50 Hz

TLC, FLC, EFLC, ECOCIRC Series

WET ROTOR CIRCULATORS FOR
HEATING, COOLING AND SANITARY SYSTEMS

Cod. 191007391 Rev.B Ed.12/2011

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CONTENTS

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TLC, TLCH, FLC(G), TLCB SERIES
PRODUCT RANGE CHART

TYPE	Version		Power supply		Pump coupling		Temperature of pumped liquid *						Ambient temperature	Protection class
	Single	Twin	Single-phase 230 V 50 Hz	Three-phase 400 V 50 Hz	Threaded	Flanged	-25°C ÷ +110°C	-15°C ÷ +120°C	-10°C ÷ +95°C	-10°C ÷ +110°C	-10°C ÷ +130°C	+15°C ÷ +90°C	Max 40°C	IP 44
RESIDENTIAL														
TLC 15-2.5	•		•		•					•			•	•
TLC 25-2.5L	•		•		•					•			•	•
TLC 32-2.5L	•		•		•					•			•	•
TLC 15-4	•		•		•					•			•	•
TLC 25-4	•		•		•					•			•	•
TLC 25-4L	•		•		•					•			•	•
TLC 32-4L	•		•		•					•			•	•
TLC 15-5	•		•		•					•			•	•
TLC 25-5	•		•		•					•			•	•
TLC 25-5L	•		•		•					•			•	•
TLC 32-5L	•		•		•					•			•	•
TLC 15-6	•		•		•					•			•	•
TLC 25-6	•		•		•					•			•	•
TLC 25-6L	•		•		•					•			•	•
TLC 32-6L	•		•		•					•			•	•
TLC 15-7	•		•		•					•			•	•
TLC 25-7L	•		•		•					•			•	•
TLC 32-7L	•		•		•					•			•	•
LIGHT COMMERCIAL / COMMERCIAL														
TLCH 25-7L	•		•		•					•			•	•
TLCH 32-7L	•		•		•					•			•	•
TLCH 25-8L	•		•		•					•			•	•
TLCH 32-8L	•		•		•					•			•	•
TLCH 25-10L	•		•		•					•			•	•
TLCH 32-10L	•		•		•					•			•	•
TLCH 25-12L	•		•		•					•			•	•
TLCH 32-12L	•		•		•					•			•	•
FLC (G) 40-5 (T)	•	•	•	•		•		•					•	•
FLC (G) 40-7 (T)	•	•	•	•		•		•					•	•
FLC (G) 40-10 (T)	•	•	•	•		•		•					•	•
FLC (G) 50-5 (T)	•	•	•	•		•		•					•	•
FLC (G) 50-8 (T)	•	•	•	•		•		•					•	•
FLC (G) 50-10 (T)	•	•	•	•		•		•					•	•
FLC 50-13 (T)	•		•	•		•		•					•	•
FLC 50-18 T	•			•		•		•					•	•
FLC (G) 65-7 (T)	•	•	•	•		•		•					•	•
FLC (G) 65-10 (T)	•	•	•	•		•		•					•	•
FLC (G) 65-12 (T)	•	•	•	•		•		•					•	•
FLC (G) 65-16 T	•	•		•		•		•					•	•
FLCG 80-4 (T)		•	•	•		•		•					•	•
FLC (G) 80-8 (T)	•	•	•	•		•		•					•	•
FLC (G) 80-10 (T)	•	•	•	•		•		•					•	•
FLC (G) 80-12 T	•	•		•		•		•					•	•
FLC (G) 80-15 T	•	•		•		•		•					•	•
SANITARY														
TLCB 15-1.5	•		•		•					•			•	•
TLCB 20-1.5M	•		•		•					•			•	•
TLCB 25-1.5	•		•		•					•			•	•
TLCB 15-3	•		•		•					•			•	•
TLCB 20-3M	•		•		•					•			•	•
TLCB 25-3	•		•		•					•			•	•
TLCB 15-4	•		•		•					•			•	•
TLCB 20-4M	•		•		•					•			•	•
TLCB 25-4	•		•		•					•			•	•
TLCB 25-4L	•		•		•					•			•	•
TLCB 15-6	•		•		•					•			•	•
TLCB 20-6M	•		•		•					•			•	•
TLCB 25-6L	•		•		•					•			•	•

* Non-freezing, non-condensing.

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TLCHB, TLCSOL, TLCK, EFLC(G), EA+, EV+, EB (V) SERIES PRODUCT RANGE CHART

TYPE	Version		Power supply		Pump coupling		Temperature of pumped liquid *						Ambient temperature	Protection class
	Single	Twin	Single-phase 230 V 50 Hz	Three-phase 400 V 50 Hz	Threaded	Flanged	-25°C ÷ +110°C	-15°C ÷ +120°C	-10°C ÷ +95°C	-10°C ÷ +110°C	-10°C ÷ +130°C	+15°C ÷ +90°C	Max 40°C	IP 44
LIGHT COMMERCIAL														
TLCHB 20-7L	•		•		•					•			•	•
TLCHB 25-7L	•		•		•					•			•	•
TLCHB 20-8L	•		•		•					•			•	•
TLCHB 25-8L	•		•		•					•			•	•
TLCHB 20-10L	•		•		•					•			•	•
TLCHB 25-10L	•		•		•					•			•	•
TLCHB 20-12L	•		•		•					•			•	•
TLCHB 25-12L	•		•		•					•			•	•
SOLAR														
TLCSOL 15-4	•		•		•						•		•	•
TLCSOL 25-4L	•		•		•						•		•	•
TLCSOL 15-6	•		•		•						•		•	•
TLCSOL 25-6L	•		•		•						•		•	•
COOLING														
TLCK 25-4L	•		•		•		•						•	•
TLCK 25-6L	•		•		•		•						•	•
COMMERCIAL ELECTRONIC														
EFLC (G) 40-9	•	•	•			•						•	•	•
EFLC (G) 40-11	•	•	•			•						•	•	•
EFLC (G) 50-12	•	•	•			•						•	•	•
EFLC (G) 65-12	•	•	•			•						•	•	•
EFLC (G) 80-7	•	•	•			•						•	•	•
HIGH EFFICIENCY DOMESTIC ELECTRONIC														
EA+ (EV+) 15-4/130			•						•				•	•
EA+ (EV+) 20-4/130			•						•				•	•
EA+ (EV+) 25-4/130			•						•				•	•
EA+ (EV+) 25-4/180			•						•				•	•
EA+ (EV+) 32-4/180			•						•				•	•
EA+ (EV+) 15-6/130			•						•				•	•
EA+ (EV+) 20-6/130			•						•				•	•
EA+ (EV+) 25-6/130			•						•				•	•
EA+ (EV+) 25-6/180			•						•				•	•
EA+ (EV+) 32-6/180			•						•				•	•
SANITARY ELECTRONIC														
EB (V) 15-1/65 (R) (U) (RU)			•						•				•	•
EB (V) 15-1/110 (R) (U) (RU)			•						•				•	•
EB 15-3/65			•						•				•	•
EB 15-3/110			•						•				•	•

* Non-freezing, non-condensing.

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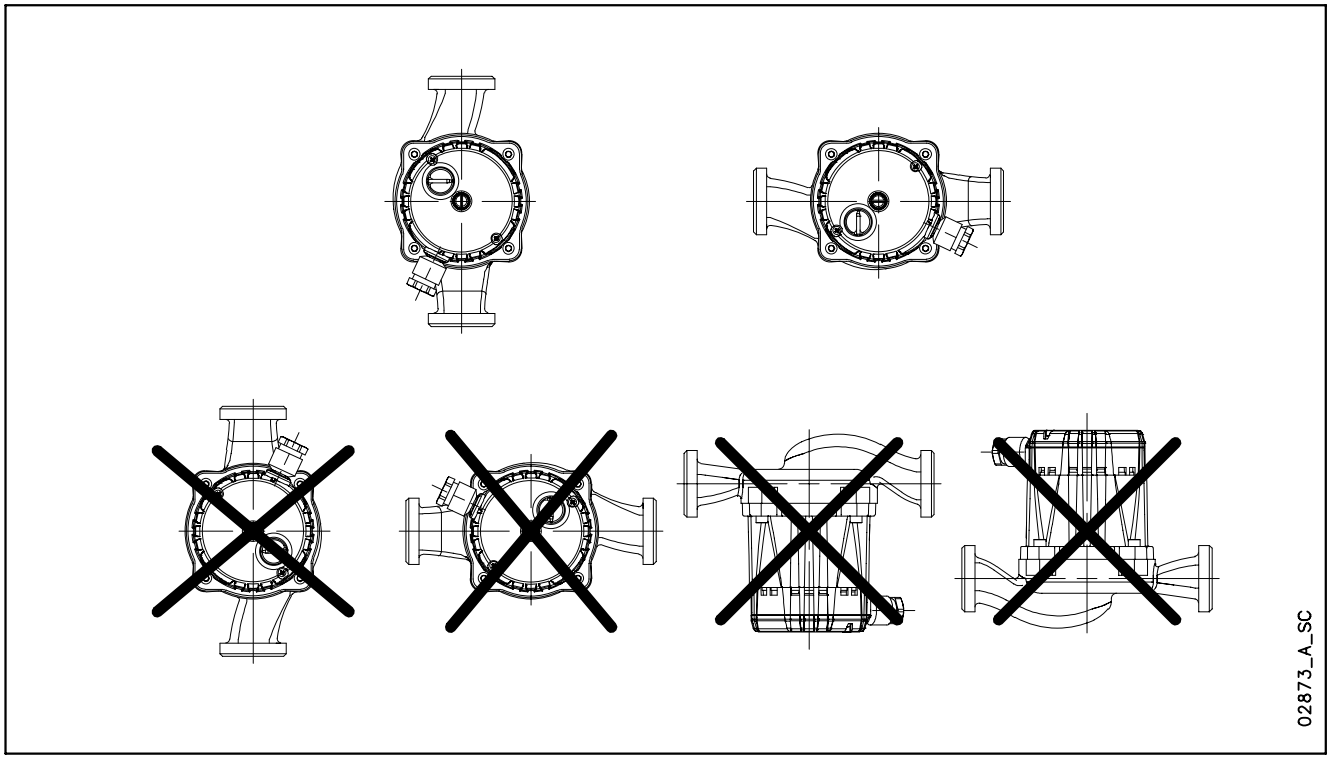
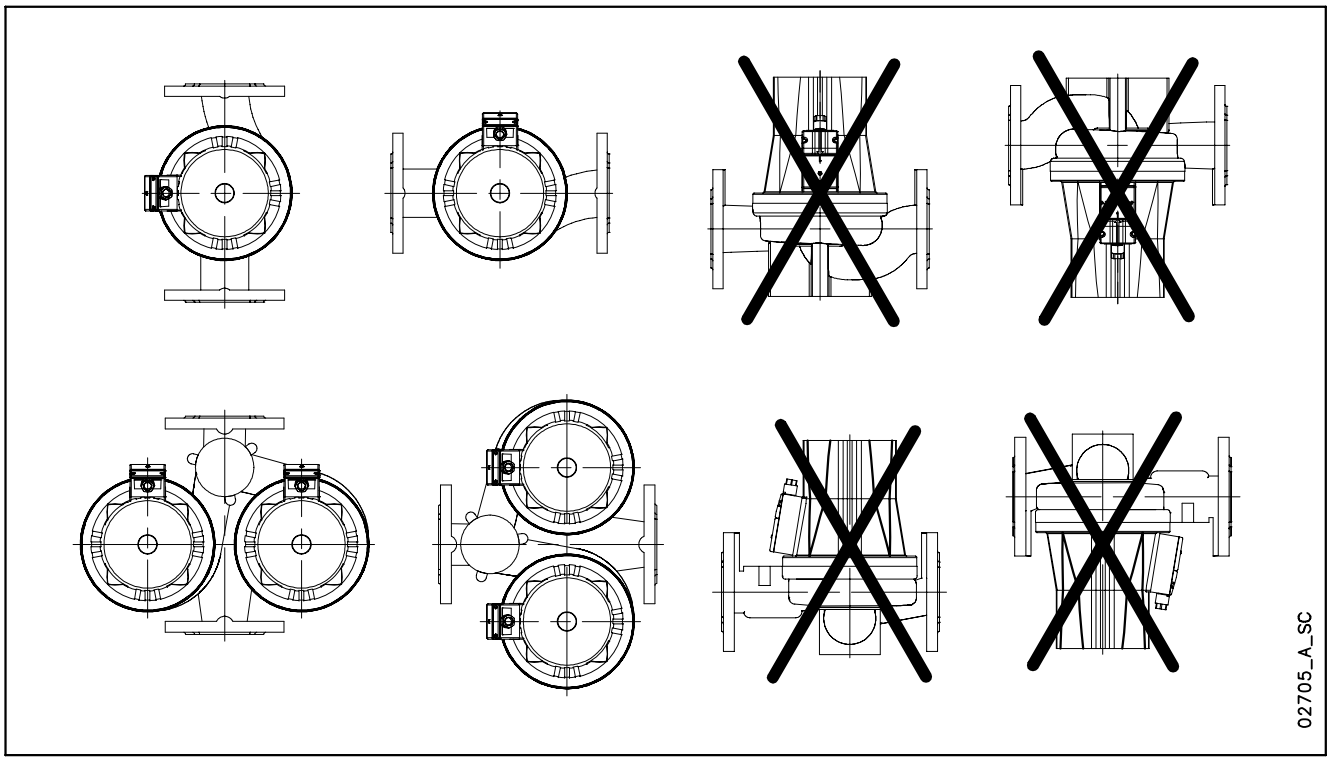
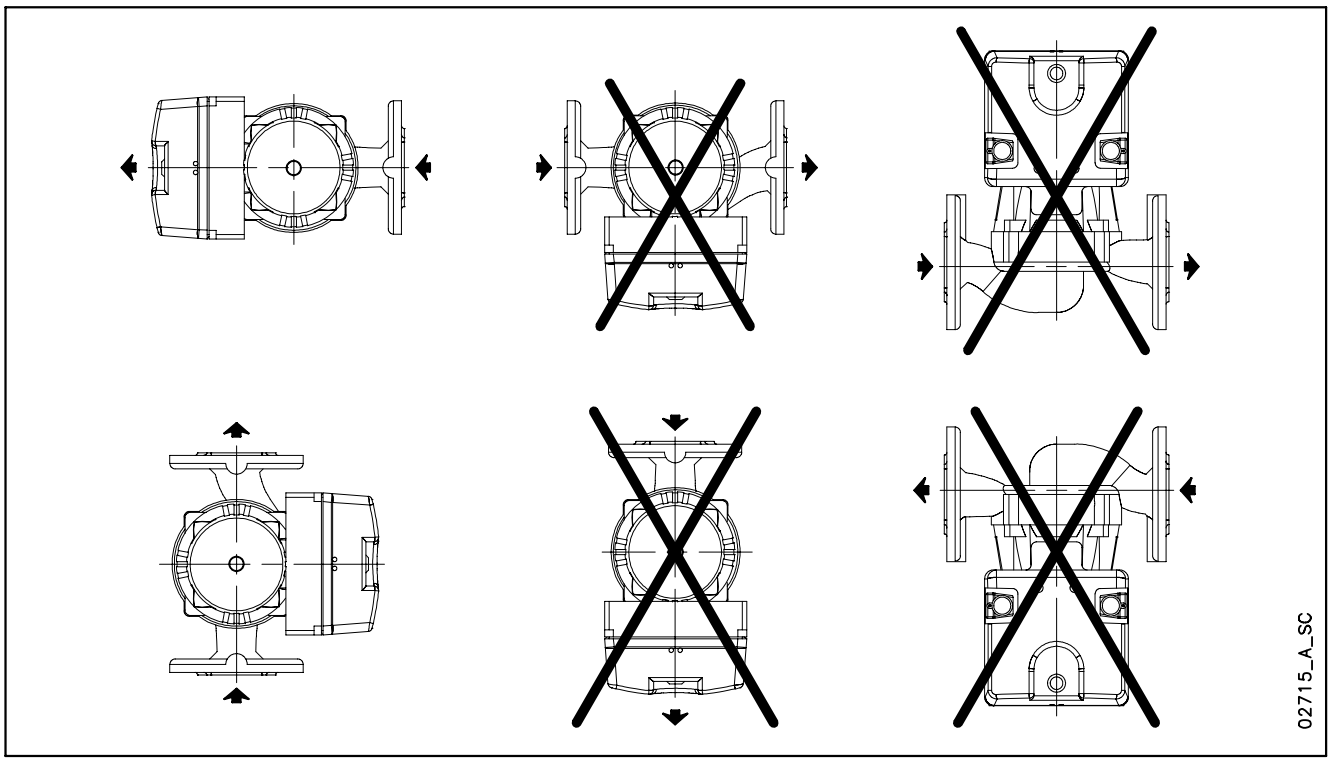
TLC SERIES
INSTALLATION POSITIONS



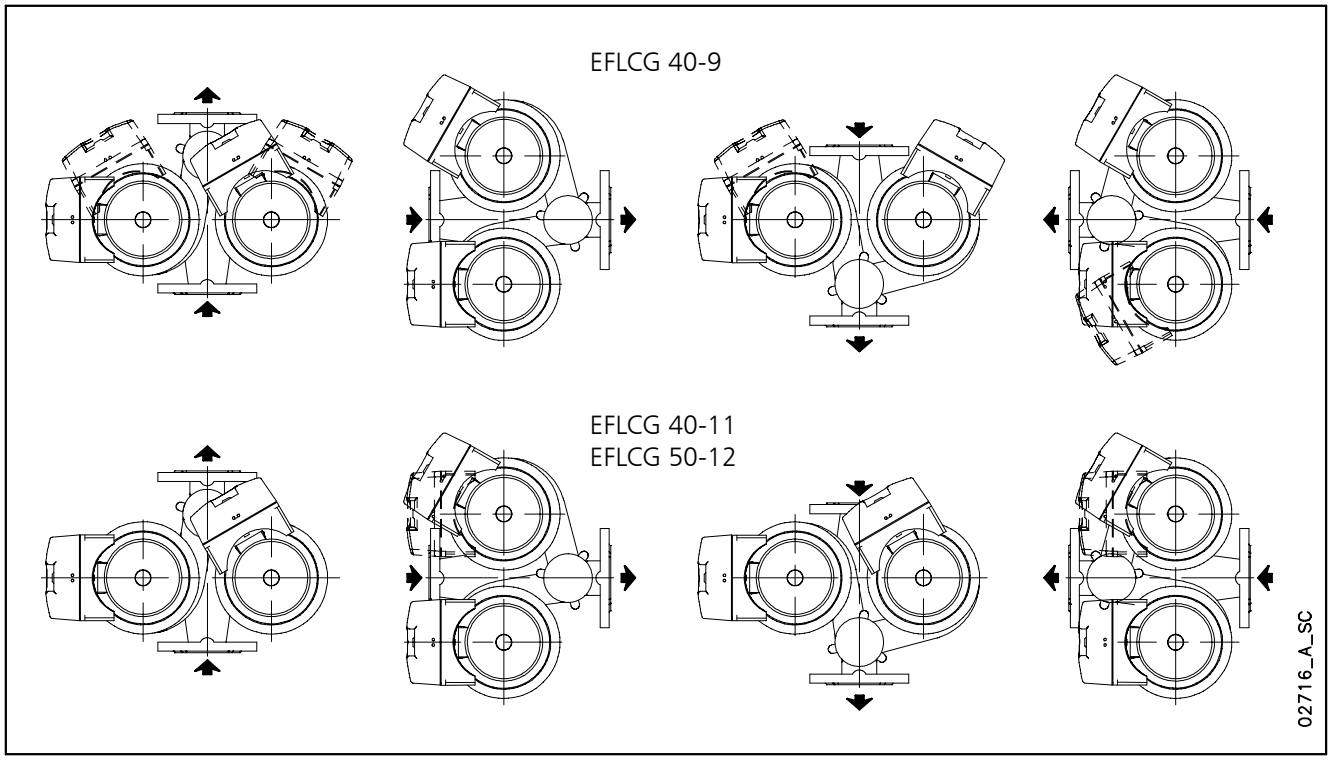
FLC, FLCG SERIES
INSTALLATION POSITIONS



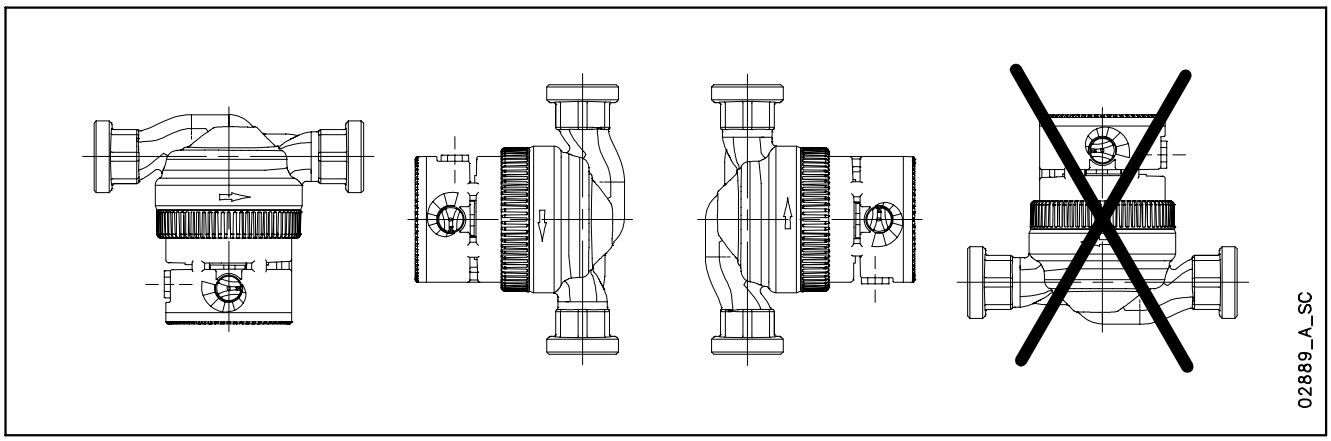
EFLC SERIES
INSTALLATION POSITIONS



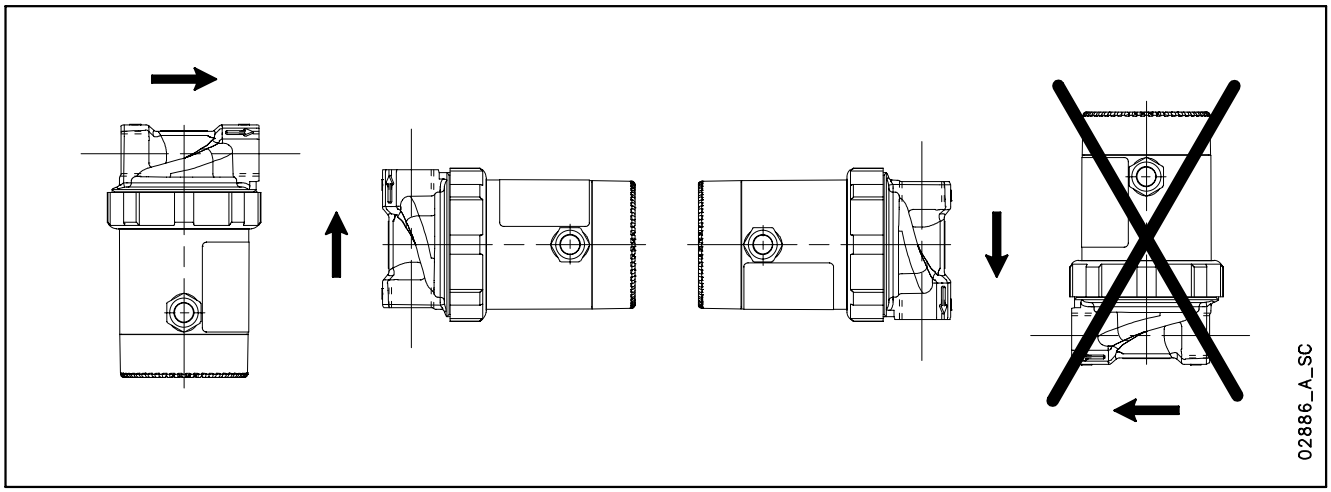
EFLCG SERIES
INSTALLATION POSITIONS



EA+, EV+ (ECOCIRC) SERIES
INSTALLATION POSITIONS

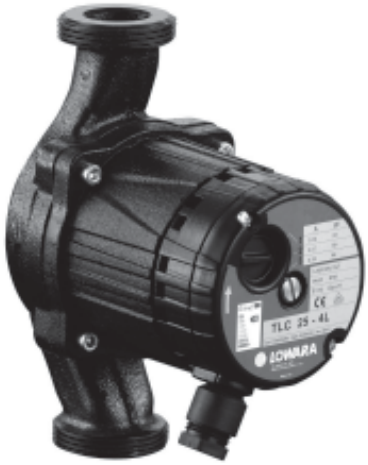


EB (V) (ECOCIRC) SERIES
INSTALLATION POSITIONS



Circulators for residential systems

TLC Series



MARKET SECTORS

RESIDENTIAL.

APPLICATIONS

- Water circulation in heating and air conditioning systems.
- Pumping of hot/cold, chemically and mechanically non-aggressive liquids.

SPECIFICATIONS

PUMP

- **Flow rate**: up to 4 m^3/h.
- **Head**: up to 7 m.
- **Temperature of pumped liquid**: -10°C ÷ +110°C.
  Non-freezing, non-condensing.
  Maximum 20% glycol and water mixture.
  For glycol quantities higher than 20%, hydraulic performances must be checked.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Impeller**: made of composite material.
- **Wear ring**: ceramic.

MOTOR

- Wet rotor type, with bearings lubricated by the pumped liquid. Axial and radial bearings made of ceramic.
- Single-phase 230 V 50 Hz power supply. Terminal box axially integrated in the motor.
- 2-pole, three-speed motor, with manual speed selection.
- According to EN standards 60335-1 and 2-51.
- **Insulation class**: H (180°C).
- **Protection class**: IP 44.

CONSTRUCTION CHARACTERISTICS

- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation onto piping, with 1", 1" ½ and 2" threaded connections.

ACCESSORIES

- Pipe unions.
- Insulation shell.

INSTALLATION

- Suitable for installation in horizontal or vertical piping, in any position provided that motor axis is horizontal.

