FV 0.75</b>	¾"
<b>FV 1</b>	1"
<b>FV 1.25</b>	1¼"
<b>FV 1.5</b>	1½"
<b>FV 2</b>	2"

- Brass foot valves, stainless steel suction filter



## CV - CHECK VALVES

MODEL	FITTINGS
<b>CV 0.5</b>	½"
<b>CV 0.75</b>	¾"
<b>CV 1</b>	1"
<b>CV 1.25</b>	1¼"
<b>CV 1.5</b>	1½"
<b>CV 2</b>	2"

- Brass check valves



## PRESSURE SWITCH

MODEL	FITTING	STANDARD SETTING (*)
<b>FSG 2</b>	¼" female	1.4 ÷ 2.8 bar

(\*) Adjustable



## PRESSURE GAUGE

MODEL	FITTING	DIAMETER	SCALE
<b>G 2</b>	¼" central	50 mm	0 ÷ 6 bar



## 3 - 5 BRASS CONNECTION

MODEL	FITTING
<b>BC/3 - 3 way</b>	1"
<b>BC/4 - 4 way</b>	1"
<b>BC/5 - 5 way</b>	1"

- **BC/3**: three-way brass fittings with 1" gas connections
- **BC/4**: four-way brass fittings with ½" gas and ¼" gas connections
- **BC/5**: five-way brass fittings with 1" gas and ¼" gas connections





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