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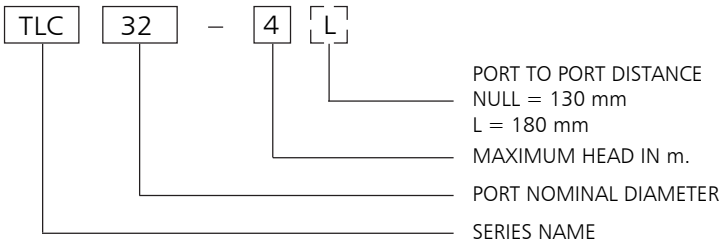
TLC SERIES
IDENTIFICATION CODE



EXAMPLE : TCL 32-4L

TCL series circulator, port nominal diameter = 32,
max head= 4 m, with port to port distance of 180 mm.

TABLE OF MATERIALS

PART	MATERIAL
Pump body	Cast iron cataphoretically coated
Impeller	Composite material
Shaft	Ceramics
Inner jacket	Stainless steel
Wear ring	Ceramics
Bearings	Ceramics
Gaskets	EPDM

tlc-2p50-en_a_tm

TLC SERIES
HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	0,2	0,3	0,5	0,6	0,7	0,8	0,9	1,1
						m^3/h 0	0,6	1,2	1,7	2,0	2,4	2,8	3,2	3,9
230V 50Hz	W	A	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
TLC 15-2.5	27	0,12	1,5	400	1	2,1	2,0	1,5	1,1	0,8				
TLC 25-2.5L	32	0,14			2	2,3	2,1	1,7	1,3	1,1				
TLC 32-2.5L	35	0,15			3	2,5	2,3	1,9	1,5	1,2	0,9			
TLC 15-4	33	0,14	1,5	400	1	3,5	2,7	1,8	1,2	0,8				
TLC 25-4 (L)	39	0,17			2	3,9	3,2	2,4	1,9	1,6	1,1			
TLC 32-4L	44	0,19			3	4,2	3,5	2,8	2,2	1,9	1,5	0,9		
TLC 15-5	43	0,19	2,0	400	1	3,9	2,9	2,0	1,3	0,8				
TLC 25-5 (L)	63	0,28			2	4,8	4,3	3,7	3,0	2,5	1,8	0,9		
TLC 32-5L	77	0,34			3	5,2	4,9	4,4	3,8	3,5	3,0	2,3	1,8	
TLC 15-6	43	0,19	2,0	400	1	3,4	2,3	1,5	0,9					
TLC 25-6 (L)	65	0,28			2	5,2	4,1	3,0	2,1	1,7	1,1			
TLC 32-6L	80	0,34			3	6,2	5,6	4,7	4,0	3,6	3,0	2,4	1,8	
TLC 15-7	54	0,24	2,0	400	1	5,4	3,6	2,5	1,7	1,4	0,9	0,4		
TLC 25-7L	76	0,34			2	6,6	5,5	4,0	2,9	2,3	1,6	1,0	0,4	
TLC 32-7L	89	0,39			3	7,1	6,6	5,9	5,2	4,7	3,9	2,9	2,0	0,4

Performances according to standards EN 1151-1

tlc-2p50-en_b_th

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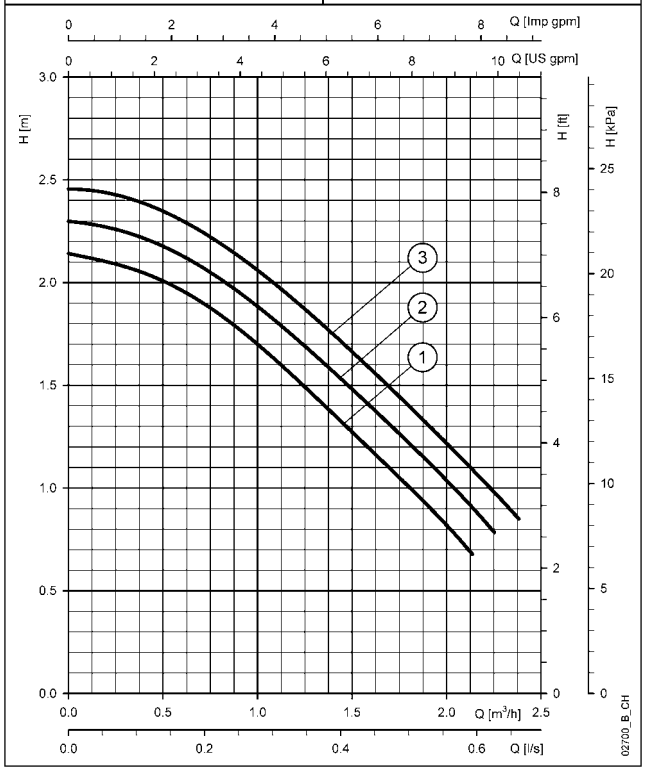
TLC SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

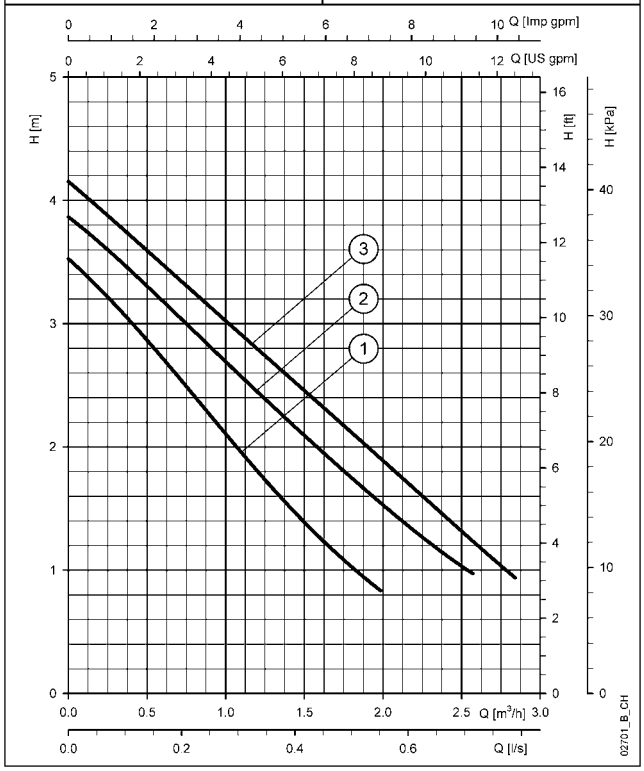
TLC 15 - 2.5
TLC 25 - 2.5L
TLC 32 - 2.5L

EN 1151-1



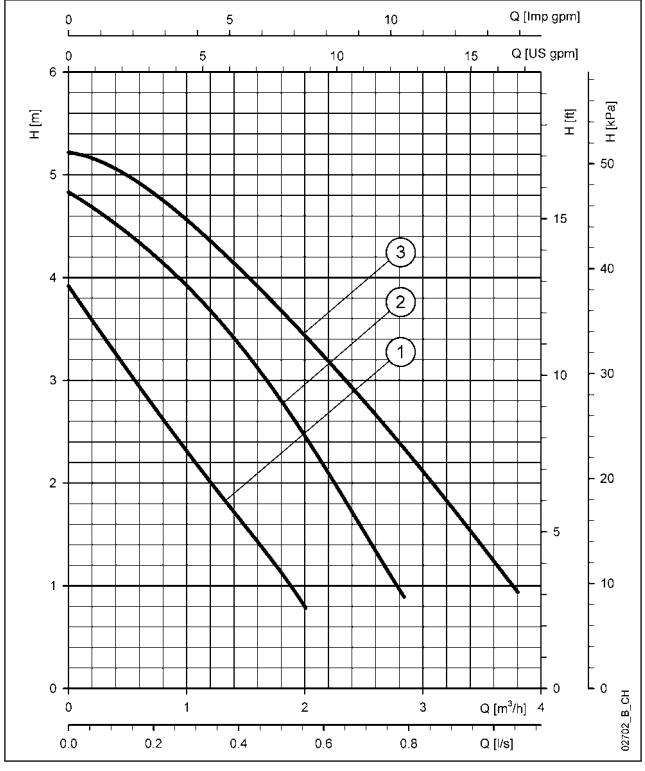
TLC 15 - 4
TLC 25 - 4
TLC 25 - 4L
TLC 32 - 4L

EN 1151-1



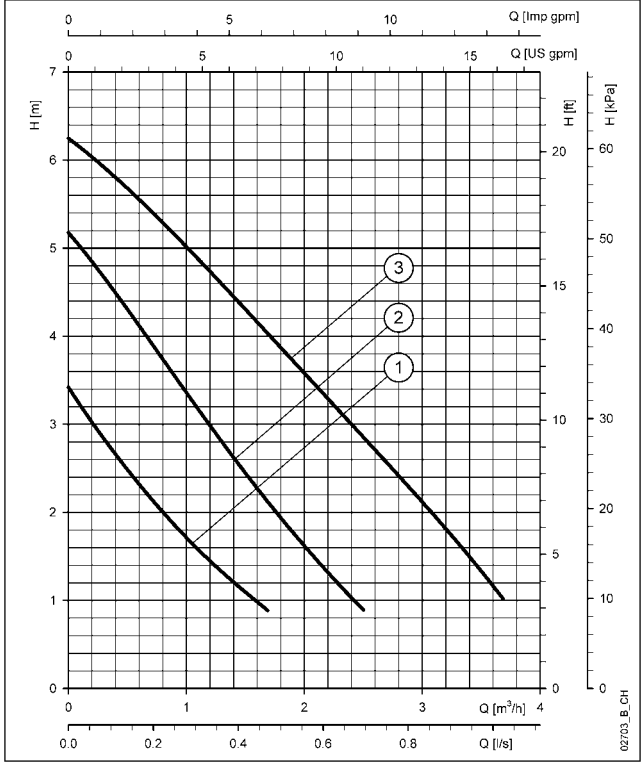
TLC 15 - 5
TLC 25 - 5
TLC 25 - 5L
TLC 32 - 5L

EN 1151-1



TLC 15 - 6
TLC 25 - 6
TLC 25 - 6L
TLC 32 - 6L

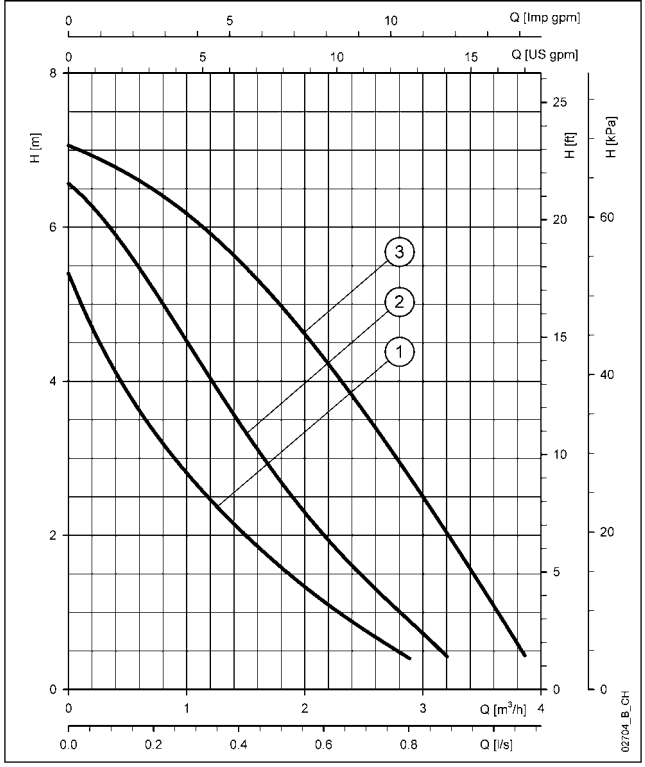
EN 1151-1



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

TLC SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

TLC 15 - 7 TLC 25 - 7L TLC 32 - 7L	EN 1151-1



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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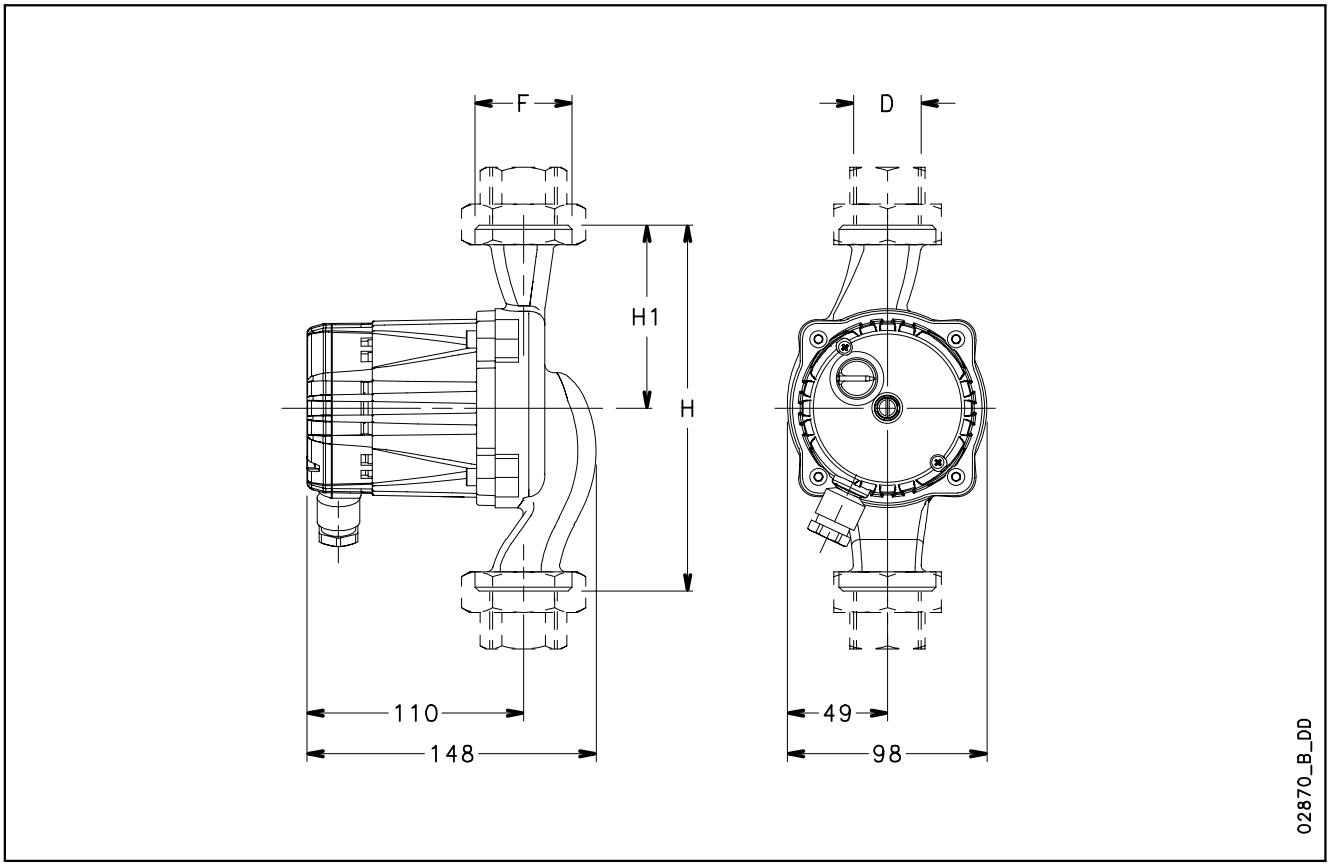
TLC SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)					WEIGHT
	H	H1	D	F	DN	kg
TLC 15-2.5	130	65	1/2"	G 1"	15	2,6
TLC 25-2.5L	180	90	1"	G 1"½	25	2,7
TLC 32-2.5L	180	90	1"¼	G 2"	32	2,8
TLC 15-4	130	65	1/2"	G 1"	15	2,6
TLC 25-4	130	65	1"	G 1"½	25	2,7
TLC 25-4L	180	90	1"	G 1"½	25	2,7
TLC 32-4L	180	90	1"¼	G 2"	32	2,8
TLC 15-5	130	65	1/2"	G1"	15	2,6
TLC 25-5	130	65	1"	G 1"½	25	2,7
TLC 25-5L	180	90	1"	G 1"½	25	2,7
TLC 32-5L	180	90	1"¼	G 2"	32	2,8
TLC 15-6	130	65	1/2"	G 1"	15	2,6
TLC 25-6	130	65	1"	G 1"½	25	2,7
TLC 25-6L	180	90	1"	G 1"½	25	2,8
TLC 32-6L	180	90	1"¼	G 2"	32	2,8
TLC 15-7	130	65	1/2"	G 1"	15	2,6
TLC 25-7L	180	90	1"	G 1"½	25	2,8
TLC 32-7L	180	90	1"¼	G 2"	32	2,8

tlc-2p50-en_c_td

Circulators for residential systems

TLCH Series

MARKET SECTORS
LIGHT COMMERCIAL.

APPLICATIONS
- Circulation of water in heating and air conditioning high flow/high head systems.
- Pumping of hot/cold, chemically and mechanically non-aggressive liquids.

SPECIFICATIONS

PUMP
- **Flow rate**: up to 12 m^3/h.
- **Head**: up to 12 m.
- **Temperature of pumped liquid**: -10°C ÷ +110°C.
  Non-freezing, non-condensing.
  Maximum of 20% glycol and water mixture.
  For glycol quantities higher than 20%, hydraulic performances must be checked.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Impeller**: made of composite material.
- **Wear ring**: ceramic.

MOTOR
- Wet rotor type, with bearings lubricated by the pumped liquid. Axial and radial bearings made of ceramic.
- Single-phase 230 V 50 Hz power supply. Terminal box axially integrated in the motor.
- 2-pole, three-speed motor, with manual speed selection.
- According to EN standards 60335-1 and 2-51.
- **Insulation class**: H (180°C).
- **Protection class**: IP 44.

CONSTRUCTION CHARACTERISTICS
- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation onto piping, with 1" ½ and 2" threaded connections.

ACCESSORIES
- Pipe unions.
- Insulation shell.

INSTALLATION
- Suitable for installation in horizontal or vertical piping, in any position, provided that motor axis is horizontal.

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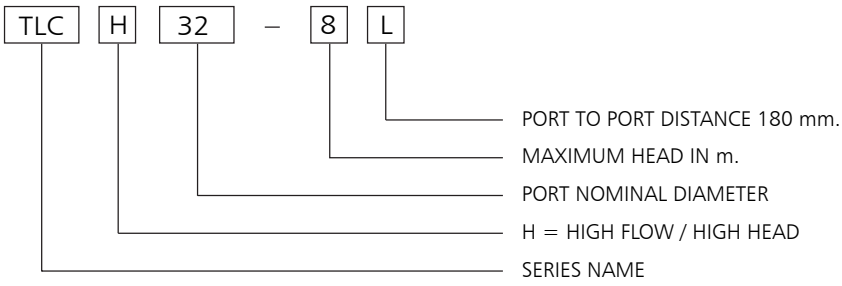
TLCH SERIES
IDENTIFICATION CODE



EXAMPLE : TLCH 32-8L

TLC series circulator, high flow/head H version, port nominal diameter = 32,
max head= 8 m, with port to port distance of 180 mm.

TABLE OF MATERIALS

PART	MATERIAL
Pump body	Cast iron cataphoretically coated
Impeller	Composite material
Shaft	Ceramics
Inner jacket	Stainless steel
Wear ring	Ceramics
Bearings	Ceramics
Gaskets	EPDM

tlch-2p50-en_a_tm

TLCH SERIES
HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	0,3	0,7	1,0	1,3	1,7	2,0	2,3	2,7
						m^3/h 0	1,2	2,4	3,6	4,8	6,0	7,2	8,4	9,6
230V 50Hz	W	A	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
TLCH 25-7L TLCH 32-7L	220	1,03	8,0	400	1	5,8	5,1	4,2	3,1	1,9	1,1			
	228	1,04			2	6,7	6,2	5,4	4,4	3,3	2,2	1,2		
	260	1,13			3	7,1	6,7	6,1	5,2	4,2	3,2	2,3	1,4	
TLCH 25-8L TLCH 32-8L	260	1,23	8,0	400	1	6,6	5,9	4,7	3,1	1,8	0,8			
	270	1,24			2	7,5	7,0	6,2	5,1	3,9	2,7	1,7		
	286	1,25			3	8,0	7,6	6,9	5,9	4,8	3,7	2,7	1,7	
TLCH 25-10L TLCH 32-10L	283	1,35	8,0	400	1	8,3	7,0	5,0	2,7	1,1				
	343	1,44			2	9,4	8,7	7,7	6,3	4,6	3,1	1,7		
	357	1,56			3	10,0	9,5	8,8	7,7	6,5	5,1	3,8	2,6	1,5
TLCH 25-12L TLCH 32-12L	285	1,36	8,0	400	1	7,8	6,5	4,5	2,2	0,7				
	372	1,69			2	10,4	9,6	8,5	6,9	5,2	3,4	1,9		
	400	1,73			3	11,9	11,2	10,3	9,2	7,7	6,2	4,7	3,3	2,0

Performances according to standards ISO 9906 - Annex A.

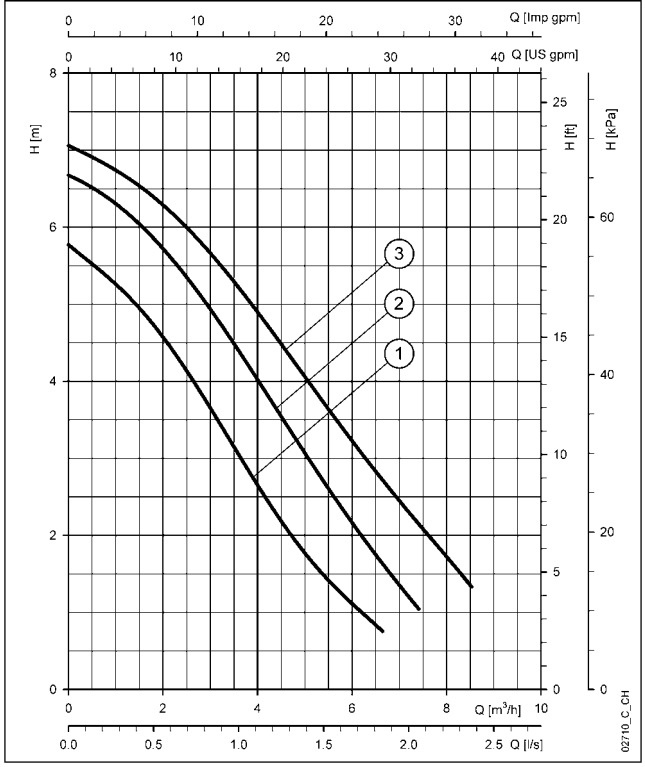
tlch-2p50-en_c_th

LOWARA
a xylem brand

TLCH SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

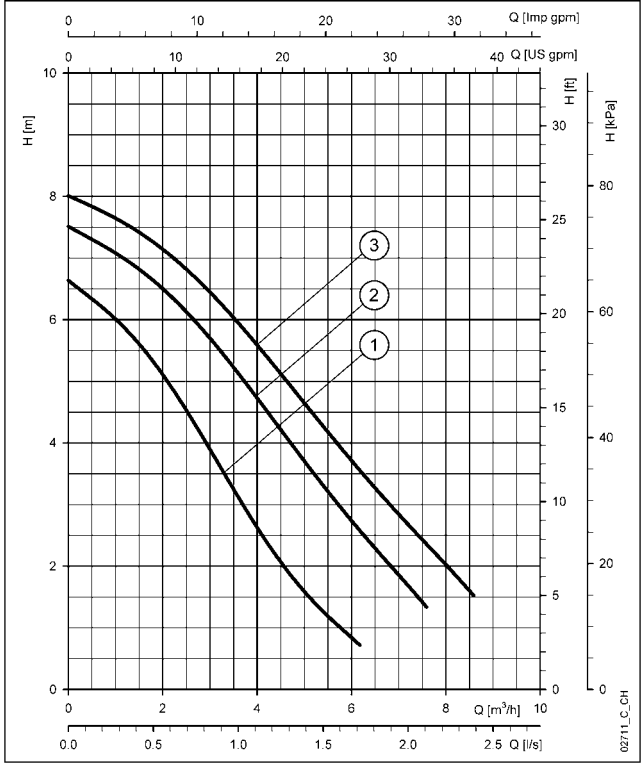
TLCH 25 - 7L
TLCH 32 - 7L

ISO 9906 - Annex A



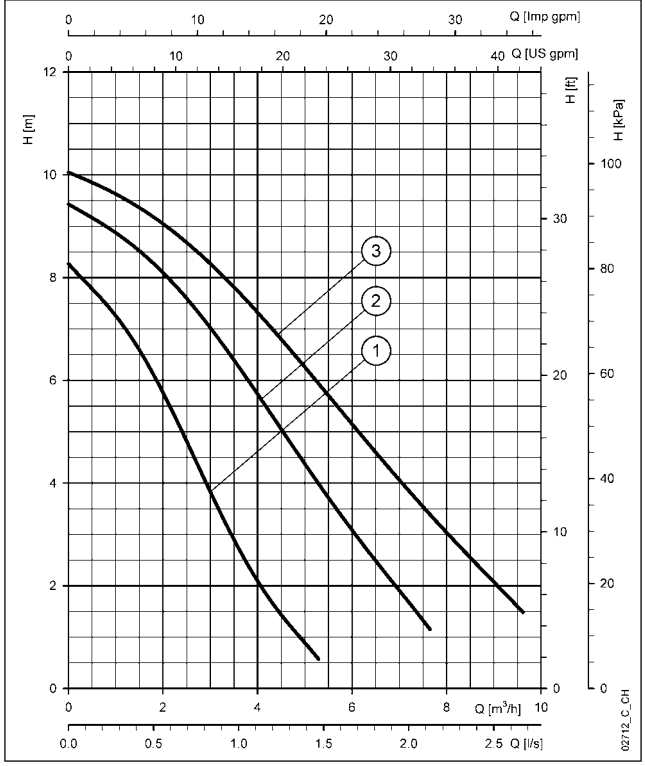
TLCH 25 - 8L
TLCH 32 - 8L

ISO 9906 - Annex A



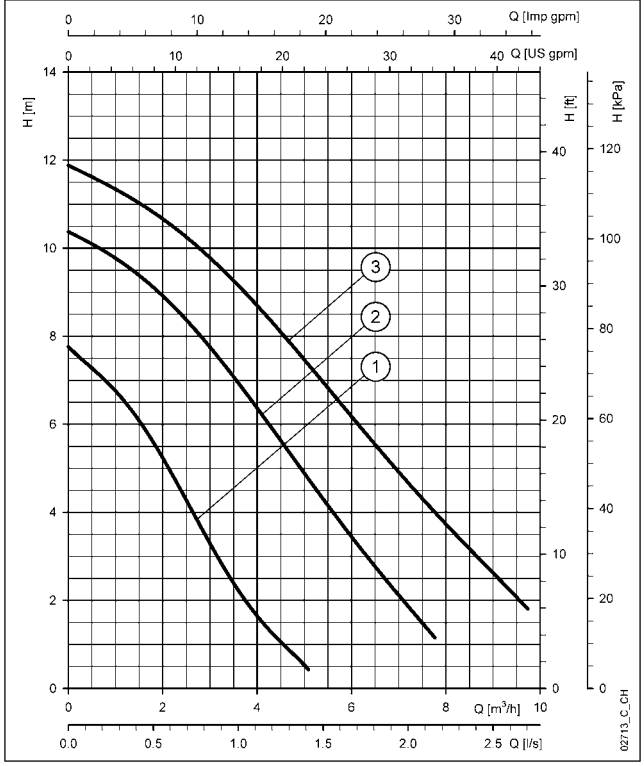
TLCH 25 - 10L
TLCH 32 - 10L

ISO 9906 - Annex A



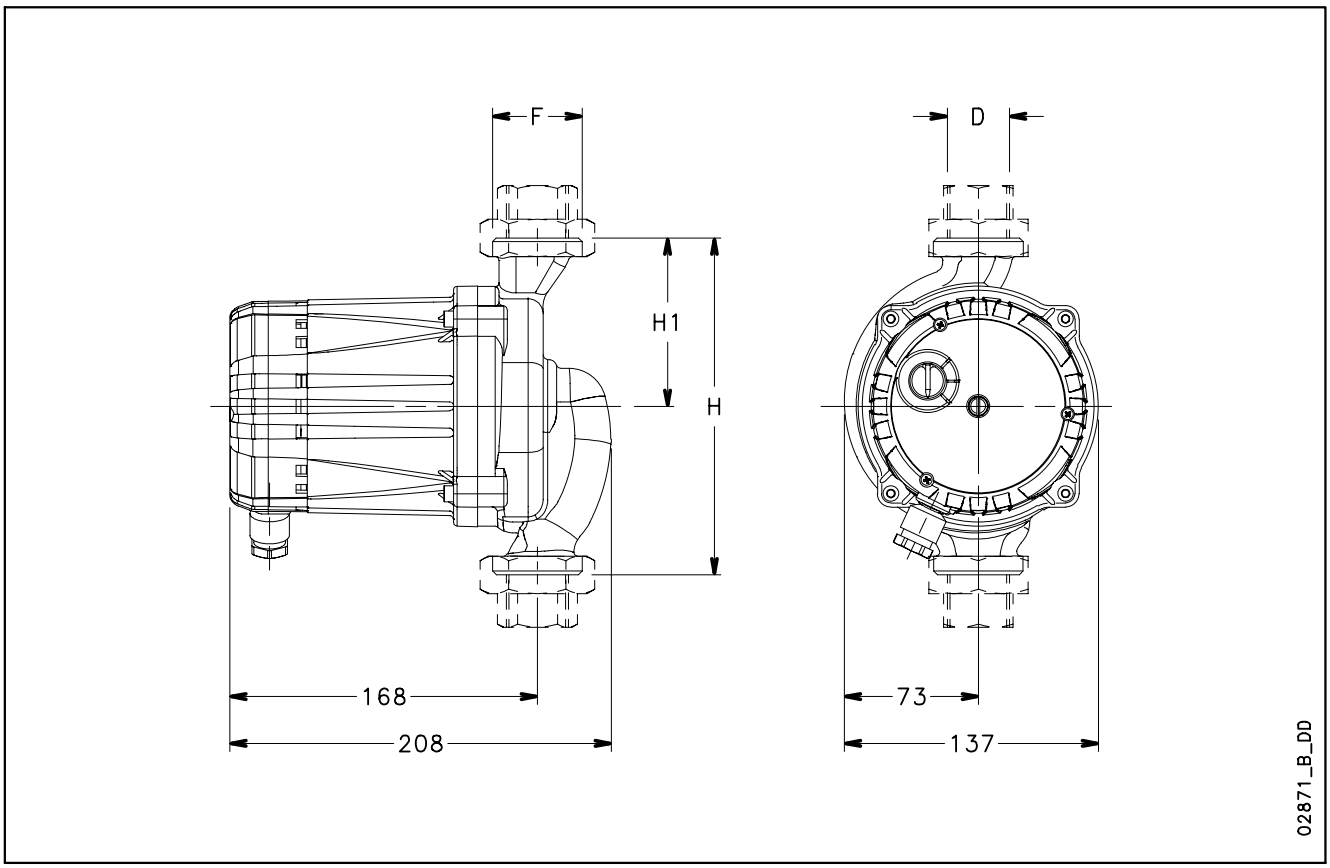
TLCH 25 - 12L
TLCH 32 - 12L

ISO 9906 - Annex A



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

TLCH SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)					WEIGHT
	H	H1	D	F	DN	kg
TLCH 25-7L	180	90	1"	G 1"½	25	6,5
TLCH 32-7L	180	90	1"¼	G 2"	32	6,6
TLCH 25-8L	180	90	1"	G 1"½	25	6,5
TLCH 32-8L	180	90	1"¼	G 2"	32	6,6
TLCH 25-10L	180	90	1"	G 1"½	25	6,5
TLCH 32-10L	180	90	1"¼	G 2"	32	6,6
TLCH 25-12L	180	90	1"	G 1"½	25	6,5
TLCH 32-12L	180	90	1"¼	G 2"	32	6,6

tlch-2p50-en_c_td

Sanitary Circulators

MARKET SECTORS
RESIDENTIAL.

APPLICATIONS
- Circulation of sanitary hot water.

TLCB Series

SPECIFICATIONS

PUMP
- **Flow rate**: up to 5 m^3/h.
- **Head**: up to 6 m.
- **Temperature of pumped liquid**: -10°C ÷ +110°C. Non-freezing, non-condensing.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Impeller**: made of composite material.
- **Wear ring**: ceramic.

MOTOR
- Wet rotor type, with bearings lubricated by the pumped liquid. Axial and radial bearings made of ceramic.
- Single-phase 230 V 50 Hz power supply. Terminal box axially integrated in the motor.
- 2-pole, three-speed motor, with manual speed selection.
- According to EN standards 60335-1 and 2-51.
- **Insulation class**: H (180°C).
- **Protection class**: IP 44.

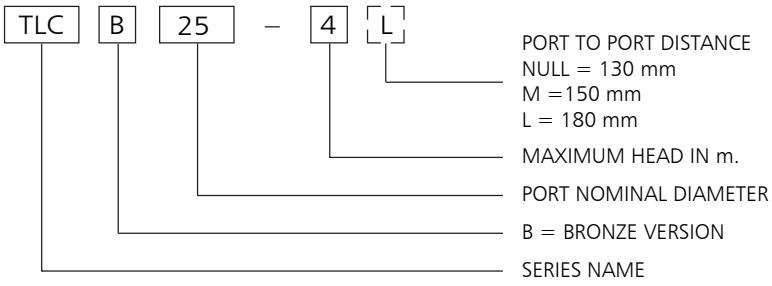
CONSTRUCTION CHARACTERISTICS
- Electric circulator pumps for sanitary hot water circulation, at a maximum temperature of 65°C , maximum hardness of 25° F and maximum viscosity of 10 mm^2/S.
- Bronze pump body designed for direct installation onto copper piping, with 1", 1" ¼ and 1" ½ threaded connections.

ACCESSORIES
- Pipe unions.
- Insulation shell.

INSTALLATION
- Suitable for installation in horizontal or vertical piping, in any position provided that motor axis is horizontal.

LOWARA
a xylem brand

TLCB SERIES
IDENTIFICATION CODE



EXAMPLE : TLCB 25-4L

TLC series circulator, bronze B version, port nominal diameter = 25,
max head= 4 m, with port to port distance of 180 mm.

TABLE OF MATERIALS

PART	MATERIAL
Pump body	Bronze
Impeller	Composite material
Shaft	Ceramics
Inner jacket	Stainless steel
Wear ring	Ceramics
Bearings	Ceramics
Gaskets	EPDM

tlcb-2p50-en_a_tm

TLCB SERIES
HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	0,2	0,3	0,4	0,5	0,7	0,8	1,0	1,2
						m^3/h 0	0,6	1,2	1,5	1,8	2,4	3,0	3,6	4,2
230V 50Hz	W	A	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
TLCB 15-1.5	28	0,16	2,0	400	1	1,0	0,8	0,4	0,2					
TLCB 20-1.5M	43	0,24			2	1,2	1,0	0,6	0,4					
TLCB 25-1.5	58	0,28			3	1,4	1,2	0,8	0,6	0,4				
TLCB 15-3	33	0,17	2,0	400	1	1,3	0,6	0,2						
TLCB 20-3M	48	0,25			2	2,5	1,7	1,0	0,8	0,5				
TLCB 25-3	63	0,30			3	3,0	2,7	2,2	2,0	1,7	1,1			
TLCB 15-4	40	0,19	2,0	400	1	3,0	2,6	2,1	1,9	1,6	1,0			
TLCB 20-4M	59	0,28			2	3,5	3,3	2,9	2,7	2,4	1,8	1,3		
TLCB 25-4 (L)	70	0,33			3	4,0	3,8	3,5	3,3	3,0	2,5	2,0	1,3	
TLCB 15-6	56	0,27	3,0	400	1	3,1	1,9	1,2	0,9	0,6				
TLCB 20-6M	83	0,37			2	4,7	3,6	2,7	2,3	1,9	1,2	0,7		
TLCB 25-6L	100	0,44			3	5,6	5,0	4,4	4,0	3,7	3,1	2,4	1,8	1,2

Performances according to standards EN 1151-1

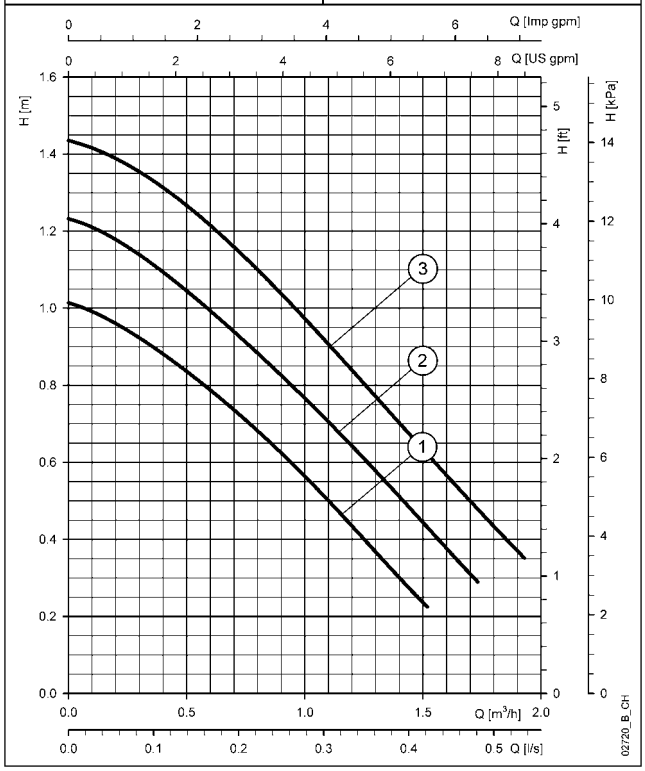
tlcb-2p50-en_b_th

LOWARA
a xylem brand

TLCB SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

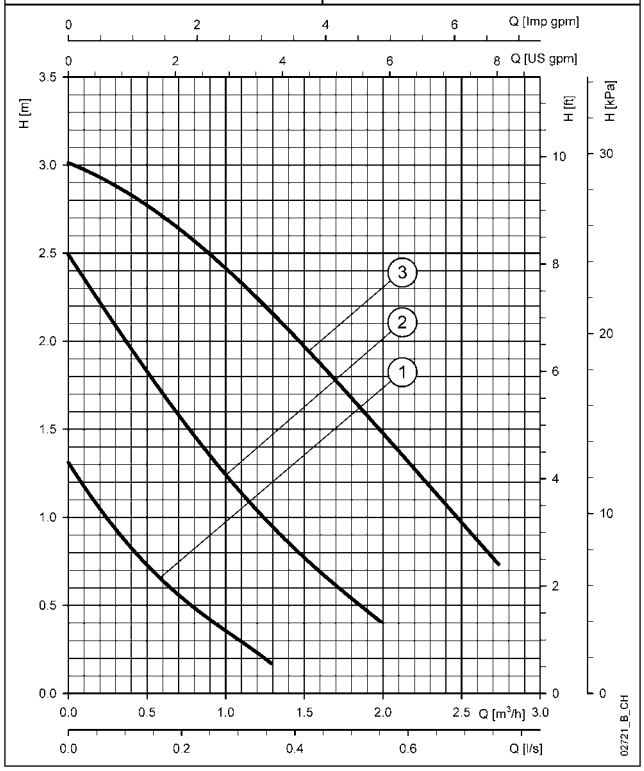
TLCB 15 - 1.5
TLCB 20 - 1.5M
TLCB 25 - 1.5

EN 1151-1



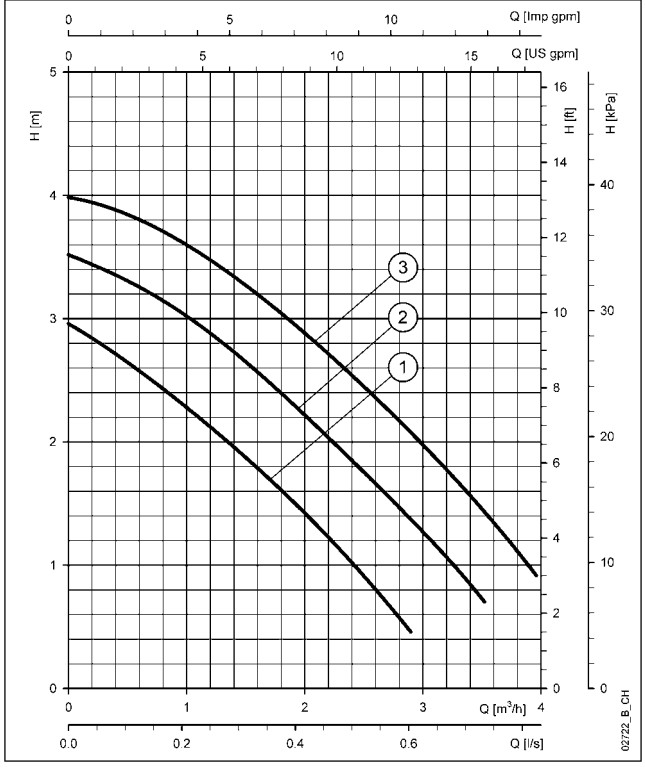
TLCB 15 - 3
TLCB 20 - 3M
TLCB 25 - 3

EN 1151-1



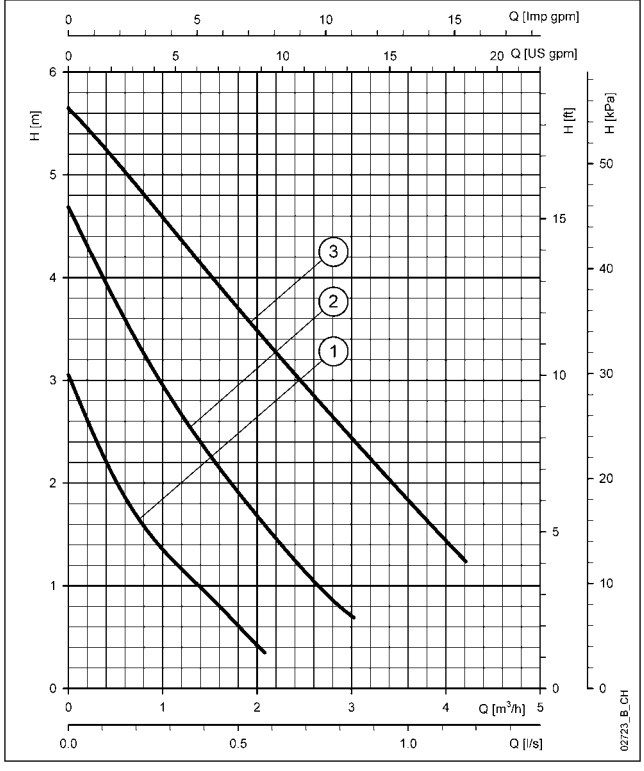
TLCB 15 - 4
TLCB 20 - 4M
TLCB 25 - 4
TLCB 25 - 4L

EN 1151-1



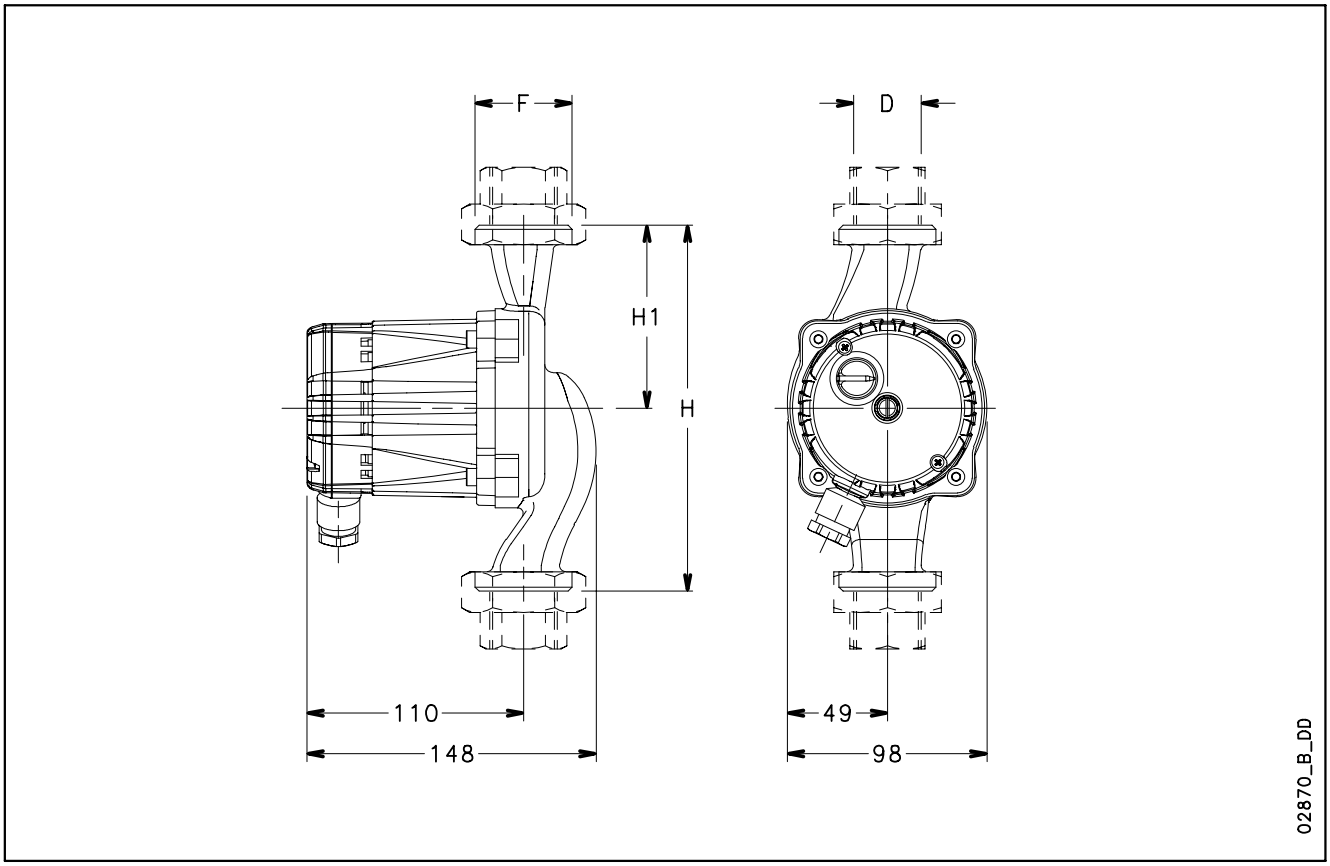
TLCB 15 - 6
TLCB 20 - 6M
TLCB 25 - 6L

EN 1151-1



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

TLCB SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)					WEIGHT
	H	H1	D	F	DN	kg
TLCB 15-1.5	130	65	1/2"	G 1"	15	2,9
TLCB 20-1.5M	150	75	3/4"	G 1"¼	20	3
TLCB 25-1.5	130	65	1"	G 1"½	25	3
TLCB 15-3	130	65	1/2"	G 1"	15	2,9
TLCB 20-3M	150	75	3/4"	G 1"¼	20	3
TLCB 25-3	130	65	1"	G 1"½	25	3
TLCB 15-4	130	65	1/2"	G 1"	15	2,9
TLCB 20-4M	150	75	3/4"	G 1"¼	20	3
TLCB 25-4	130	65	1"	G 1"½	25	3
TLCB 25-4L	180	90	1"	G 1"½	25	3,1
TLCB 15-6	130	65	1/2"	G 1"	15	2,9
TLCB 20-6M	150	75	R¾	G 1"¼	20	3
TLCB 25-6L	180	90	R 1	G 1"½	25	3,1

tlcb-2p50-en_c_td

Sanitary Circulators

MARKET SECTORS
SANITARY LIGHT COMMERCIAL.

APPLICATIONS
- Circulation of sanitary hot water in high flow/high head installations.

TLCHB Series

SPECIFICATIONS

PUMP
- **Flow rate**: up to 12 m^3/h.
- **Head**: up to 12 m.
- **Temperature of pumped liquid**: -10°C ÷ +110°C. Non-freezing, non-condensing.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Impeller**: made of composite material.
- **Wear ring**: ceramic.

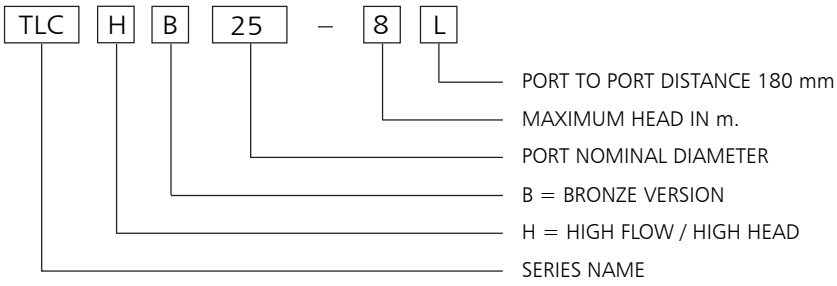
MOTOR
- Wet rotor type, with bearings lubricated by the pumped liquid. Axial and radial bearings made of ceramic.
- Single-phase 230 V 50 Hz power supply. Terminal box axially integrated in the motor.
- 2-pole, three-speed motor, with manual speed selection.
- According to EN standards 60335-1 and 2-51.
- **Insulation class**: H (180°C).
- **Protection class**: IP 44.

CONSTRUCTION CHARACTERISTICS
- Electric circulator pumps for sanitary hot water circulation, at a maximum temperature of 65°C , maximum hardness of 25° F.
- Bronze pump body designed for direct installation onto copper piping, with 1" ¼ and 1" ½ threaded connections.

ACCESSORIES
- Pipe unions.
- Insulation shell.

INSTALLATION
- Suitable for installation in horizontal or vertical piping, in any position provided that motor axis is horizontal.

TLCHB SERIES
IDENTIFICATION CODE



EXAMPLE : TLCHB 25-8L

TLC series circulator, high flow/head H version, bronze B version, port nominal diameter = 25, max head= 8 m, with port to port distance of 180 mm.

TABLE OF MATERIALS

PART	MATERIAL
Pump body	Bronze
Impeller	Composite material
Shaft	Ceramics
Inner jacket	Stainless steel
Wear ring	Ceramics
Bearings	Ceramics
Gaskets	EPDM

tlchb-2p50-en_a_tm

TLCHB SERIES
HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	0,3	0,7	1,0	1,3	1,7	2,0	2,3	2,7
						m^3/h 0	1,2	2,4	3,6	4,8	6,0	7,2	8,4	9,6
230V 50Hz	W	A	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
TLCHB 20-7L TLCHB 25-7L	220	1,03	8,0	400	1	5,8	5,1	4,2	3,1	1,9	1,1			
	228	1,04			2	6,7	6,2	5,4	4,4	3,3	2,2	1,2		
	260	1,13			3	7,1	6,7	6,1	5,2	4,2	3,2	2,3	1,4	
TLCHB 20-8L TLCHB 25-8L	260	1,23	8,0	400	1	6,6	5,9	4,7	3,1	1,8	0,8			
	270	1,24			2	7,5	7,0	6,2	5,1	3,9	2,7	1,7		
	286	1,25			3	8,0	7,6	6,9	5,9	4,8	3,7	2,7	1,7	
TLCHB 20-10L TLCHB 25-10L	283	1,35	8,0	400	1	8,3	7,0	5,0	2,7	1,1				
	343	1,44			2	9,4	8,7	7,7	6,3	4,6	3,1	1,7		
	357	1,56			3	10,0	9,5	8,8	7,7	6,5	5,1	3,8	2,6	1,5
TLCHB 20-12L TLCHB 25-12L	285	1,36	8,0	400	1	7,8	6,5	4,5	2,2	0,7				
	372	1,69			2	10,4	9,6	8,5	6,9	5,2	3,4	1,9		
	400	1,73			3	11,9	11,2	10,3	9,2	7,7	6,2	4,7	3,3	2,0

Performances according to standards ISO 9906 - Annex A.

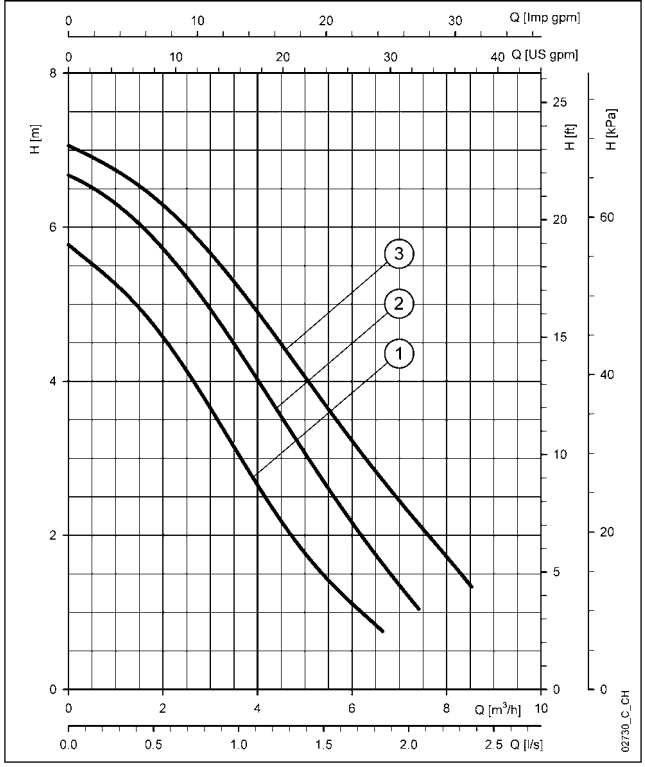
tlchb-2p50-en_c_th

LOWARA
a xylem brand

TLCHB SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

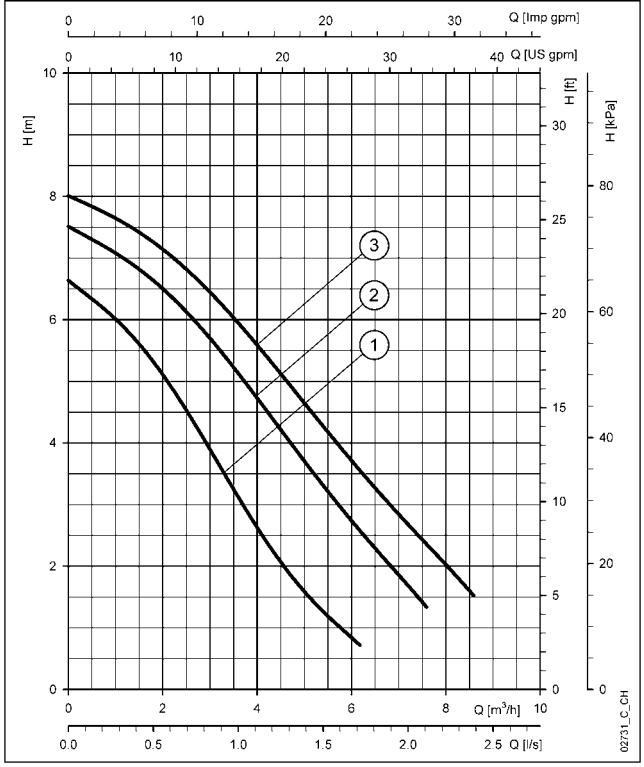
TLCHB 20 - 7L
TLCHB 25 - 7L

ISO 9906 - Annex A



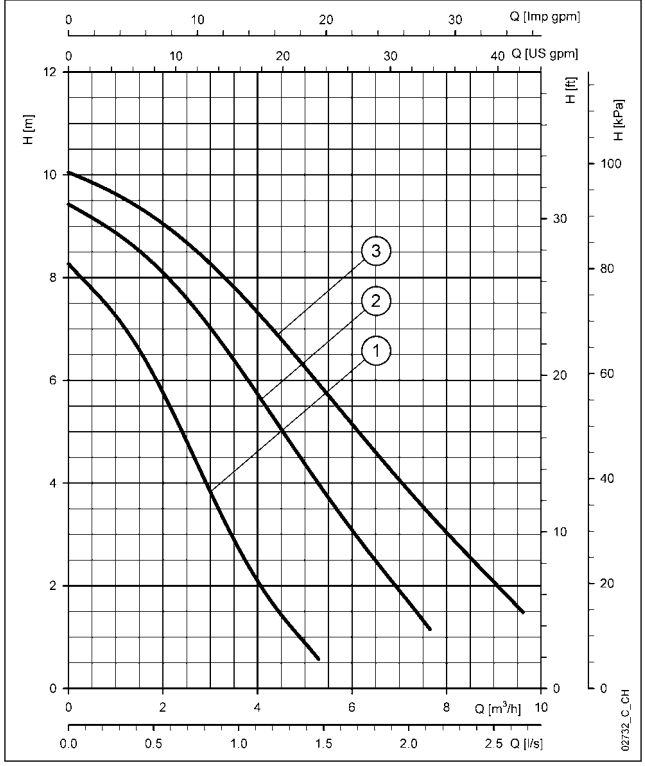
TLCHB 20 - 8L
TLCHB 25 - 8L

ISO 9906 - Annex A



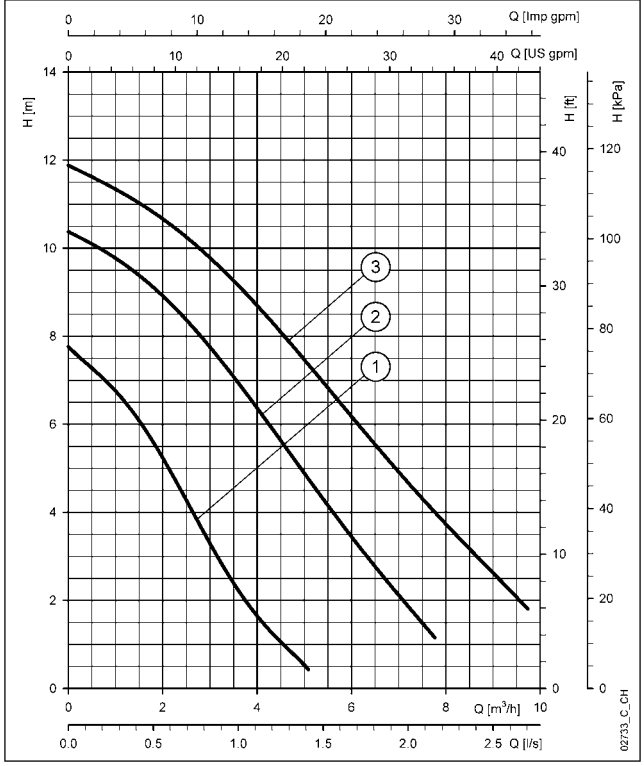
TLCHB 20 - 10L
TLCHB 25 - 10L

ISO 9906 - Annex A



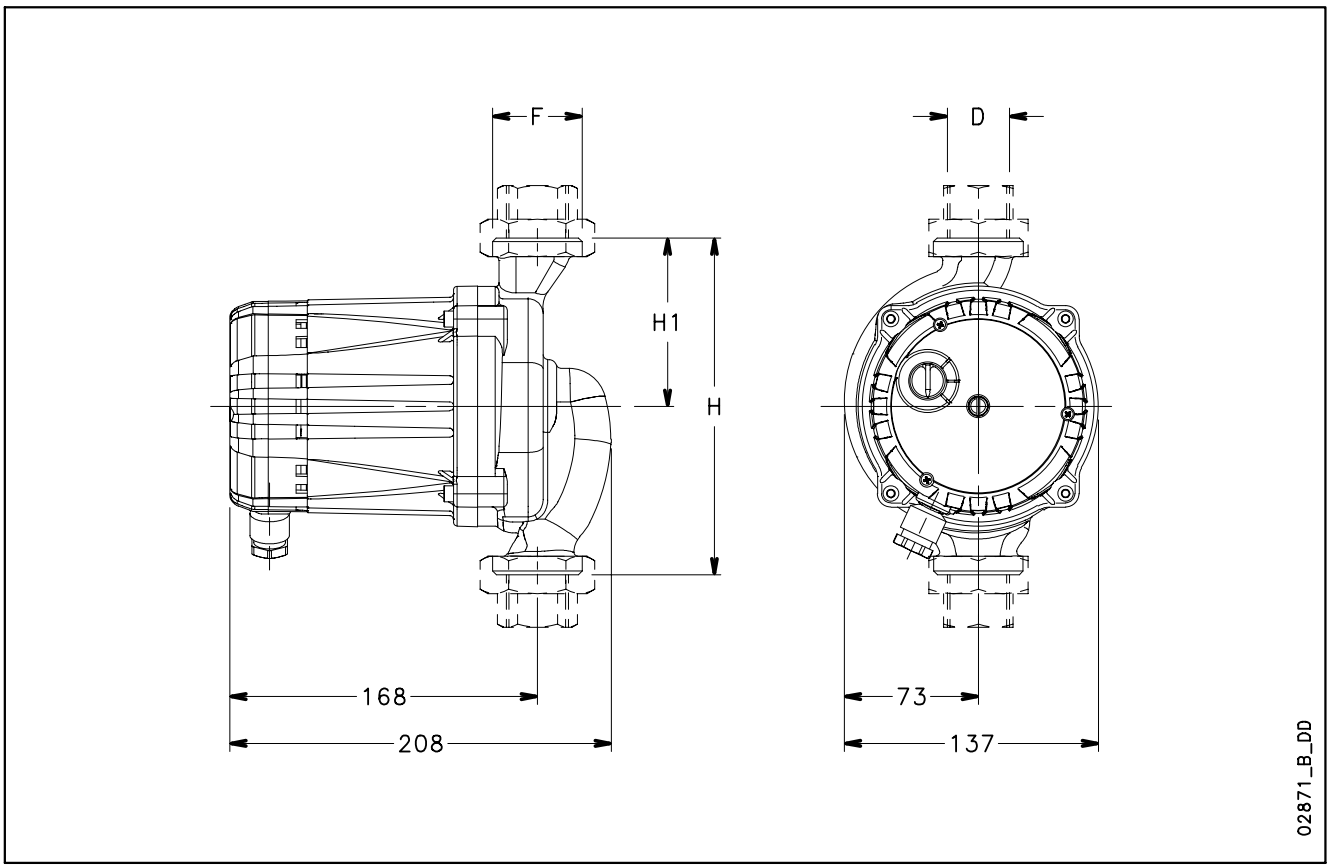
TLCHB 20 - 12L
TLCHB 25 - 12L

ISO 9906 - Annex A



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

TLCHB SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)					WEIGHT
	H	H1	D	F	DN	kg
TLCHB 20-7L	180	90	3/4"	G 1"¼	20	6,7
TLCHB 25-7L	180	90	1"	G 1"½	25	6,7
TLCHB 20-8L	180	90	3/4"	G 1"¼	20	6,7
TLCHB 25-8L	180	90	1"	G 1"½	25	6,7
TLCHB 20-10L	180	90	3/4"	G 1"¼	20	6,7
TLCHB 25-10L	180	90	1"	G 1"½	25	6,7
TLCHB 20-12L	180	90	3/4"	G 1"¼	20	6,7
TLCHB 25-12L	180	90	1"	G 1"½	25	6,7

tlchb-2p50-en_c_td

Solar Circulators

MARKET SECTORS
RESIDENTIAL, LIGHT COMMERCIAL.

APPLICATIONS
- Circulation of hot water in solar systems.

TLCSOL Series

SPECIFICATIONS

PUMP
- **Flow rate**: up to 4 m^3/h.
- **Head**: up to 6 m.
- **Temperature of pumped liquid**: -10°C ÷ +110°C
  +130°C can be reached for max 2h.
  Non-freezing, non-condensing.
  Maximum of 50% glycol and water mixture.
  For glycol quantities higher than 50%, hydraulic performances must be checked.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Impeller**: made of composite material.
- **Wear ring**: ceramic.

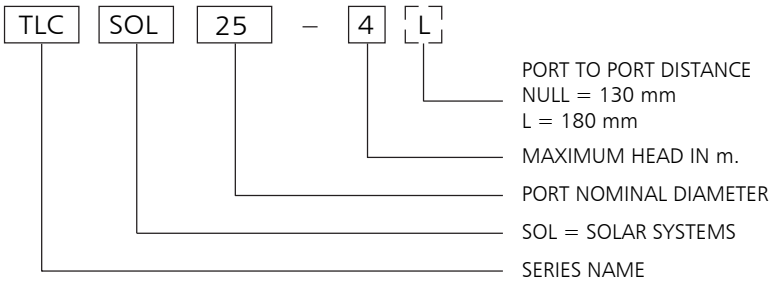
MOTOR
- Wet rotor type, with bearings lubricated by the pumped liquid. Axial and radial bearings made of ceramic.
- Single-phase 230 V 50 Hz power supply. Terminal box axially integrated in the motor.
- 2-pole, three-speed motor, with manual speed selection.
- According to EN standards 60335-1 and 2-51.
- **Insulation class**: H (180°C).
- **Protection class**: IP 44.

CONSTRUCTION CHARACTERISTICS
- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation onto piping, with 1" and 1" ½ threaded connections.
- Resin-cast stator to avoid water condensation inside the motor.

ACCESSORIES
- Pipe unions.
- Insulation shell.

INSTALLATION
- Suitable for installation in horizontal or vertical piping, in any position provided that motor axis is horizontal.

TLCSOL SERIES
IDENTIFICATION CODE



EXAMPLE : TLCSOL 25-4L

TLC series circulator, for Solar systems, port nominal diameter = 25,
max head= 4 m, with port to port distance of 180 mm.

TABLE OF MATERIALS

PART	MATERIAL
Pump body	Cast iron cataphoretically coated
Impeller	Composite material
Shaft	Ceramics
Inner jacket	Stainless steel
Wear ring	Ceramics
Bearings	Ceramics
Gaskets	EPDM

tlcsol-2p50-en_a_tm

TLCSOL SERIES
HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	0,2	0,3	0,4	0,5	0,7	0,8	1,0	1,2
						m^3/h 0	0,6	1,2	1,5	1,8	2,4	3,0	3,6	4,2
230V 50Hz	W	A	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
TLCSOL 15-4 TLCSOL 25-4L	40	0,19	2,0	400	1	2,9	2,6	2,1	1,9	1,6	1,0			
	59	0,28			2	3,5	3,2	2,9	2,6	2,4	1,8	1,2		
	70	0,33			3	4,0	3,8	3,4	3,3	3,0	2,5	2,0	1,3	
TLCSOL 15-6 TLCSOL 25-6L	56	0,27	3,0	400	1	3,0	1,8	1,2	0,9	0,6				
	83	0,37			2	4,7	3,6	2,7	2,3	1,9	1,2	0,7		
	100	0,44			3	5,7	5,0	4,3	4,0	3,7	3,0	2,4	1,8	1,2

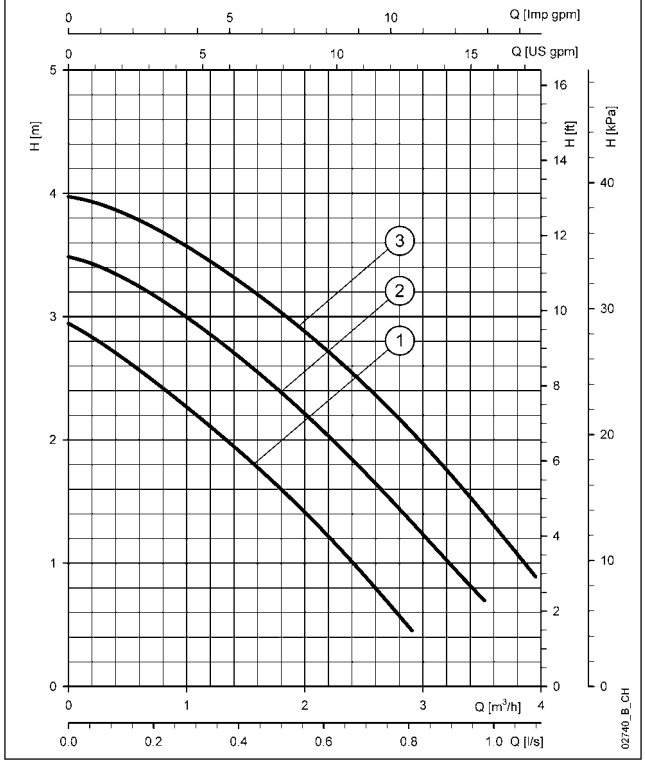
Performances according to standards EN 1151-1

tlcsol-2p50-en_b_th

TLCSOL SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

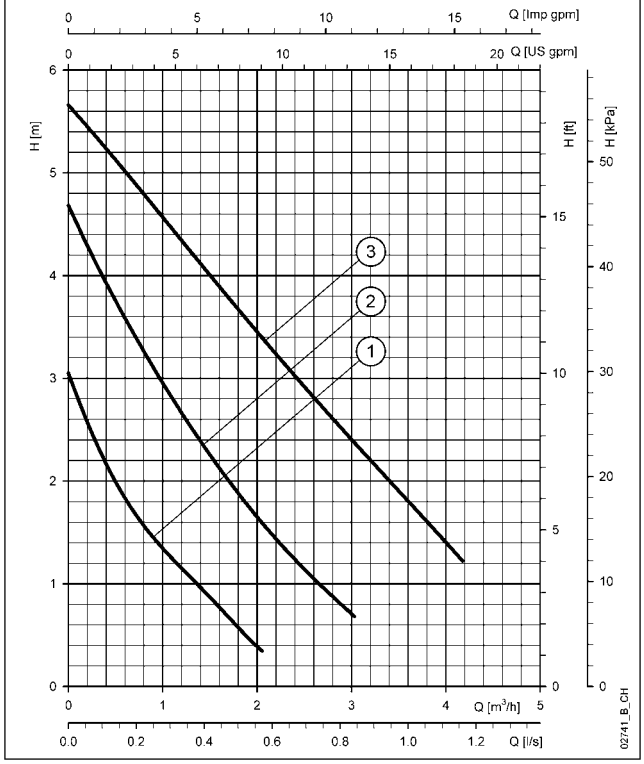
TLCSOL 15 - 4
TLCSOL 25 - 4L

EN 1151-1



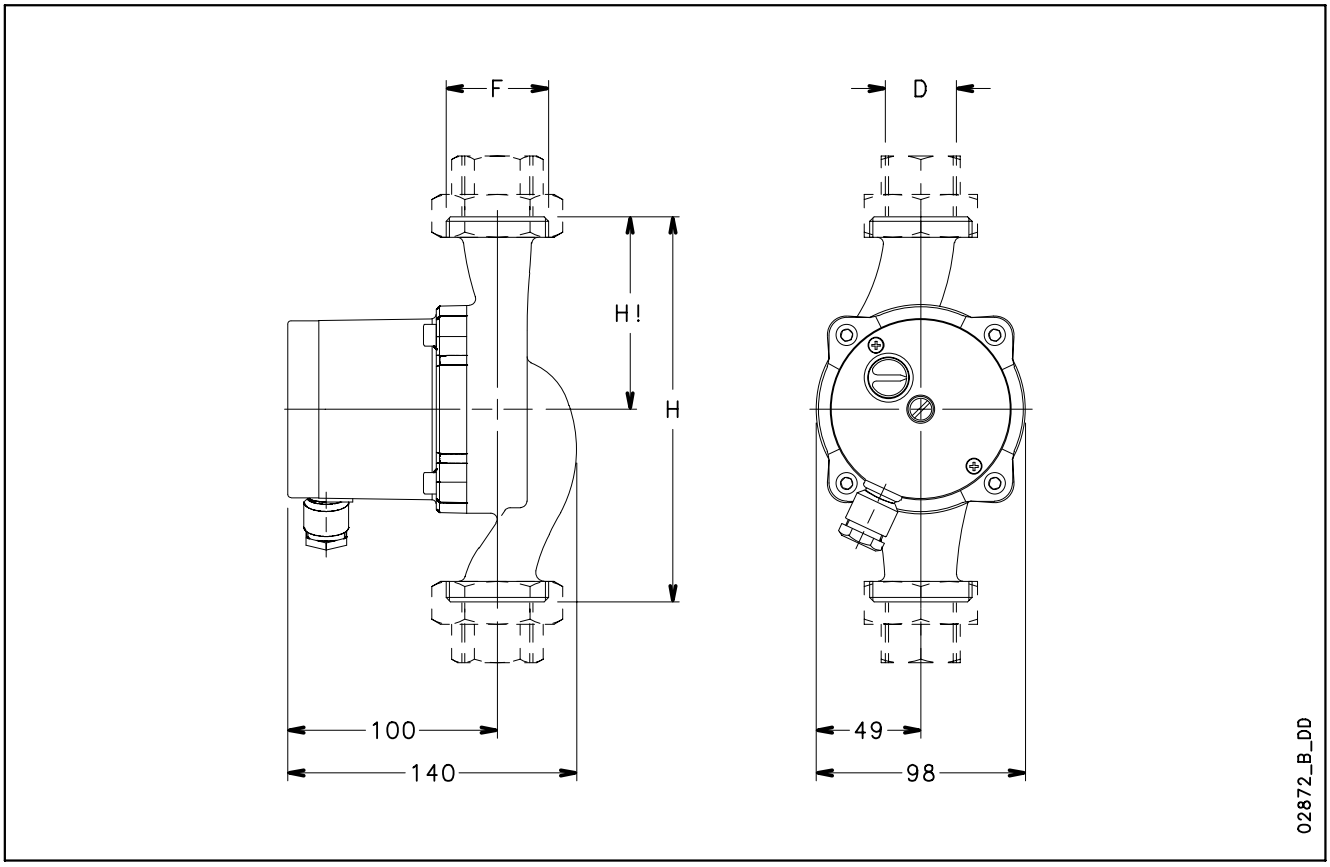
TLCSOL 15 - 6
TLCSOL 25 - 6L

EN 1151-1



These performances are valid for liquids with density $\rho = 1.0$ Kg/dm^3 and kinematic viscosity $\nu = 1$ mm^2/sec.

TLCSOL SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)					WEIGHT
	H	H1	D	F	DN	kg
TLCSOL 15-4	130	65	1/2"	G 1"	15	3
TLCSOL 25-4L	180	90	1"	G 1"½	25	3
TLCSOL 15-6	130	65	1/2"	G 1"	15	3
TLCSOL 25-6L	180	90	1"	G 1"½	25	3

tlcsol-2p50-en_c_td

Refrigeration Air-conditioning Circulators

MARKET SECTORS
RESIDENTIAL, LIGHT COMMERCIAL.

APPLICATIONS
- Circulation of water in air-conditioning and refrigeration systems and geothermal systems.

TLCK Series

SPECIFICATIONS

PUMP
- **Flow rate**: up to 5,5 m^3/h.
- **Head**: up to 6 m.
- **Temperature of pumped liquid**: -25°C ÷ +110°C.
  Non-freezing, non-condensing.
  Maximum of 50% glycol and water mixture.
  For glycol quantities higher than 50%, hydraulic performances must be checked.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Impeller**: made of composite material.
- **Wear ring**: ceramic.

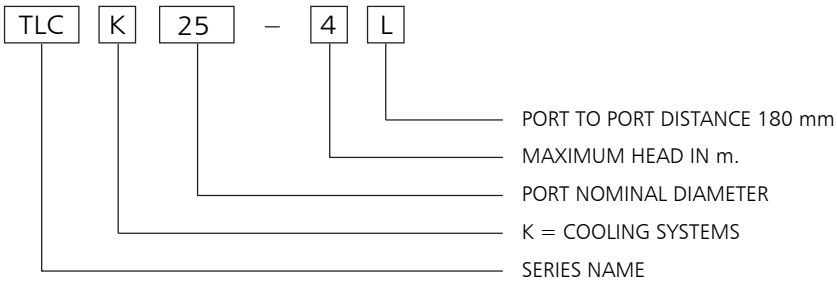
MOTOR
- Wet rotor type, with bearings lubricated by the pumped liquid. Axial and radial bearings made of ceramic.
- Single-phase 230 V 50 Hz power supply. Terminal box axially integrated in the motor.
- 2-pole, three-speed motor, with manual speed selection.
- According to EN standards 60335-1 and 2-51.
- **Insulation class**: H (180°C).
- **Protection class**: IP 44.

CONSTRUCTION CHARACTERISTICS
- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation onto piping, with 1" and 1" ½ threaded connections.
- Resin-cast stator to avoid water condensation inside the motor.

ACCESSORIES
- Pipe unions.
- Insulation shell.

INSTALLATION
- Suitable for installation in horizontal or vertical piping, in any position provided that motor axis is horizontal.

TLCK SERIES
IDENTIFICATION CODE



EXAMPLE : TLCK 25-4L

TLC series circulator, K for cooling systems, port nominal diameter = 25,
max head= 4 m, with port to port distance of 180 mm.

TABLE OF MATERIALS

PART	MATERIAL
Pump body	Cast iron cataphoretically coated
Impeller	Composite material
Shaft	Ceramics
Inner jacket	Stainless steel
Wear ring	Ceramics
Bearings	Ceramics
Gaskets	EPDM

tlck-2p50-en_a_tm

TLCK SERIES
HYDRAULIC PERFORMANCE TABLE

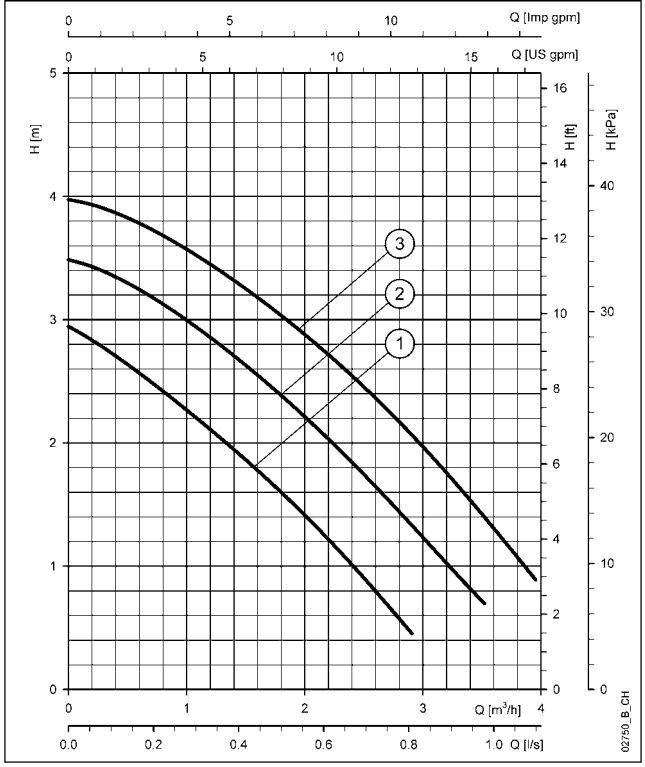
PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	0,2	0,3	0,4	0,5	0,7	0,8	1,0	1,2
						m^3/h 0	0,6	1,2	1,5	1,8	2,4	3,0	3,6	4,2
230V 50Hz	W	A	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
TLCK 25-4L	40	0,19	2,0	400	1	2,9	2,6	2,1	1,9	1,6	1,0			
	59	0,28			2	3,5	3,2	2,9	2,6	2,4	1,8	1,2		
	70	0,33			3	4,0	3,8	3,4	3,3	3,0	2,5	2,0	1,3	
TLCK 25-6L	56	0,27	3,0	400	1	3,0	1,8	1,2	0,9	0,6				
	83	0,37			2	4,7	3,6	2,7	2,3	1,9	1,2	0,7		
	100	0,44			3	5,7	5,0	4,3	4,0	3,7	3,0	2,4	1,8	1,2

Performances according to standards EN 1151-1

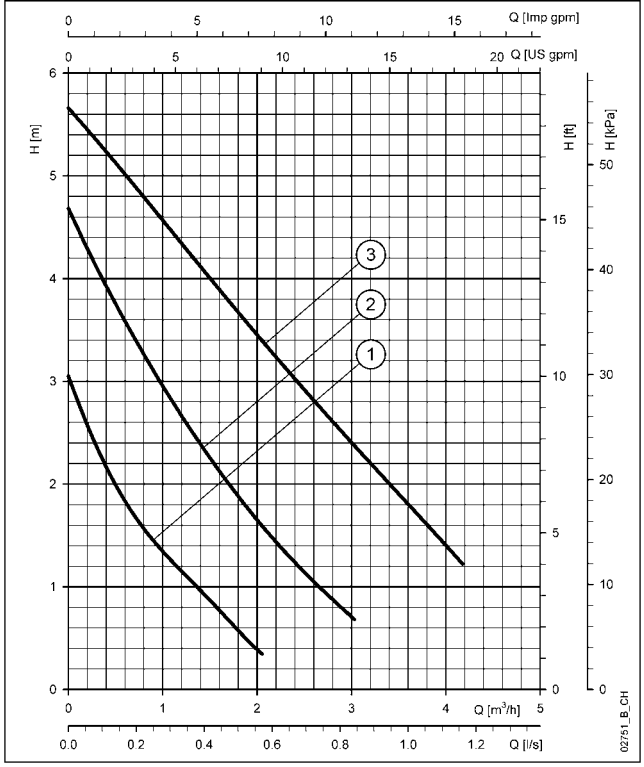
tlck-2p50-en_b_th

TLCK SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

TLCK 25 - 4L | EN 1151-1

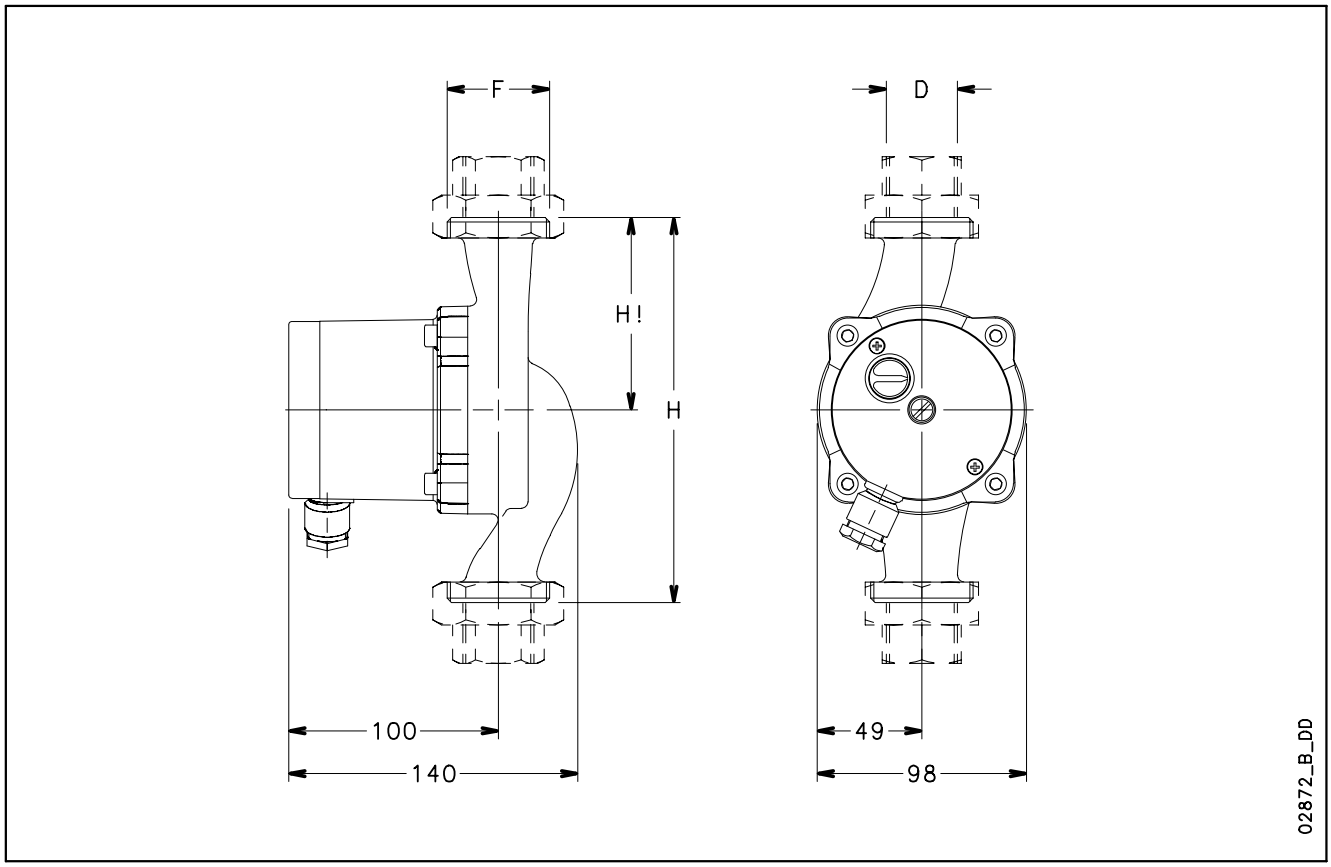


TLCK 25 - 6L | EN 1151-1



These performances are valid for liquids with density $\rho = 1.0$ Kg/dm^3 and kinematic viscosity $\nu = 1$ mm^2/sec.

TLCK SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)					WEIGHT
	H	H1	D	F	DN	kg
TLCK 25-4L	180	90	1"	G 1"½	25	3
TLCK 25-6L	180	90	1"	G 1"½	25	3

tlck-2p50-en_c_td

Circulators for commercial systems

FLC Series

MARKET SECTORS

COMMERCIAL AND INDUSTRIAL.

APPLICATIONS

- Water circulation in heating, air conditioning and cooling systems.
- Pumping of hot/cold, chemically and mechanically non-aggressive liquids.

SPECIFICATIONS

PUMP

- **Flow rate**: up to 80 m^3/h. (150 m^3/h with both pumps running).
- **Head**: up to 20 m.
- **Temperature of pumped liquid**: -15°C ÷ +120°C. Non-freezing, non-condensing.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Impeller**: made of cast iron (except models up to FLC(G) 40-7(T), made of composite material).

MOTOR

- Wet rotor type, with bearings lubricated by the pumped liquid. Integrated automatic motor protection. In single-case twin pumps each motor has its own protection.
- Power supply either single-phase 230 V 50 Hz or three-phase 400 V 50 Hz.
- 2-pole and 4-pole motor (FLC 50-5(T), FLCG 50-5(T) and FLCG 80-4(T) models):
  - four speed, with manual selector on the terminal board.
- Terminal board with:
  - set speed;
  - according to EN standard 61000-6-2 (immunity) and EN 61000-6-4 (emissions).
- **Insulation class**: F (155°C).
- **Protection class**: IP 44.

Circulators for commercial systems

FLC Series

CONSTRUCTION CHARACTERISTICS

- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation onto piping, with DN 40, 50, 65 and 80 mounting flanges (with pressure gauge connections).
- Single or twin pump design (with non-return valve on the suction side to allow the hydraulic changeover between the two pumps for the twin version). The two pumps can operate separately or in parallel.
- Rotor shaft made of perforated stainless steel.
  By enabling water circulation this design ensures:
  - continuous degassing of the rotor chamber, with no need to perform this operation manually during startup;
  - bearing lubrication.

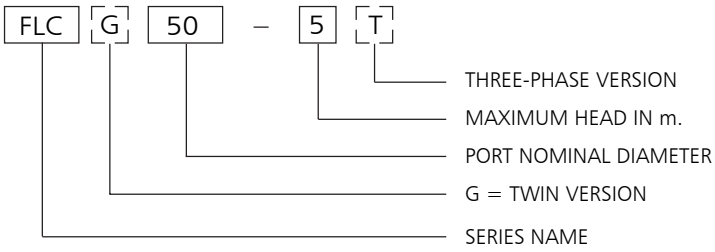
ACCESSORIES

- Blind flanges.
- Counterflanges.

INSTALLATION

- Suitable for installation in horizontal or vertical piping, in any position provided that motor axis is horizontal.
- Never install the circulator with the terminal box under the motor(s) (6 o'clock).
- For the twin design installed on horizontal piping, periodic changeover is recommended in order to prevent the formation of water pockets at the top; as an alternative, install an air bleed valve on the flange.
- For installation onto vertical piping the flow should always be upward. If not it is recommended to install an air venting point in the higher point of the circuit at the suction side.

FLC SERIES
IDENTIFICATION CODE



EXAMPLE : FLCG 50-5T

FLC series circulator, twin version, port nominal diameter = 50,
max head = 5 m, three-phase version.

TABLE OF MATERIALS

PART	MATERIAL
Pump body	Cast iron
Impeller up to FLC(G) 40-7(T)	Composite material
Impeller from FLC(G) 40-10(T)	Cast iron
Shaft	Stainless steel
Jacket	Stainless steel
Bearings	Graphite
Gaskets	EPDM

flc-2p50-en_a_tm

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a xylem brand

FLC SERIES (SINGLE VERSION, SINGLE-PHASE)
HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	1,4	2,8	4,9	6,9	9,0	11,1	13,2	15,3
						m^3/h 0	5,0	10,0	17,5	25,0	32,5	40,0	47,5	55,0
230V 50Hz	W	A	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
* FLC 40-5	128	0,59	6,0	400	1	4,0	2,5							
	136	0,61			2	4,0	3,0	0,3						
	143	0,63			3	4,1	3,2	0,4						
	154	0,70			4	4,1	3,3	0,6						
FLC 40-7	288	1,30	8,0	400	1	7,9	3,9							
	319	1,43			2	8,2	5,7	1,6						
	326	1,44			3	8,3	6,4	2,9						
	326	1,43			4	8,3	6,7	3,6						
FLC 40-10	490	2,24	30,0	400	1	6,8	4,8	2,5						
	585	2,61			2	8,4	6,8	4,3	0,9					
	679	3,02			3	9,3	8,1	6,1	2,3					
	734	3,21			4	9,7	8,7	7,3	4,0					
FLC 50-5	245	1,15	16,0	400	1	4,2	3,3	1,9						
	277	1,26			2	4,7	4,3	3,0	0,3					
	296	1,36			3	4,9	4,6	3,5	1,0					
	311	1,56			4	4,9	4,7	3,8	1,5					
FLC 50-8	459	2,08	25,0	400	1	6,6	5,2	3,1	0,9					
	558	2,50			2	7,7	6,9	4,9	1,9					
	650	2,89			3	8,2	7,9	6,5	3,4	0,8				
	684	3,03			4	8,5	8,4	7,5	4,9	1,9				
FLC 50-10	497	2,24	30,0	400	1	5,6	4,1	2,6	0,7					
	600	2,69			2	7,4	6,0	4,0	1,7					
	719	3,15			3	8,3	7,3	5,4	2,7	0,3				
	800	3,57			4	9,0	8,5	7,1	4,6	1,8				
FLC 50-13	810	3,66	40,0	400	1	9,6	7,9	5,7	2,8					
	986	4,46			2	11,1	10,0	8,0	4,5	1,3				
	1176	5,27			3	11,8	11,0	9,4	6,3	2,8				
	1306	5,88			4	12,4	11,9	10,8	8,5	5,4	1,4			
FLC 65-7	506	2,23	30,0	400	1	4,5	3,5	2,5	1,3					
	590	2,62			2	5,8	4,9	3,7	2,2	0,8				
	657	2,99			3	6,6	5,9	4,8	3,2	1,6				
	711	3,24			4	7,1	6,6	5,8	4,3	2,8	1,1			
FLC 65-10	624	2,77	30,0	400	1	6,5	5,7	4,5	2,8	1,4				
	725	3,19			2	7,4	6,8	5,8	4,0	2,3	0,8			
	826	3,66			3	7,8	7,5	6,6	5,0	3,2	1,5			
	920	4,33			4	8,1	8,0	7,3	5,9	4,2	2,2			
FLC 65-12	801	3,61	40,0	400	1	8,1	6,8	5,1	3,2	1,8	0,4			
	970	4,36			2	9,5	8,6	7,1	4,7	2,9	1,3			
	1159	5,21			3	10,3	9,6	8,4	6,3	4,2	2,3	0,7		
	1296	5,74			4	10,8	10,5	9,7	8,1	6,3	4,3	2,1		
FLC 80-8	650	2,80	30,0	400	1	3,6	3,4	3,1	2,5	1,9	1,3	0,6		
	729	3,15			2	4,3	4,2	3,8	3,3	2,6	1,9	1,1		
	808	3,54			3	5,0	4,8	4,5	3,9	3,2	2,4	1,6		
	902	4,28			4	5,5	5,4	5,1	4,4	3,7	2,9	2,0	1,0	
FLC 80-10	807	3,63	40,0	400	1	4,6	4,4	3,9	3,1	2,2	1,6	1,0		
	986	4,43			2	6,0	5,7	5,2	4,3	3,1	2,1	1,6	1,0	
	1186	5,32			3	7,2	6,9	6,5	5,5	4,4	3,3	2,4	1,8	
	1330	5,87			4	8,1	7,9	7,6	7,0	6,1	5,1	4,1	3,1	1,9

* Performances according to standards EN 1151-1.

flcm-2p50-en_b_th

Performances according to standards ISO 9906 - Annex A.

FLC40..T - FLC50..T SERIES (SINGLE VERSION, THREE-PHASE) HYDRAULIC PERFORMANCE TABLE

PUMP TYPE 400V 50Hz	MAXIMUM ABSORBED POWER W	MAXIMUM ABSORBED CURRENT A	SPEED	Q = DELIVERY l/s 0	0,6	1,1	1,7	2,2	2,8	3,3	3,9	4,4	5,6	6,7	7,8	8,9	10,0	11,1
				m^3/h 0	2	4	6	8	10	12	14	16	20	24	28	32	36	40
				H = TOTAL HEAD METRES COLUMN OF WATER														
* FLC 40-5T	105	0,17	1	3,6	3,1	2,5	1,6	0,7										
	118	0,21	2	3,7	3,3	2,8	2,1	1,1										
	135	0,25	3	3,9	3,5	3,2	2,5	1,4	0,2									
	150	0,33	4	3,9	3,7	3,4	2,7	1,7	0,5									
FLC 40-7T	209	0,33	1	7,5	5,5	4,6	3,3	1,9	0,7									
	252	0,40	2	7,8	6,3	5,5	4,3	2,9	1,5	0,1								
	296	0,49	3	8,1	6,9	6,3	5,4	4,1	2,5	1,0								
	336	0,61	4	8,3	7,4	7,0	6,3	5,1	3,6	2,0	0,1							
FLC 40-10T	471	0,77	1	7,8	7,0	6,4	5,8	5,0	4,1	3,1	2,3	1,5						
	570	0,92	2	8,5	7,9	7,4	6,9	6,2	5,4	4,5	3,5	2,6	0,9					
	645	1,03	3	9,0	8,7	8,2	7,7	7,1	6,4	5,7	4,9	4,0	2,0					
	699	1,17	4	9,5	9,2	8,8	8,4	7,9	7,3	6,6	5,9	5,0	3,1	1,0				
FLC 50-5T	221	0,43	1	4,3	4,1	3,8	3,3	2,8	2,2	1,6	1,0	0,2						
	264	0,51	2	4,5	4,5	4,2	3,8	3,4	2,9	2,4	1,7	1,0						
	304	0,62	3	4,7	4,8	4,6	4,2	3,9	3,5	3,0	2,4	1,7						
	334	0,78	4	4,8	5,0	4,8	4,5	4,2	3,8	3,4	2,8	2,2	0,5					
FLC 50-8T	495	0,80	1	6,9	6,7	6,5	6,1	5,6	4,9	4,2	3,4	2,6	1,2					
	550	0,88	2	7,6	7,5	7,3	6,9	6,4	5,8	5,1	4,4	3,6	2,1	0,7				
	621	1,00	3	8,2	8,1	8,0	7,7	7,3	6,9	6,3	5,6	4,9	3,2	1,5				
	669	1,13	4	8,5	8,5	8,5	8,3	8,0	7,6	7,1	6,5	5,8	4,2	2,4	0,8			
FLC 50-10T	508	0,83	1	6,9	6,6	6,0	5,4	4,7	4,1	3,5	2,9	2,3	1,2					
	622	1,00	2	7,9	7,7	7,3	6,7	6,1	5,5	4,8	4,2	3,5	2,2	0,9				
	724	1,17	3	8,6	8,5	8,2	7,7	7,1	6,5	5,8	5,2	4,5	3,2	1,7	0,3			
	822	1,39	4	9,4	9,4	9,2	8,8	8,3	7,7	7,1	6,5	5,8	4,5	2,9	1,2			
FLC 50-13T	852	1,39	1	10,6	10,2	9,7	9,1	8,4	7,7	6,9	6,2	5,5	3,9					
	1017	1,68	2	11,6	11,4	11,0	10,5	9,9	9,3	8,6	7,8	7,0	5,4	3,7	1,8			
	1180	1,94	3	12,4	12,2	11,9	11,5	11,0	10,4	9,8	9,2	8,4	6,9	5,1	3,2	1,1		
	1338	2,40	4	13,2	13,2	13,0	12,7	12,3	11,8	11,2	10,6	9,9	8,4	6,7	4,7	2,5		
FLC 50-18T	1507	2,40	1	16,5	16,6	16,2	15,6	14,9	14,1	13,2	12,3	11,4	9,4	7,1	4,4	1,6		
	1768	2,80	2	17,8	18,0	17,8	17,4	16,8	16,1	15,3	14,4	13,6	11,7	9,6	7,0	4,1	1,0	
	2017	3,20	3	18,7	19,0	19,0	18,7	18,3	17,7	17,0	16,3	15,5	13,7	11,7	9,2	6,4	3,2	
	2232	3,66	4	19,6	20,0	20,0	19,8	19,5	19,0	18,5	17,9	17,2	15,7	13,8	11,4	8,6	5,4	1,8

* Performances according to standards EN 1151-1.

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Performances according to standards ISO 9906 - Annex A.

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FLC65..T - FLC80..T SERIES (SINGLE VERSION, THREE-PHASE) HYDRAULIC PERFORMANCE TABLE

PUMP TYPE 400V 50Hz	MAXIMUM ABSORBED POWER W	MAXIMUM ABSORBED CURRENT A	SPEED	Q = DELIVERY l/s 0	1,4	2,8	4,2	5,6	6,9	8,3	9,7	11,1	12,5	13,9	15,3	16,7	19,4	22,2
				m^3/h 0	5	10	15	20	25	30	35	40	45	50	55	60	70	80
				H = TOTAL HEAD METRES COLUMN OF WATER														
FLC 65-7T	458	0,73	1	5,3	4,5	3,6	2,7	1,8	0,8									
	547	0,89	2	5,9	5,2	4,2	3,3	2,4	1,3									
	628	1,02	3	6,5	6,0	5,1	4,2	3,2	2,1	0,9								
	702	1,22	4	7,0	6,6	5,9	5,0	4,0	2,9	1,6								
FLC 65-10T	640	1,04	1	7,1	6,3	5,2	4,2	3,2	2,1	1,0								
	761	1,24	2	7,8	7,2	6,2	5,2	4,2	3,0	1,8	0,6							
	874	1,45	3	8,4	8,0	7,1	6,1	5,0	3,8	2,6	1,2							
	1020	1,97	4	9,0	8,7	7,9	6,9	5,9	4,7	3,4	2,0							
FLC 65-12T	892	1,43	1	9,1	8,3	7,1	5,9	4,8	3,6	2,4	1,2							
	1070	1,70	2	10,1	9,6	8,6	7,4	6,2	5,0	3,8	2,4	1,0						
	1229	1,96	3	10,9	10,5	9,6	8,5	7,4	6,2	4,9	3,5	2,0						
	1385	2,32	4	11,8	11,6	10,9	9,9	8,7	7,6	6,3	4,9	3,3	1,6					
FLC 65-16T	1424	2,26	1	13,0	12,4	11,4	10,2	8,8	7,4	5,9	4,3	2,6	0,8					
	1651	2,61	2	14,0	13,6	12,8	11,7	10,5	9,0	7,5	6,0	4,2	2,4					
	1862	2,95	3	14,8	14,6	13,9	13,0	11,8	10,5	9,0	7,4	5,6	3,7	1,5				
	2029	3,37	4	15,3	15,4	14,9	14,0	12,9	11,6	10,2	8,7	6,9	5,0	2,8				
FLC 80-8T	629	1,03	1	4,0	3,9	3,6	3,2	2,8	2,3	1,9	1,4	0,9						
	765	1,23	2	4,9	4,8	4,5	4,1	3,6	3,1	2,6	2,0	1,5	0,9					
	884	1,46	3	5,5	5,4	5,1	4,7	4,2	3,7	3,2	2,6	2,1	1,4					
	1033	1,97	4	6,2	6,1	5,8	5,4	4,9	4,3	3,8	3,2	2,6	1,9	1,2				
FLC 80-10T	889	1,45	1	6,1	5,9	5,5	5,0	4,4	3,9	3,3	2,7	2,1	1,4					
	1086	1,73	2	7,1	7,0	6,6	6,2	5,6	5,1	4,5	3,9	3,3	2,6	1,8				
	1238	1,99	3	7,9	7,8	7,5	7,1	6,5	6,0	5,3	4,7	4,1	3,4	2,7	2,0			
	1390	2,35	4	8,8	8,7	8,5	8,1	7,6	7,0	6,4	5,8	5,1	4,4	3,7	2,9	2,0		
FLC 80-12T	1393	2,21	1	8,8	8,5	8,1	7,6	7,0	6,5	5,8	5,2	4,5	3,8	3,1	2,4	1,7		
	1611	2,54	2	9,7	9,4	9,1	8,7	8,2	7,7	7,0	6,4	5,7	4,9	4,2	3,4	2,6		
	1806	2,88	3	10,5	10,3	10,0	9,6	9,1	8,6	8,0	7,3	6,7	5,9	5,2	4,3	3,5	1,6	
	2005	3,35	4	11,4	11,3	11,0	10,7	10,2	9,7	9,1	8,4	7,7	6,9	6,1	5,3	4,4	2,3	
FLC 80-15T	1647	2,62	1	10,2	9,7	9,2	8,7	8,1	7,4	6,7	6,0	5,3	4,6	4,0	3,3	2,7		
	1959	3,09	2	11,4	11,0	10,7	10,2	9,7	9,1	8,5	7,7	7,0	6,2	5,5	4,7	4,0	2,5	
	2263	3,58	3	12,5	12,2	11,9	11,6	11,1	10,6	10,0	9,3	8,5	7,7	6,9	6,1	5,4	3,8	
	2537	4,15	4	13,5	13,4	13,2	12,9	12,6	12,2	11,6	11,0	10,3	9,5	8,7	7,8	7,0	5,2	3,3

Performances according to standards ISO 9906 - Annex A.

flct-2-2p50-en_b_th

LOWARA
a xylem brand

FLCG SERIES (TWIN VERSION, SINGLE-PHASE)
HYDRAULIC PERFORMANCE TABLE
(SINGLE OPERATION)

PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	1,1	2,2	3,3	5,0	6,9	9,7	12,5	15,3
						m^3/h 0	4,0	8,0	12,0	18,0	25,0	35,0	45,0	55,0
230V 50Hz	W	A	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
* FLCG 40-5	123	0,56	6,0	400	1	3,9	2,9	1,0						
	130	0,58			2	4,0	3,2	1,4						
	139	0,61			3	4,0	3,4	1,7						
	147	0,67			4	4,0	3,5	1,8						
FLCG 40-7	273	1,28	8,0	400	1	7,3	4,8	1,3						
	293	1,38			2	7,6	5,9	2,7	0,4					
	303	1,39			3	7,7	6,5	4,1	1,2					
	303	1,37			4	7,8	6,8	4,7	1,7					
FLCG 40-10	498	2,23	30,0	400	1	6,5	5,1	3,2	1,6					
	599	2,65			2	8,0	6,9	5,2	3,1					
	671	3,08			3	8,8	8,0	6,7	5,0	2,0				
	730	3,34			4	9,0	8,4	7,4	6,1	3,6				
FLCG 50-5	245	1,15	16,0	400	1	4,2	3,5	2,3	0,9					
	267	1,25			2	4,7	4,3	3,2	1,7					
	298	1,34			3	4,9	4,6	3,8	2,6	0,2				
	307	1,55			4	4,9	4,7	4,0	2,9	0,4				
FLCG 50-8	459	2,06	25,0	400	1	6,6	5,1	3,4	2,1	0,4				
	548	2,44			2	7,8	6,8	5,0	3,4	1,3				
	606	2,72			3	8,4	7,8	6,5	5,0	2,7				
	633	2,83			4	8,6	8,3	7,3	6,0	3,8	0,7			
FLCG 50-10	497	2,23	30,0	400	1	5,7	4,2	2,9	1,8	0,1				
	595	2,65			2	7,7	6,2	4,5	3,1	1,0				
	702	3,11			3	8,7	7,5	6,0	4,4	2,1				
	774	3,42			4	9,3	8,6	7,5	6,2	4,0	0,8			
FLCG 65-7	489	2,20	30,0	400	1	3,6	3,0	2,4	1,8	0,9				
	592	2,62			2	4,8	4,3	3,6	2,9	1,8	0,5			
	684	3,01			3	5,6	5,1	4,5	3,8	2,6	1,2			
	740	3,25			4	6,1	5,8	5,3	4,8	3,7	2,2			
FLCG 65-10	634	2,82	30,0	400	1	5,6	5,0	4,2	3,3	2,1	0,8			
	746	3,36			2	6,5	6,0	5,2	4,3	3,0	1,5			
	882	3,97			3	7,0	6,8	6,1	5,3	4,0	2,4			
	994	4,68			4	7,4	7,3	6,8	6,1	5,0	3,5	1,0		
FLCG 65-12	812	3,68	40,0	400	1	6,8	5,9	4,7	3,6	2,3	0,9			
	997	4,53			2	8,5	7,8	6,6	5,3	3,5	1,8			
	1208	5,46			3	9,4	9,0	8,1	6,9	5,1	3,0	0,5		
	1389	6,19			4	10,2	10,0	9,4	8,6	7,3	5,6	2,7		
FLCG 80-4	533	2,41	30,0	400	1	3,7	3,5	3,2	3,0	2,5	1,8	0,9		
	569	2,56			2	4,1	4,0	3,8	3,6	3,2	2,6	1,6		
	587	2,66			3	4,2	4,1	4,0	3,8	3,5	3,0	2,0	0,8	
	595	2,85			4	4,3	4,2	4,1	4,0	3,7	3,3	2,4	1,2	
FLCG 80-8	639	2,88	30,0	400	1	3,0	2,9	2,7	2,5	2,1	1,5			
	765	3,42			2	3,8	3,7	3,5	3,2	2,8	2,2	1,1		
	881	3,97			3	4,6	4,5	4,2	3,9	3,5	2,9	1,7		
	973	4,62			4	5,4	5,3	5,0	4,6	4,1	3,4	2,3	1,0	
FLCG 80-10	805	3,60	40,0	400	1	4,3	4,1	3,7	3,2	2,7	2,1	1,1		
	962	4,30			2	5,6	5,3	4,8	4,3	3,6	3,0	2,1	0,9	
	1144	5,08			3	6,6	6,4	5,9	5,4	4,7	4,0	2,9	1,5	
	1263	5,61			4	7,8	7,6	7,2	6,8	6,1	5,3	4,2	2,7	1,0

* Performances according to standards EN 1151-1.

Performances according to standards ISO 9906 - Annex A.

flcgm-2p50S-en_b_th

LOWARA
a xylem brand

FLCG SERIES (TWIN VERSION, SINGLE-PHASE)
HYDRAULIC PERFORMANCE TABLE
(PARALLEL OPERATION)

PUMP TYPE	MAXIMUM ABSORBED POWER	MAXIMUM ABSORBED CURRENT	CAPACITOR		SPEED	Q = DELIVERY								
						l/s 0	2,8	4,2	5,6	9,7	13,9	18,8	22,2	27,8
						m^3/h 0	10,0	15,0	20,0	35,0	50,0	67,5	80,0	100,0
230V 50Hz	W*	A*	µF	V		H = TOTAL HEAD METRES COLUMN OF WATER								
** FLCG 40-5	123	0,56	6,0	400	1	3,9	2,3	1,0						
	130	0,58			2	4,0	2,7	1,4						
	139	0,61			3	4,0	2,9	1,6						
	147	0,67			4	4,0	3,0	1,7	0,1					
FLCG 40-7	273	1,28	8,0	400	1	7,3	3,3	1,1	0,2					
	293	1,38			2	7,6	4,9	2,5	0,9					
	303	1,39			3	7,7	5,8	3,9	1,9					
	303	1,37			4	7,8	6,2	4,5	2,4					
FLCG 40-10	498	2,23	30,0	400	1	6,5	4,0	2,6	1,4					
	599	2,65			2	8,0	6,0	4,5	2,9					
	671	3,08			3	8,8	7,4	6,2	4,8	0,3				
	730	3,34			4	9,0	7,9	7,0	5,9	1,9				
FLCG 50-5	245	1,15	16,0	400	1	4,2	3,1	2,2	1,2					
	267	1,25			2	4,7	3,9	3,1	2,1					
	298	1,34			3	4,9	4,3	3,8	3,0					
	307	1,55			4	4,9	4,5	4,0	3,3					
FLCG 50-8	459	2,06	25,0	400	1	6,6	4,4	3,3	2,4					
	548	2,44			2	7,8	6,1	4,9	3,8	0,9				
	606	2,72			3	8,4	7,3	6,4	5,4	2,2				
	633	2,83			4	8,6	8,0	7,2	6,4	3,3				
FLCG 50-10	497	2,23	30,0	400	1	5,7	3,6	2,8	2,1	0,5				
	595	2,65			2	7,7	5,5	4,4	3,4	0,5				
	702	3,11			3	8,7	6,9	5,8	4,7	1,5				
	774	3,42			4	9,3	8,2	7,3	6,5	3,2				
FLCG 65-7	489	2,20	30,0	400	1	3,6	2,6	2,0	1,5					
	592	2,62			2	4,8	3,8	3,1	2,5	0,5				
	684	3,01			3	5,6	4,6	4,0	3,3	1,2				
	740	3,25			4	6,1	5,4	5,0	4,4	2,2				
FLCG 65-10	634	2,82	30,0	400	1	5,6	4,8	4,3	3,7	2,2	0,8			
	746	3,36			2	6,5	5,8	5,3	4,7	3,1	1,5			
	882	3,97			3	7,0	6,6	6,2	5,7	4,1	2,4	0,5		
	994	4,68			4	7,4	7,2	6,9	6,5	5,1	3,5	1,3		
FLCG 65-12	812	3,68	40,0	400	1	6,8	5,6	4,8	4,1	2,3	0,7			
	997	4,53			2	8,5	7,5	6,7	5,9	3,5	1,6			
	1208	5,46			3	9,4	8,7	8,1	7,4	5,1	2,8	0,6		
	1389	6,19			4	10,2	9,9	9,5	9,0	7,3	5,4	2,8	0,9	
FLCG 80-4	533	2,41	30,0	400	1	3,7	3,4	3,2	3,0	2,3	1,5	0,6		
	569	2,56			2	4,1	3,9	3,8	3,7	3,1	2,3	1,3	0,4	
	587	2,66			3	4,2	4,1	4,0	3,8	3,4	2,7	1,6	0,8	
	595	2,85			4	4,3	4,2	4,1	4,0	3,6	3,0	2,1	1,2	
FLCG 80-8	639	2,88	30,0	400	1	3,0	2,8	2,7	2,5	2,0	1,2			
	765	3,42			2	3,8	3,6	3,5	3,3	2,7	2,0	0,9		
	881	3,97			3	4,6	4,4	4,2	4,0	3,4	2,6	1,4	0,7	
	973	4,62			4	5,4	5,2	5,0	4,7	3,9	3,1	2,0	1,0	
FLCG 80-10	805	3,60	40,0	400	1	4,3	3,9	3,6	3,3	2,5	1,8	0,8	0,6	
	962	4,30			2	5,6	5,1	4,8	4,4	3,4	2,7	1,7	0,9	
	1144	5,08			3	6,6	6,2	5,9	5,5	4,5	3,7	2,5	1,5	1,2
	1263	5,61			4	7,8	7,4	7,1	6,8	5,9	5,0	3,8	2,7	0,8

* Electric data refer to single motor.

flcgm-2p50P-en_b_th

** Performances according to standards EN 1151-1.

Performances according to standards ISO 9906 - Annex A.

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FLCG40..T - FLCG50..T SERIES (TWIN VERSION, THREE-PHASE)
HYDRAULIC PERFORMANCE TABLE
(SINGLE OPERATION)

PUMP TYPE 400V 50Hz	MAXIMUM ABSORBED POWER W	MAXIMUM ABSORBED CURRENT A	SPEED	Q = DELIVERY														
				l/s 0	0,6	1,1	1,7	2,2	2,8	3,3	3,9	4,4	5,0	5,6	6,1	6,7	7,2	7,8
				m^3/h 0	2	4	6	8	10	12	14	16	18	20	22	24	26	28
				H = TOTAL HEAD METRES COLUMN OF WATER														
* FLCG 40-5T	100	0,17	1	3,6	3,1	2,5	1,6	0,7										
	114	0,20	2	3,7	3,4	2,8	2,0	1,0										
	129	0,25	3	3,9	3,6	3,2	2,4	1,4	0,2									
	143	0,33	4	4,0	3,8	3,4	2,7	1,6	0,4									
FLCG 40-7T	183	0,30	1	6,4	5,2	4,2	2,9	1,6	0,4									
	215	0,36	2	6,8	5,8	4,9	3,7	2,4	1,0									
	249	0,44	3	7,2	6,4	5,7	4,6	3,2	1,8	0,1								
	265	0,57	4	7,4	6,8	6,2	5,3	4,0	2,4	0,7								
FLCG 40-10T	468	0,78	1	7,3	6,8	6,1	5,3	4,5	3,6	2,8	2,0	1,2	0,5					
	575	0,93	2	7,9	7,5	7,0	6,3	5,6	4,9	4,0	3,2	2,3	1,5	0,7				
	666	1,06	3	8,5	8,2	7,8	7,3	6,6	6,0	5,2	4,4	3,6	2,7	1,8	0,9			
	731	1,22	4	8,9	8,7	8,3	7,9	7,4	6,8	6,1	5,4	4,6	3,7	2,8	1,9	0,9		
FLCG 50-5T	224	0,44	1	4,3	4,0	3,5	2,9	2,4	1,8	1,1	0,3							
	266	0,51	2	4,6	4,4	4,1	3,6	3,1	2,5	1,8	1,0	0,2						
	308	0,62	3	4,9	4,7	4,5	4,1	3,7	3,1	2,4	1,7	0,9						
	335	0,78	4	5,1	4,9	4,7	4,4	4,0	3,5	2,9	2,2	1,4	0,5					
FLCG 50-8T	440	0,71	1	7,0	6,7	6,1	5,4	4,7	4,0	3,3	2,6	2,0	1,2					
	514	0,83	2	7,7	7,5	7,0	6,4	5,7	5,1	4,4	3,7	3,0	2,2	1,4				
	579	0,94	3	8,3	8,2	7,8	7,3	6,7	6,1	5,5	4,8	4,0	3,2	2,4	1,5			
	626	1,07	4	8,7	8,6	8,4	7,9	7,4	6,9	6,2	5,6	4,9	4,1	3,3	2,4	1,4		
FLCG 50-10T	479	0,78	1	7,3	6,7	6,0	5,3	4,7	4,0	3,4	2,7	2,0	1,3	0,5				
	581	0,98	2	8,1	7,7	7,1	6,6	6,0	5,3	4,6	3,9	3,2	2,4	1,5	0,7			
	674	1,09	3	8,8	8,5	8,0	7,4	6,8	6,2	5,6	4,9	4,2	3,4	2,5	1,5	0,6		
	767	1,31	4	9,6	9,4	9,0	8,5	8,0	7,4	6,8	6,2	5,4	4,6	3,7	2,7	1,6	0,6	

* Performances according to standards EN 1151-1.

flcgt-1-2p50S-en_b_th

Performances according to standards ISO 9906 - Annex A.

LOWARA
a xylem brand

FLCG65..T - FLCG80..T SERIES (TWIN VERSION, THREE-PHASE)
HYDRAULIC PERFORMANCE TABLE
(SINGLE OPERATION)

PUMP TYPE 400V 50Hz	MAXIMUM ABSORBED POWER W	MAXIMUM ABSORBED CURRENT A	SPEED	Q = DELIVERY														
				l/s 0	1,4	2,8	4,2	5,6	6,9	8,3	9,7	11,1	12,5	13,9	15,3	16,7	19,4	22,2
				m^3/h 0	5	10	15	20	25	30	35	40	45	50	55	60	70	80
				H = TOTAL HEAD METRES COLUMN OF WATER														
FLCG 65-7T	475	0,77	1	4,7	4,0	3,1	2,2	1,4										
	578	0,93	2	5,3	4,6	3,7	2,8	1,9										
	668	1,08	3	5,9	5,4	4,6	3,7	2,7	1,7	0,5								
	807	1,39	4	6,3	5,9	5,0	4,1	3,1	2,0	0,8								
FLCG 65-10T	673	1,08	1	6,3	5,8	4,6	3,6	2,6	1,6	0,5								
	803	1,29	2	7,2	6,7	5,8	4,7	3,6	2,4	1,2								
	930	1,52	3	7,8	7,4	6,6	5,5	4,4	3,2	2,0	0,7							
	1079	2,02	4	8,5	8,3	7,4	6,4	5,3	4,1	2,8	1,4							
FLCG 65-12T	863	1,42	1	7,9	7,1	6,0	4,9	3,9	2,8	1,6	0,5							
	1044	1,68	2	8,8	8,1	7,2	6,2	5,1	4,0	2,8	1,5							
	1205	1,95	3	9,4	8,9	8,1	7,1	6,1	5,0	3,8	2,4	1,0						
	1353	2,30	4	10,1	9,7	9,0	8,1	7,2	6,1	4,9	3,5	2,1						
FLCG 65-16T	1511	2,40	1	11,6	11,0	9,8	8,6	7,3	6,0	4,7	3,1	1,4						
	1760	2,80	2	12,7	12,3	11,3	10,1	8,9	7,6	6,3	4,7	2,9	1,1					
	2002	3,16	3	13,5	13,4	12,5	11,4	10,2	9,0	7,7	6,2	4,5	2,5					
	2152	3,60	4	14,4	14,3	13,6	12,6	11,5	10,3	9,0	7,6	5,9	3,9	1,8				
FLCG 80-4T	396	0,74	1	3,7	3,5	3,2	2,9	2,6	2,1	1,7	1,2	0,6						
	439	0,86	2	4,0	3,8	3,6	3,3	3,0	2,6	2,1	1,6	1,0						
	497	1,04	3	4,2	4,0	3,8	3,6	3,3	2,9	2,4	1,9	1,3						
	530	1,32	4	4,3	4,2	4,1	3,9	3,6	3,2	2,7	2,2	1,6	0,9					
FLCG 80-8T	649	1,05	1	4,2	3,9	3,5	3,0	2,6	2,2	1,7	1,1	0,6						
	774	1,26	2	5,0	4,7	4,2	3,8	3,3	2,8	2,3	1,7	1,1						
	888	1,48	3	5,7	5,4	4,9	4,3	3,8	3,4	2,8	2,3	1,6	0,9					
	1043	1,98	4	6,4	6,2	5,7	5,1	4,6	4,0	3,5	2,9	2,3	1,5					
FLCG 80-10T	839	1,34	1	5,7	5,2	4,8	4,4	4,0	3,5	3,0	2,4	1,8	1,2					
	987	1,58	2	6,7	6,2	5,7	5,3	4,9	4,4	3,8	3,2	2,6	1,9	1,2				
	1109	1,79	3	7,4	6,9	6,5	6,1	5,6	5,1	4,6	3,9	3,3	2,6	1,8				
	1259	2,12	4	8,4	7,8	7,4	7,0	6,5	6,0	5,4	4,8	4,1	3,3	2,5	1,6			
FLCG 80-12T	1380	2,15	1	8,6	8,4	7,9	7,2	6,6	6,0	5,4	4,8	4,2	3,3	2,5	1,6			
	1553	2,46	2	9,9	9,5	9,0	8,4	7,8	7,2	6,6	5,9	5,2	4,4	3,5	2,6	1,8		
	1739	2,77	3	10,8	10,3	9,8	9,3	8,8	8,2	7,5	6,8	6,1	5,3	4,4	3,5	2,6		
	1931	3,24	4	11,6	11,2	10,7	10,3	9,8	9,2	8,5	7,8	7,0	6,2	5,3	4,3	3,3		
FLCG 80-15T	1780	2,84	1	10,2	9,5	9,0	8,4	7,8	7,2	6,5	5,8	5,0	4,3	3,5	2,7	1,8		
	2117	3,36	2	11,5	11,0	10,5	10,0	9,4	8,8	8,2	7,5	6,7	5,9	5,1	4,2	3,3		
	2463	3,89	3	12,7	12,2	11,8	11,3	10,8	10,3	9,7	9,0	8,3	7,5	6,7	5,8	4,8	2,8	
	2735	4,92	4	13,9	13,5	13,1	12,7	12,2	11,7	11,2	10,6	10,0	9,2	8,4	7,5	6,6	4,4	2,1

Performances according to standards ISO 9906 - Annex A.

flcgt-2-2p50S-en_b_th

LOWARA
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FLCG40..T - FLCG50..T SERIES (TWIN VERSION, THREE-PHASE) HYDRAULIC PERFORMANCE TABLE (PARALLEL OPERATION)

PUMP TYPE 400V 50Hz	MAXIMUM ABSORBED POWER W*	MAXIMUM ABSORBED CURRENT A*	SPEED	Q = DELIVERY														
				l/s 0	0,6	1,1	1,7	2,2	2,8	3,9	5,0	6,1	7,2	8,3	9,4	10,6	11,7	12,8
				m³/h 0	2	4	6	8	10	14	18	22	26	30	34	38	42	46
				H = TOTAL HEAD METRES COLUMN OF WATER														
** FLCG 40-5T	100	0,17	1	3,6	3,3	3,1	2,7	2,3	1,8	0,8								
	114	0,20	2	3,7	3,6	3,4	3,1	2,7	2,2	1,2								
	129	0,25	3	3,9	3,8	3,6	3,4	3,0	2,6	1,5	0,3							
	143	0,33	4	4,0	3,9	3,8	3,6	3,3	2,9	1,8	0,5							
FLCG 40-7T	183	0,30	1	6,4	5,7	5,1	4,6	4,0	3,3	1,8	0,5							
	215	0,36	2	6,8	6,2	5,8	5,3	4,7	4,1	2,6	1,1							
	249	0,44	3	7,2	6,7	6,3	6,0	5,5	4,9	3,4	1,8	0,1						
	265	0,57	4	7,4	7,0	6,8	6,5	6,1	5,6	4,2	2,5	0,7						
FLCG 40-10T	468	0,78	1	7,3	7,0	6,6	6,2	5,7	5,2	4,1	3,1	2,1	1,1	0,2				
	575	0,93	2	7,9	7,7	7,4	7,0	6,7	6,3	5,3	4,3	3,3	2,2	1,2				
	666	1,06	3	8,5	8,3	8,1	7,8	7,5	7,2	6,4	5,5	4,5	3,4	2,3	1,2	0,2		
	731	1,22	4	8,9	8,8	8,6	8,4	8,1	7,8	7,2	6,4	5,5	4,5	3,4	2,2	1,0		
FLCG 50-5T	224	0,44	1	4,3	4,2	4,0	3,7	3,4	3,1	2,5	1,8	1,1	0,3					
	266	0,51	2	4,6	4,5	4,4	4,2	4,0	3,8	3,2	2,6	1,8	1,0	0,1				
	308	0,62	3	4,9	4,8	4,7	4,6	4,4	4,3	3,8	3,2	2,5	1,7	0,8				
	335	0,78	4	5,1	5,0	4,9	4,8	4,7	4,5	4,1	3,6	2,9	2,1	1,3	0,3			
FLCG 50-8T	440	0,71	1	7,0	6,9	6,6	6,4	6,0	5,7	5,0	4,3	3,6	2,9	2,2	1,5	0,7		
	514	0,83	2	7,7	7,6	7,4	7,2	7,0	6,7	6,0	5,3	4,6	3,9	3,2	2,4	1,6	0,8	
	579	0,94	3	8,3	8,3	8,2	8,0	7,8	7,5	7,0	6,4	5,7	5,0	4,2	3,5	2,6	1,7	0,8
	626	1,07	4	8,7	8,7	8,6	8,5	8,3	8,1	7,7	7,1	6,5	5,8	5,1	4,3	3,5	2,6	1,6
FLCG 50-10T	479	0,78	1	7,3	7,0	6,6	6,2	5,9	5,5	4,7	4,0	3,3	2,5	1,7	0,9			
	581	0,98	2	8,1	7,9	7,6	7,3	7,0	6,7	6,0	5,3	4,5	3,7	2,8	1,9	0,9		
	674	1,09	3	8,8	8,7	8,5	8,2	7,9	7,6	6,9	6,2	5,5	4,7	3,9	2,9	1,9	0,8	
	767	1,31	4	9,6	9,5	9,3	9,1	8,9	8,6	8,0	7,4	6,7	6,0	5,1	4,1	3,0	1,9	0,7

* Electric data refer to single motor.

flcgt-1-2p50P-en_b_th

** Performances according to standards EN 1151-1.

Performances according to standards ISO 9906 - Annex A.

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FLCG65..T - FLCG80..T SERIES (TWIN VERSION, THREE-PHASE)
HYDRAULIC PERFORMANCE TABLE
(PARALLEL OPERATION)

PUMP TYPE 400V 50Hz	MAXIMUM ABSORBED POWER W*	MAXIMUM ABSORBED CURRENT A*	SPEED	Q = DELIVERY														
				l/s 0	1,4	2,8	4,2	5,6	6,9	8,3	11,1	13,9	16,7	19,4	25,0	30,6	36,1	41,7
				m³/h 0	5	10	15	20	25	30	40	50	60	70	90	110	130	150
				H = TOTAL HEAD METRES COLUMN OF WATER														
FLCG 65-7T	475	0,77	1	4,7	4,4	4,0	3,5	3,1	2,6	2,2	1,3							
	578	0,93	2	5,3	5,0	4,6	4,2	3,7	3,2	2,7	1,8							
	668	1,08	3	5,9	5,7	5,4	5,0	4,6	4,1	3,6	2,6	1,5	0,4					
	807	1,39	4	6,3	6,2	5,9	5,5	5,0	4,5	4,0	3,0	1,9	0,6					
FLCG 65-10T	673	1,08	1	6,3	6,2	5,7	5,1	4,5	3,9	3,4	2,4	1,3	0,2					
	803	1,29	2	7,2	7,1	6,7	6,2	5,6	5,1	4,5	3,3	2,1	0,9					
	930	1,52	3	7,8	7,7	7,4	7,0	6,5	5,9	5,3	4,1	2,9	1,6	0,2				
	1079	2,02	4	8,5	8,5	8,2	7,8	7,3	6,8	6,2	5,1	3,8	2,4	0,9				
FLCG 65-12T	863	1,42	1	7,9	7,5	7,0	6,5	5,9	5,4	4,8	3,8	2,6	1,4	0,3				
	1044	1,68	2	8,8	8,5	8,1	7,6	7,2	6,7	6,1	5,0	3,9	2,6	1,3				
	1205	1,95	3	9,4	9,2	8,9	8,5	8,0	7,6	7,1	6,0	4,8	3,6	2,2				
	1353	2,30	4	10,1	10,0	9,7	9,4	9,0	8,5	8,1	7,1	5,9	4,7	3,3				
FLCG 65-16T	1511	2,40	1	11,6	11,4	10,9	10,4	9,8	9,1	8,5	7,2	5,9	4,4	2,8				
	1760	2,80	2	12,7	12,6	12,3	11,8	11,3	10,7	10,0	8,8	7,5	6,0	4,4	0,6			
	2002	3,16	3	13,5	13,6	13,4	13,0	12,5	11,9	11,3	10,1	8,8	7,5	5,9	2,0			
	2152	3,60	4	14,4	14,5	14,3	14,0	13,6	13,1	12,5	11,4	10,1	8,8	7,3	3,5			
FLCG 80-4T	396	0,74	1	3,7	3,6	3,5	3,3	3,2	3,0	2,9	2,4	2,0	1,4	0,9				
	439	0,86	2	4,0	3,8	3,7	3,6	3,5	3,4	3,3	2,9	2,4	1,8	1,2				
	497	1,04	3	4,2	4,1	4,0	3,9	3,8	3,7	3,6	3,2	2,7	2,2	1,5				
	530	1,32	4	4,3	4,2	4,2	4,1	4,0	3,9	3,8	3,4	3,0	2,4	1,9	0,2			
FLCG 80-8T	649	1,05	1	4,2	4,1	3,9	3,6	3,4	3,1	2,9	2,4	1,9	1,3	0,6				
	774	1,26	2	5,0	4,9	4,7	4,4	4,1	3,9	3,6	3,1	2,6	1,9	1,2				
	888	1,48	3	5,7	5,6	5,4	5,1	4,8	4,5	4,2	3,6	3,1	2,5	1,7	0,4			
	1043	1,98	4	6,4	6,3	6,1	5,9	5,6	5,3	4,9	4,3	3,7	3,1	2,4	0,8			
FLCG 80-10T	839	1,34	1	5,7	5,3	5,1	4,8	4,5	4,2	3,9	3,2	2,5	1,7	0,7				
	987	1,58	2	6,7	6,3	6,0	5,7	5,4	5,2	4,8	4,1	3,3	2,4	1,4				
	1109	1,79	3	7,4	7,1	6,8	6,5	6,2	5,9	5,5	4,8	4,0	3,1	2,1				
	1259	2,12	4	8,4	8,0	7,6	7,4	7,1	6,8	6,5	5,7	4,8	3,9	2,8				
FLCG 80-12T	1380	2,15	1	8,6	8,6	8,4	8,1	7,8	7,5	7,1	6,4	5,8	5,2	4,5	2,8	1,2		
	1553	2,46	2	9,9	9,7	9,4	9,2	8,9	8,6	8,3	7,7	7,0	6,3	5,6	3,9	2,0		
	1739	2,77	3	10,8	10,5	10,3	10,0	9,7	9,5	9,2	8,6	8,0	7,3	6,5	4,8	2,8	0,8	
	1931	3,24	4	11,6	11,4	11,2	10,9	10,7	10,4	10,2	9,6	9,0	8,3	7,5	5,7	3,6	1,4	
FLCG 80-15T	1780	2,84	1	10,2	9,8	9,5	9,2	8,9	8,6	8,3	7,6	6,8	6,0	5,2	3,5	1,5		
	2117	3,36	2	11,5	11,2	10,9	10,7	10,4	10,1	9,8	9,2	8,5	7,7	6,9	5,1	3,1	0,9	
	2463	3,89	3	12,7	12,4	12,2	11,9	11,7	11,4	11,2	10,6	9,9	9,2	8,5	6,7	4,6	2,3	
	2735	4,92	4	13,9	13,7	13,4	13,2	13,0	12,8	12,5	12,0	11,5	10,8	10,1	8,4	6,3	3,9	1,3

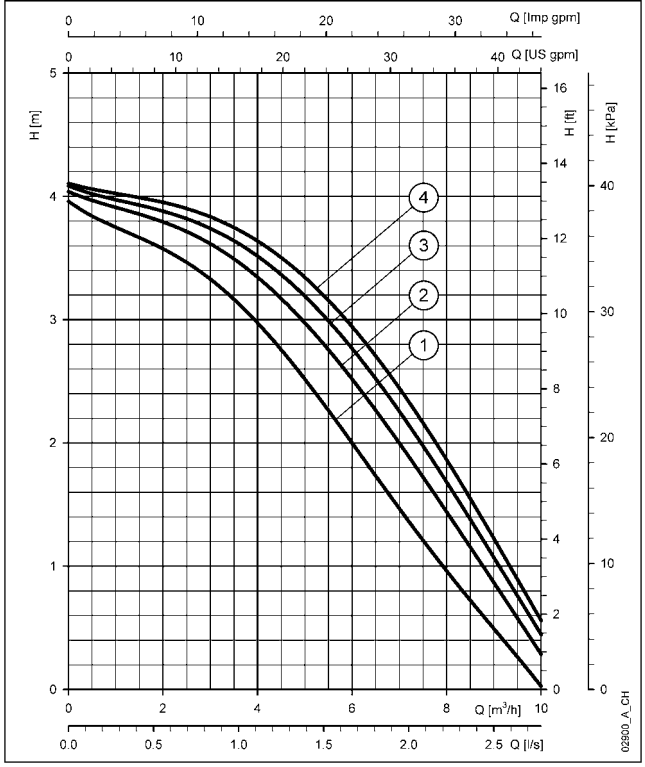
* Electric data refer to single motor.

flcgt-2-2p50P-en_b_th

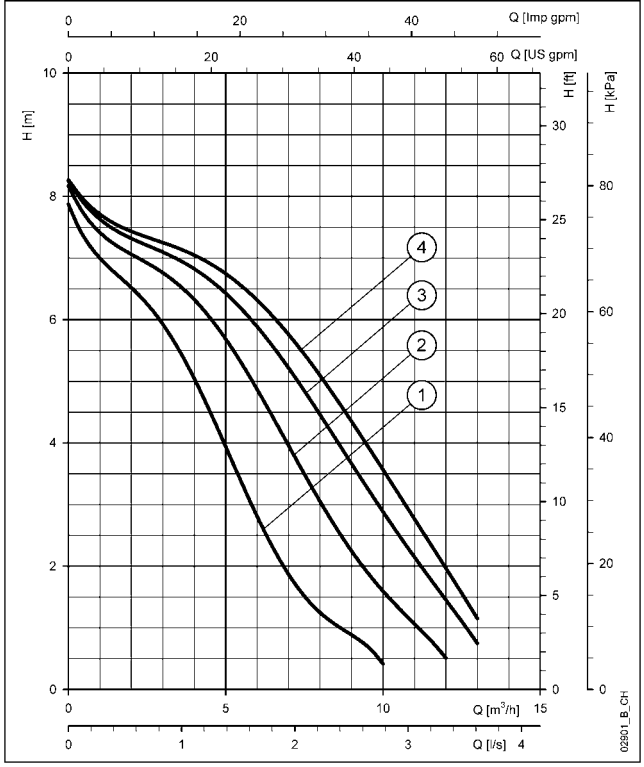
Performances according to standards ISO 9906 - Annex A.

FLC SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

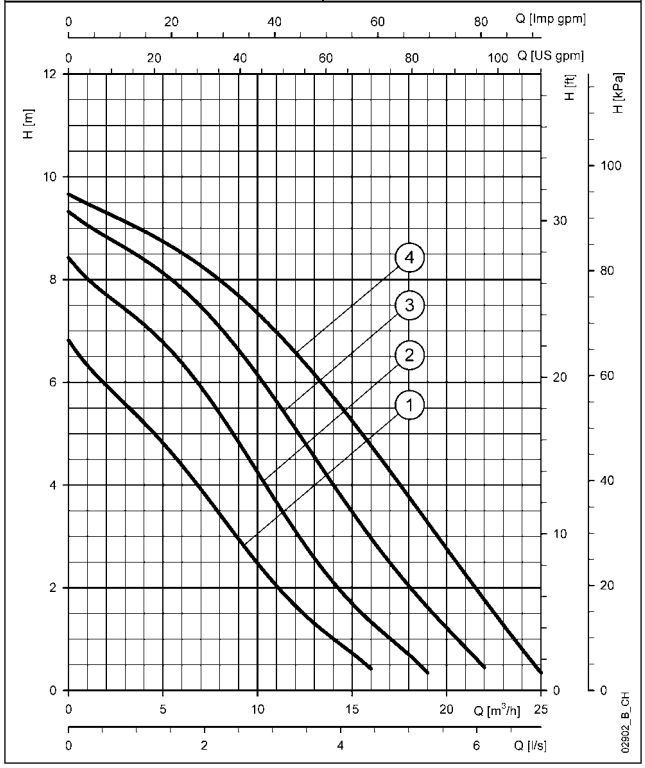
FLC 40-5 | EN 1151-1



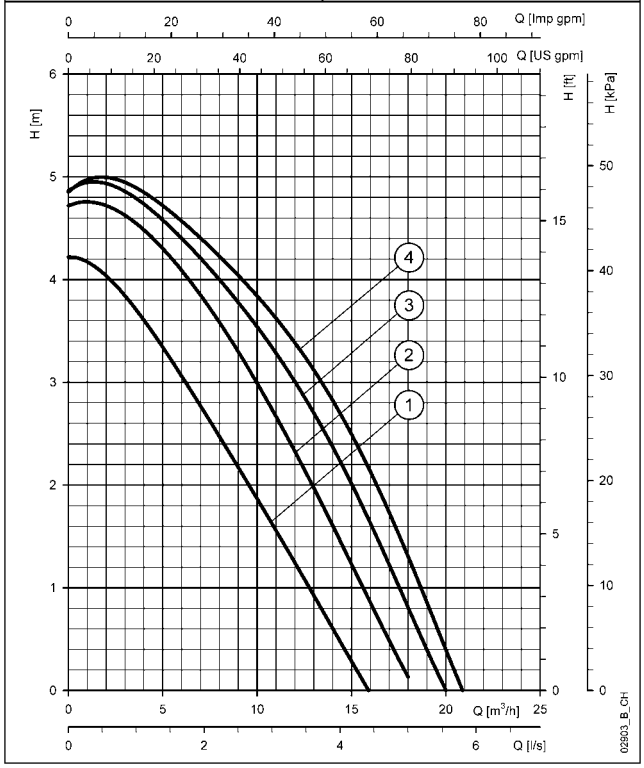
FLC 40-7 | ISO 9906 - Annex A



FLC 40-10 | ISO 9906 - Annex A



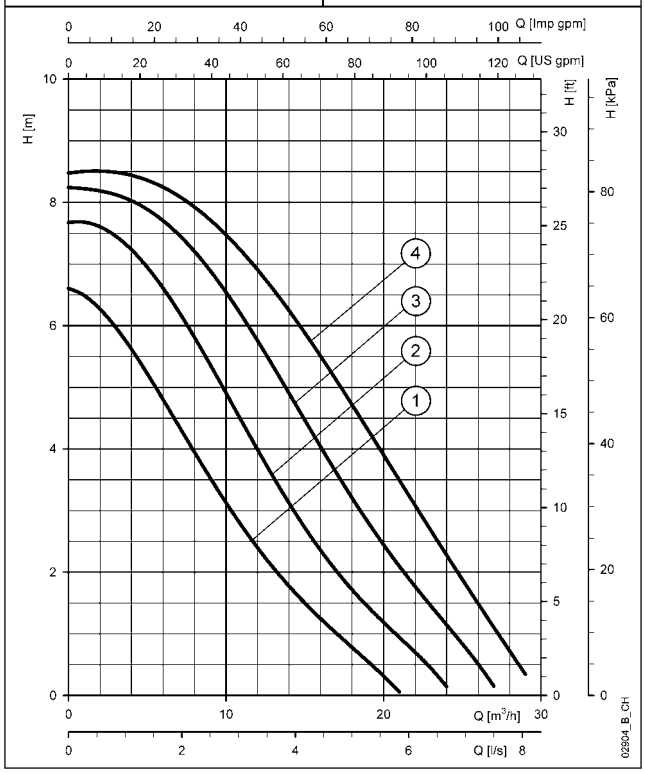
FLC 50-5 | ISO 9906 - Annex A



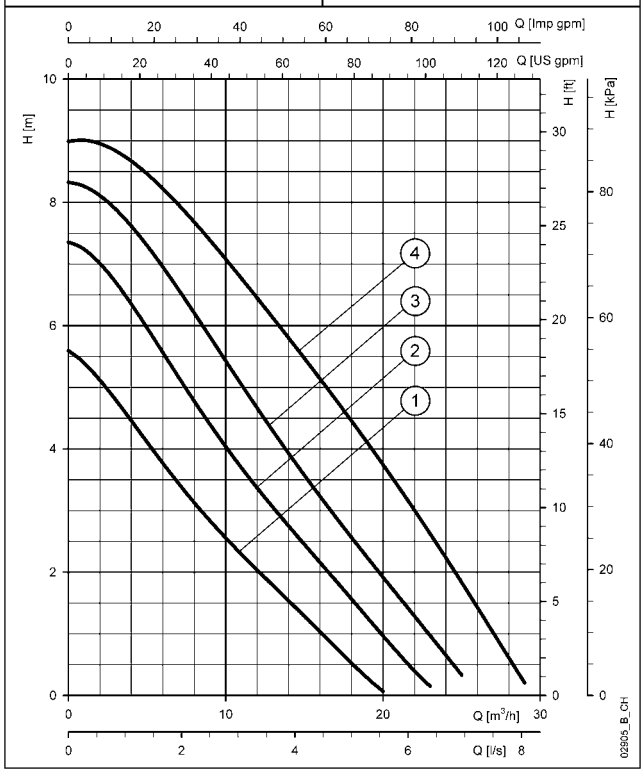
These performances are valid for liquids with density $\rho = 1.0$ Kg/dm^3 and kinematic viscosity $\nu = 1$ mm^2/sec.

FLC SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

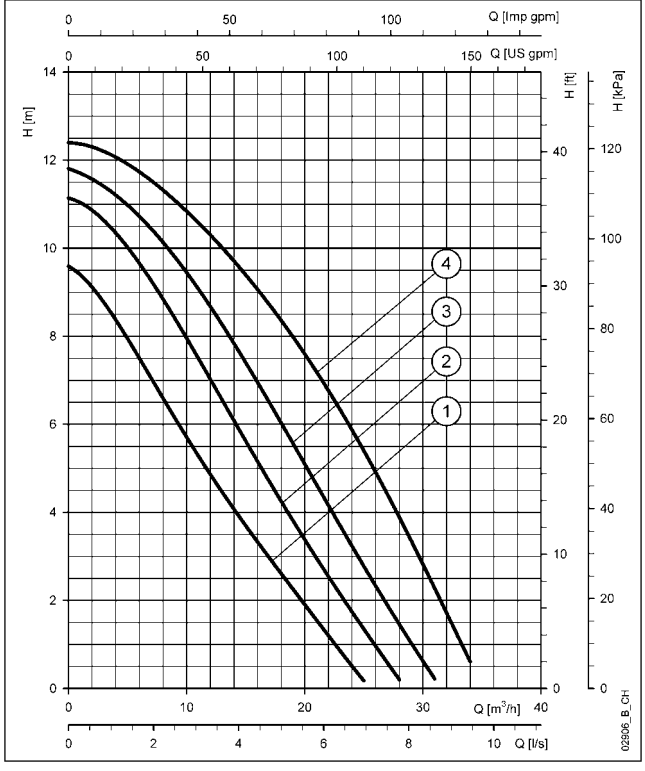
FLC 50-8 | ISO 9906 - Annex A



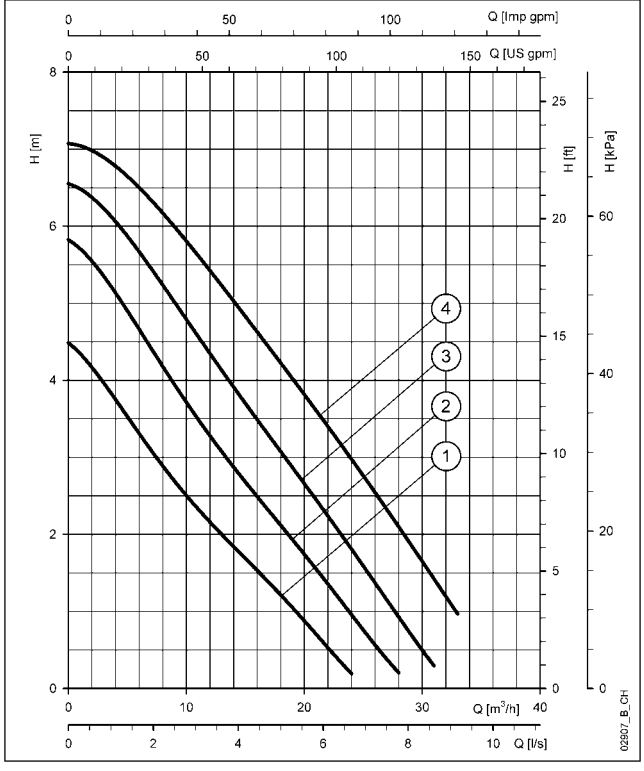
FLC 50-10 | ISO 9906 - Annex A



FLC 50-13 | ISO 9906 - Annex A



FLC 65-7 | ISO 9906 - Annex A



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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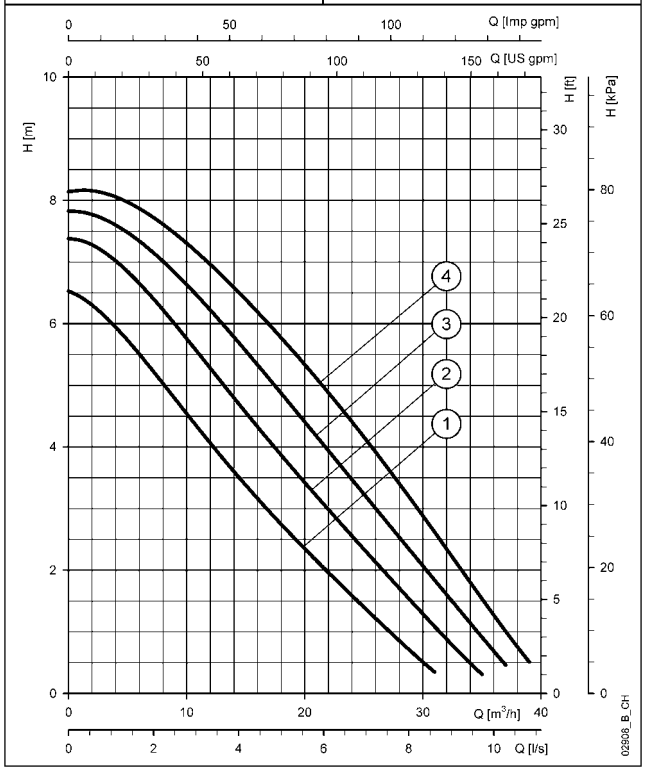
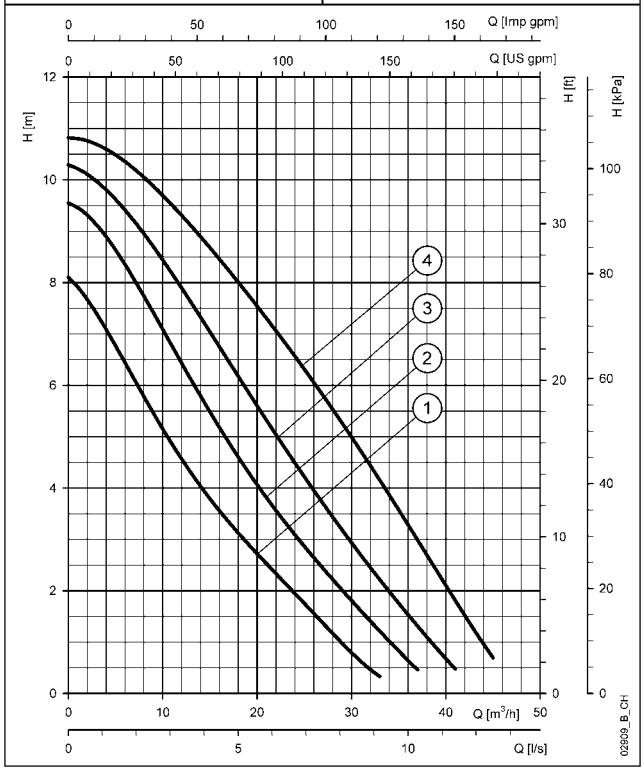
FLC SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

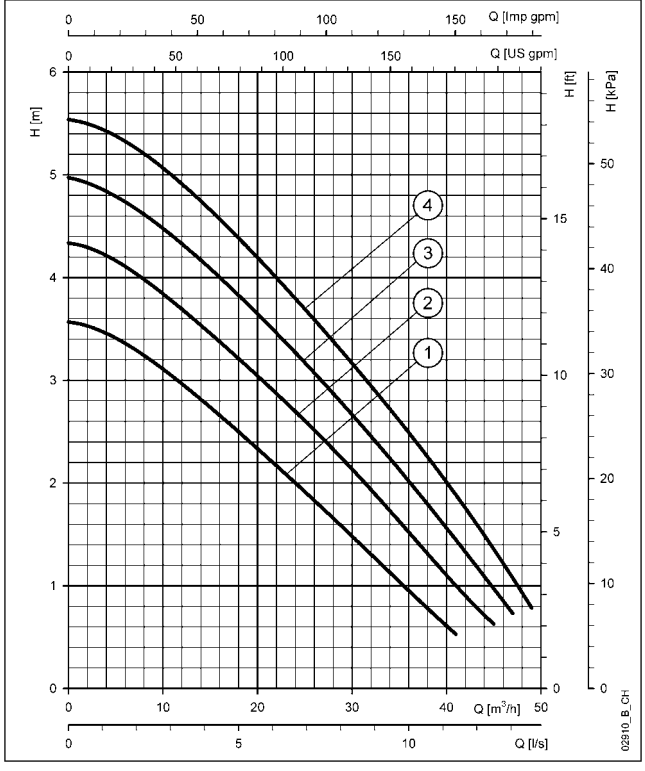
FLC 65-10 | ISO 9906 - Annex A



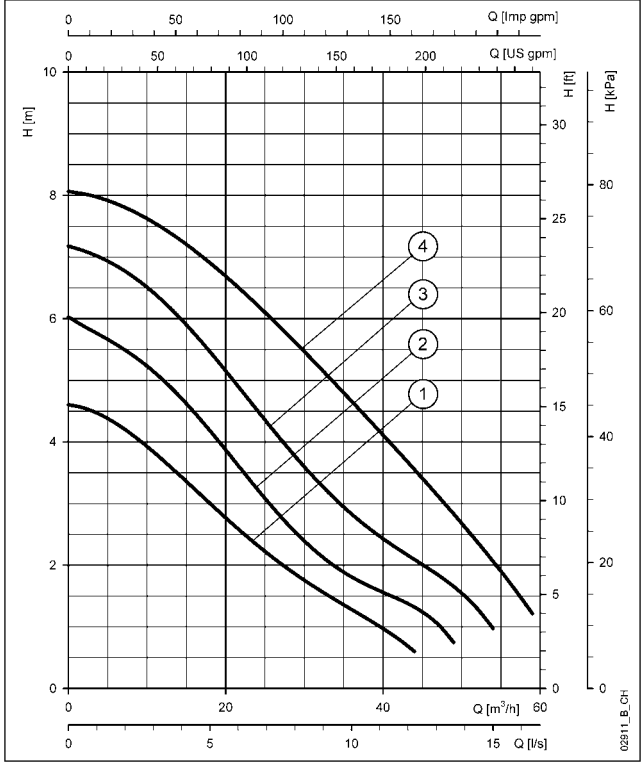
FLC 65-12 | ISO 9906 - Annex A



FLC 80-8 | ISO 9906 - Annex A



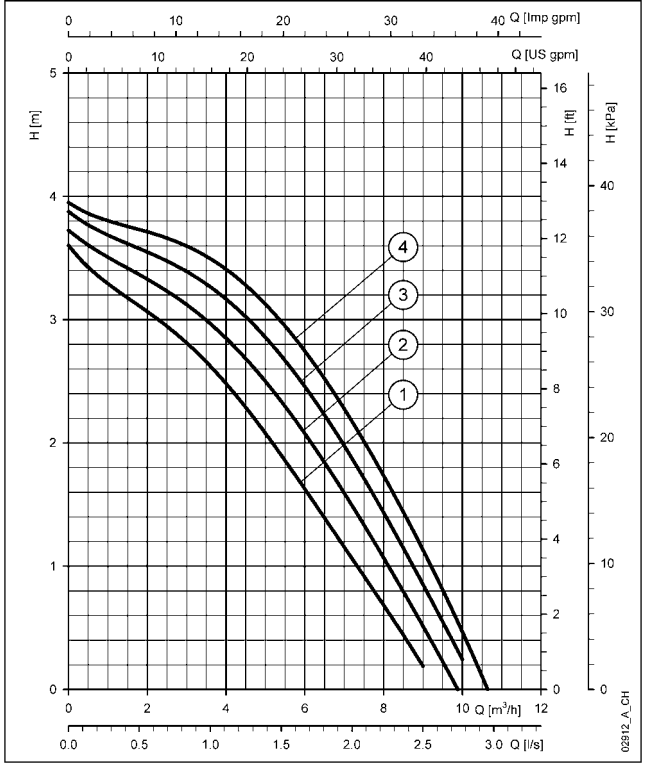
FLC 80-10 | ISO 9906 - Annex A



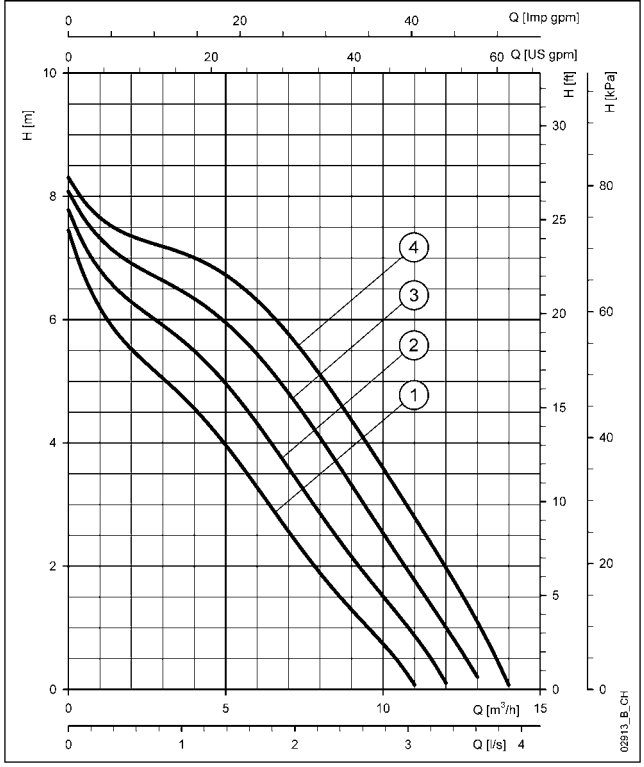
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

FLC..T SERIES
THREE-PHASE OPERATING CHARACTERISTICS

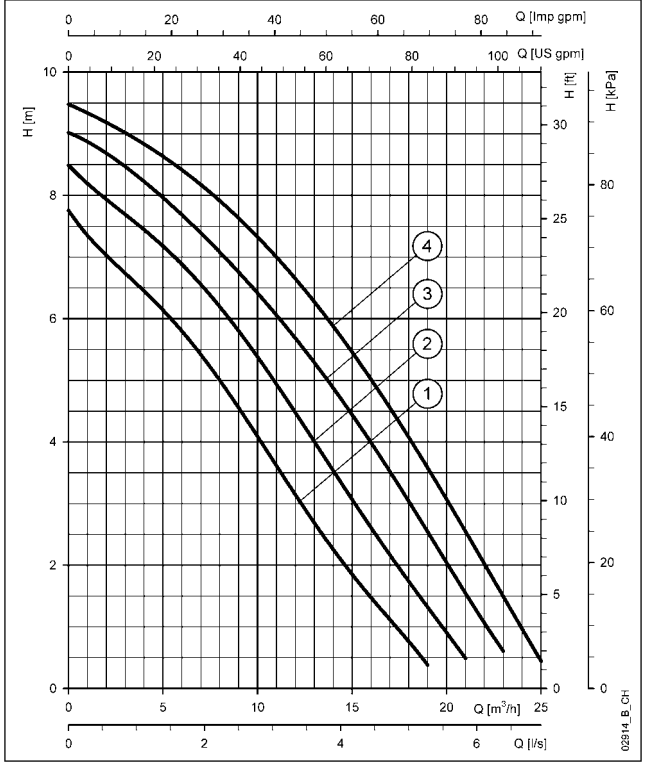
FLC 40-5T | EN 1151-1



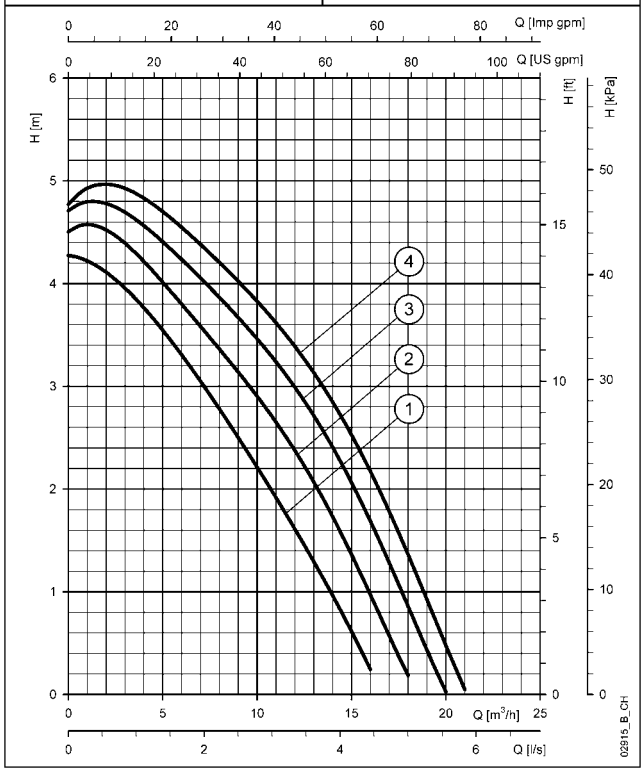
FLC 40-7T | ISO 9906 - Annex A



FLC 40-10T | ISO 9906 - Annex A



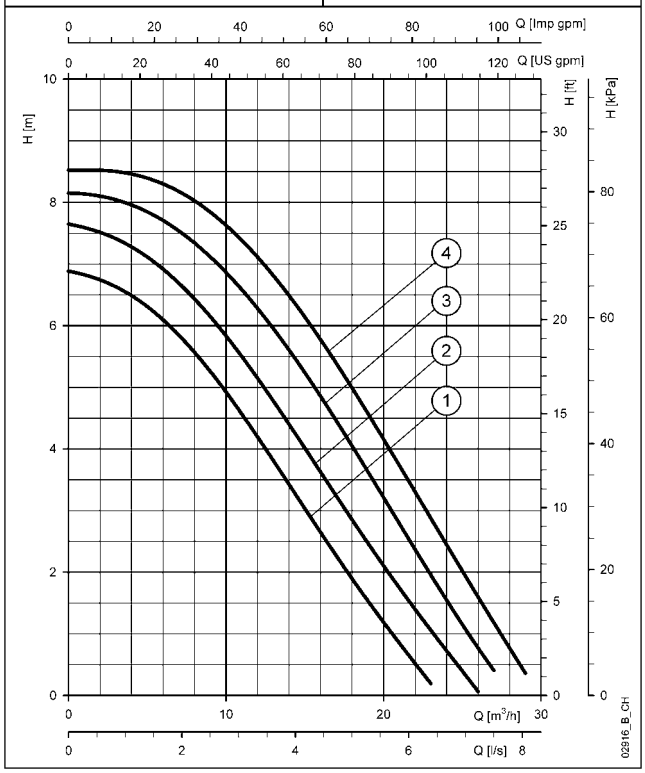
FLC 50-5T | ISO 9906 - Annex A



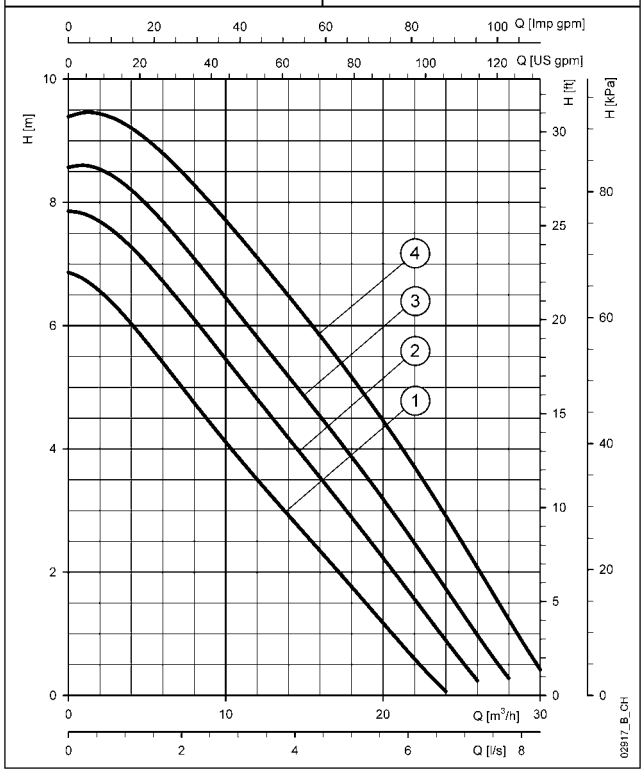
These performances are valid for liquids with density $\rho = 1.0$ Kg/dm^3 and kinematic viscosity $\nu = 1$ mm^2/sec.

FLC..T SERIES
THREE-PHASE OPERATING CHARACTERISTICS

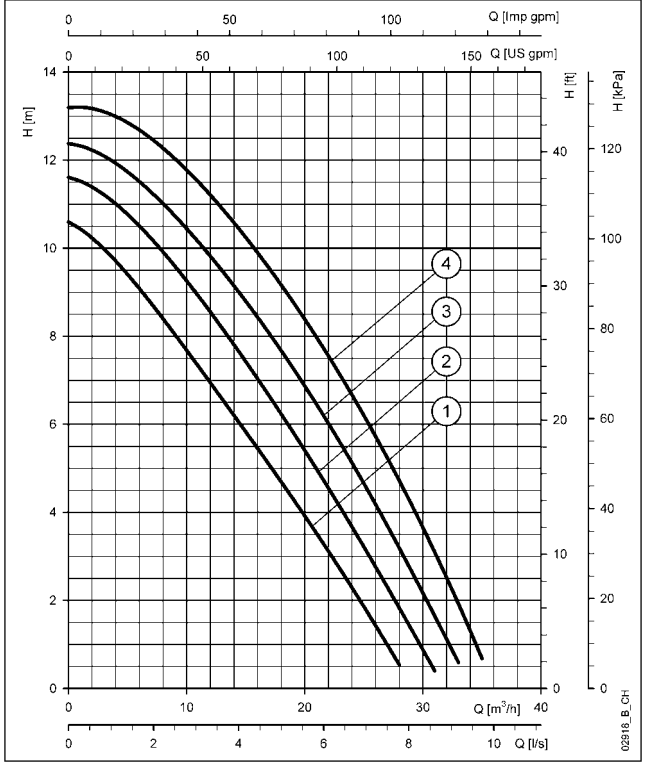
FLC 50-8T | ISO 9906 - Annex A



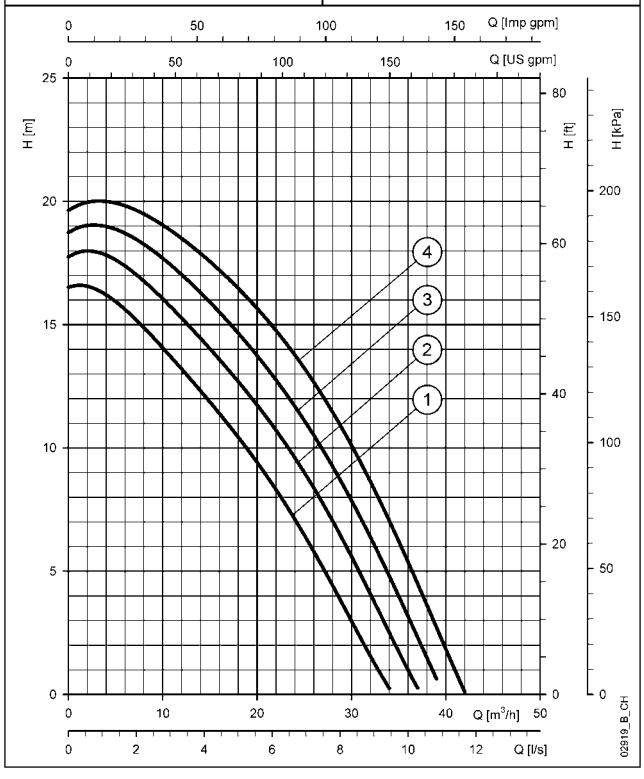
FLC 50-10T | ISO 9906 - Annex A



FLC 50-13T | ISO 9906 - Annex A



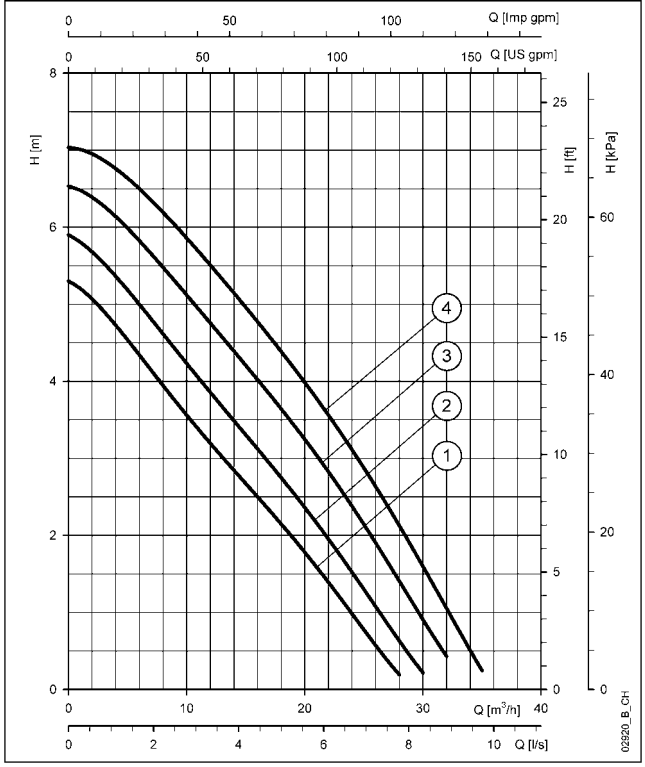
FLC 50-18T | ISO 9906 - Annex A



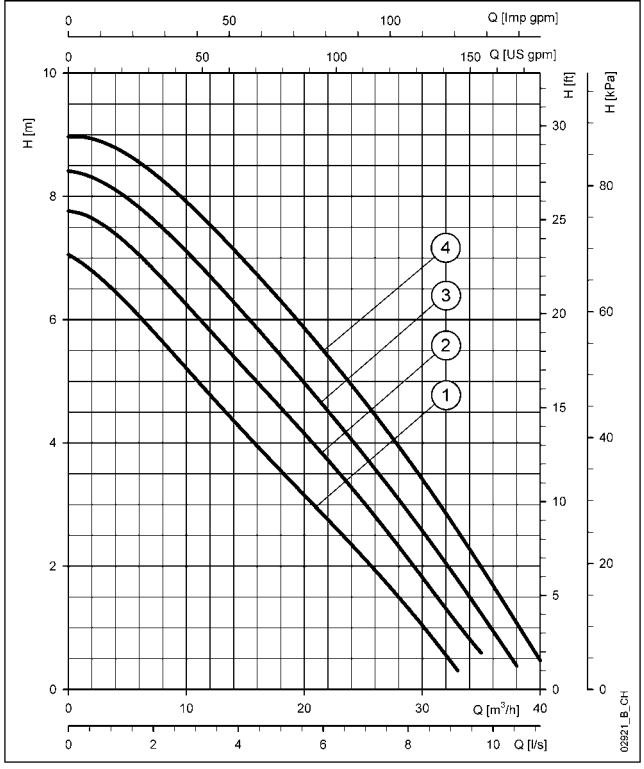
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

FLC..T SERIES
THREE-PHASE OPERATING CHARACTERISTICS

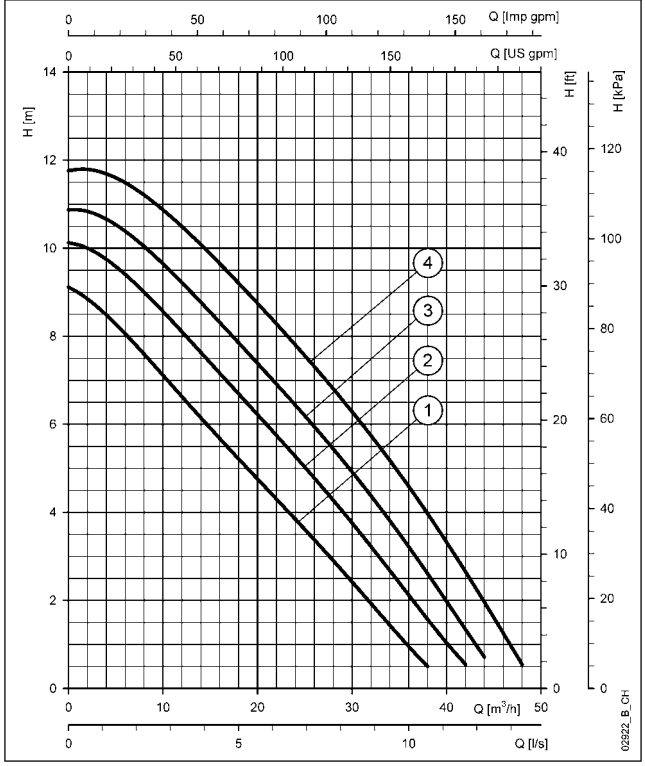
FLC 65-7T | ISO 9906 - Annex A



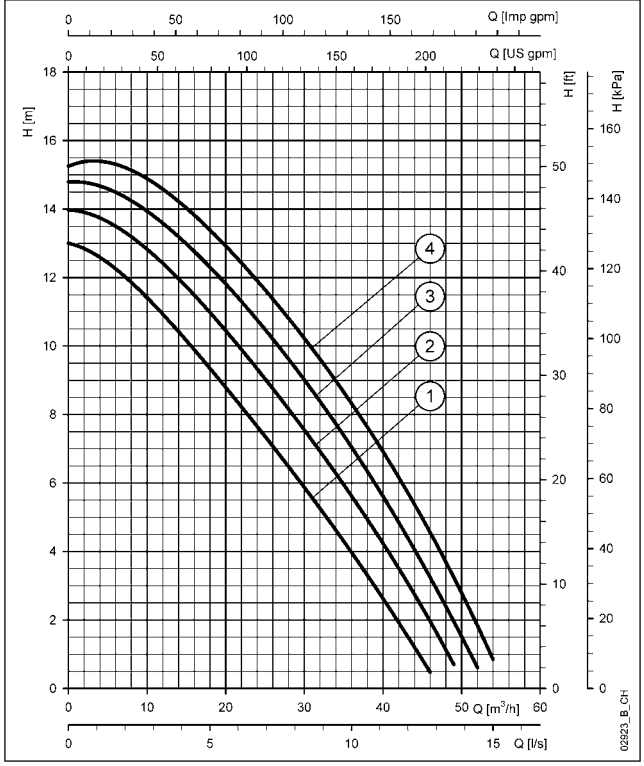
FLC 65-10T | ISO 9906 - Annex A



FLC 65-12T | ISO 9906 - Annex A



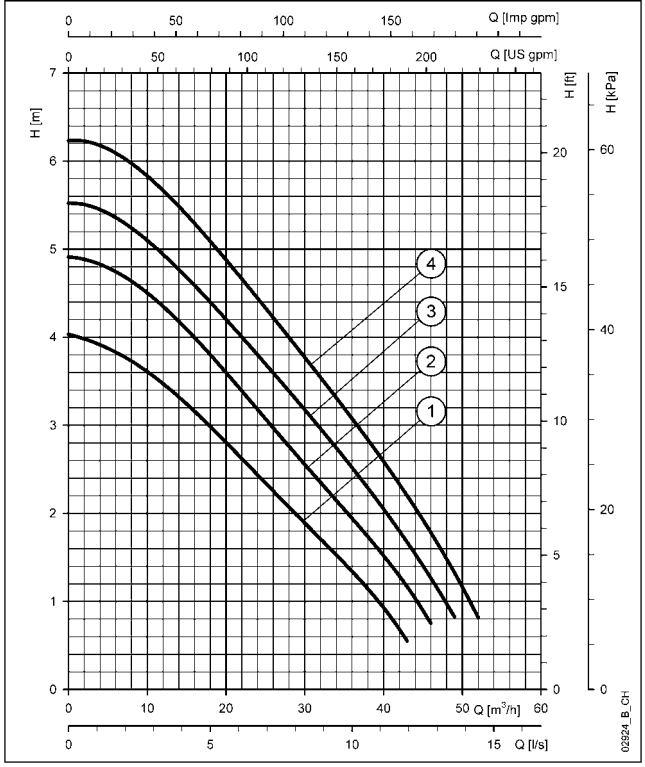
FLC 65-16T | ISO 9906 - Annex A



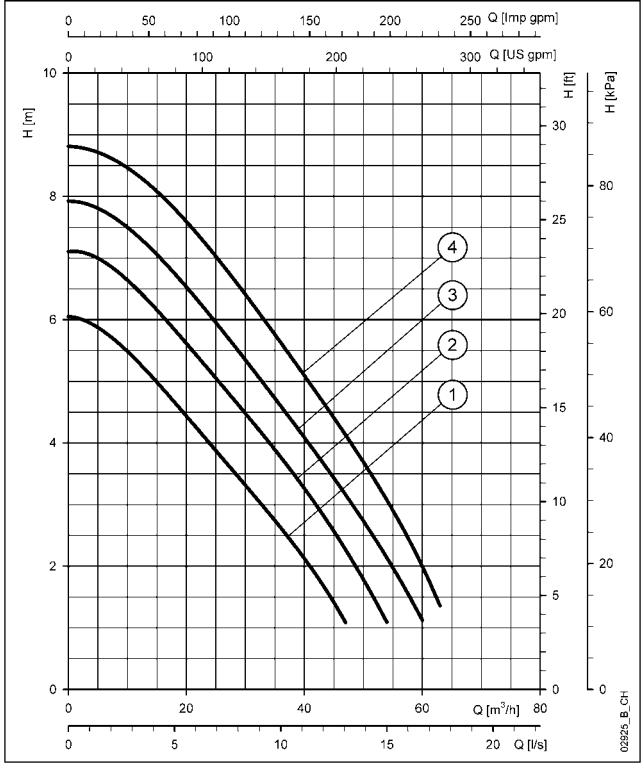
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

FLC..T SERIES
THREE-PHASE OPERATING CHARACTERISTICS

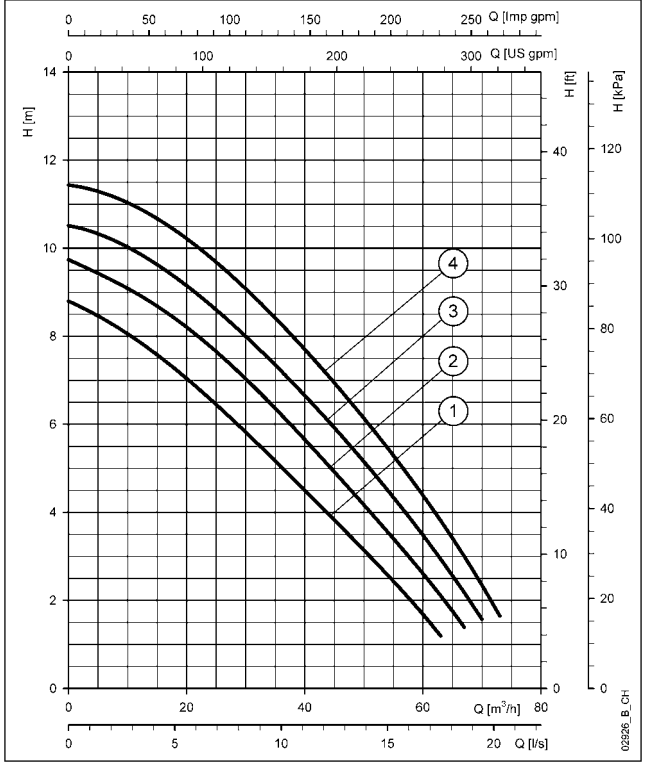
FLC 80-8T | ISO 9906 - Annex A



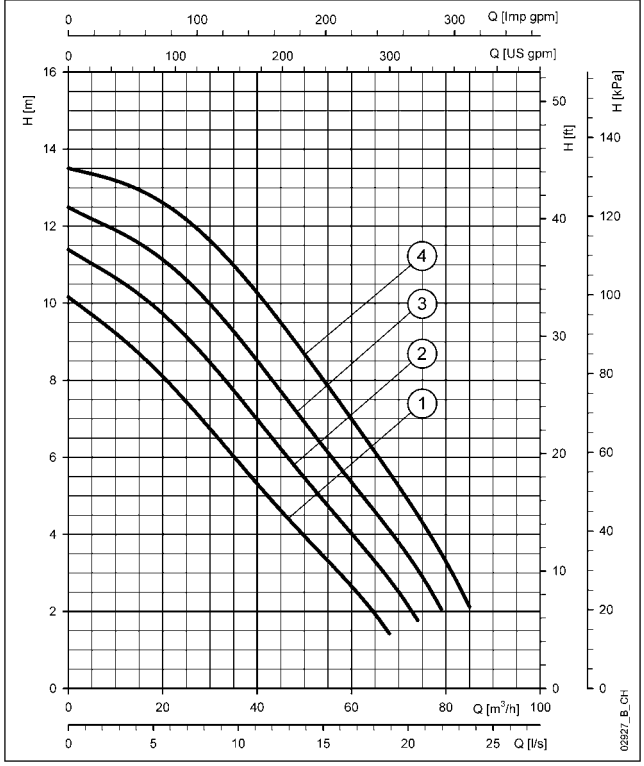
FLC 80-10T | ISO 9906 - Annex A



FLC 80-12T | ISO 9906 - Annex A



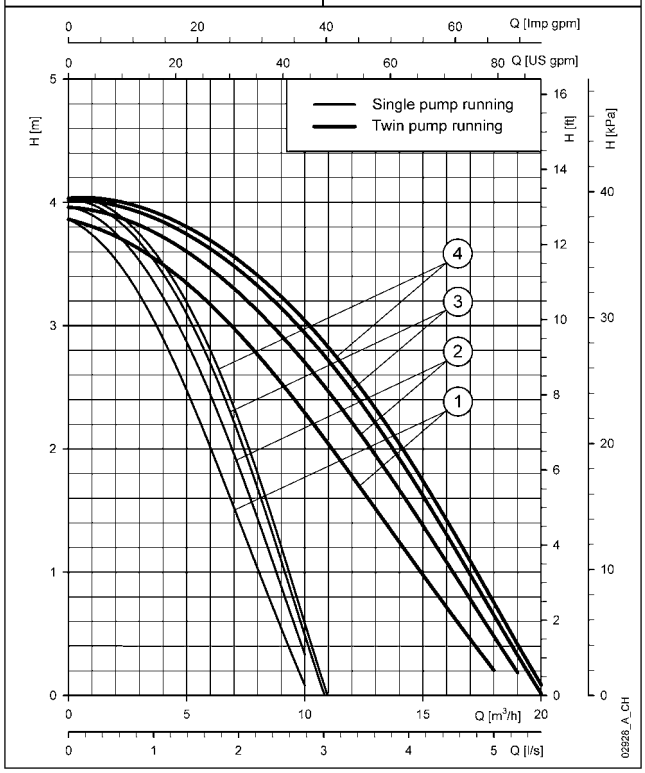
FLC 80-15T | ISO 9906 - Annex A



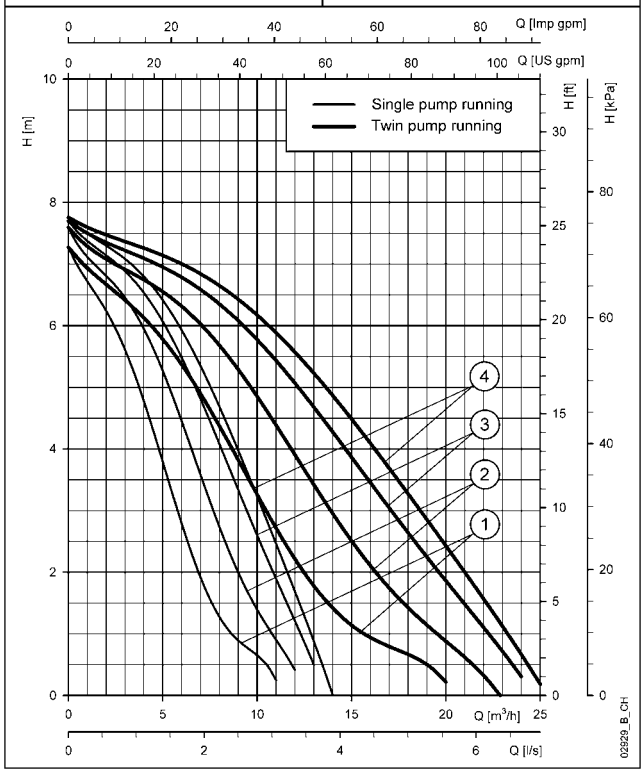
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

FLCG SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

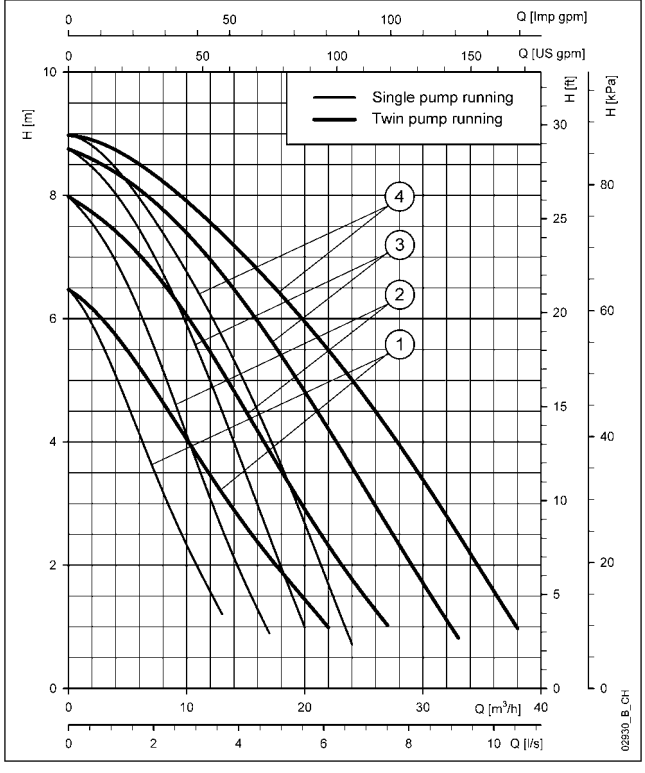
FLCG 40-5 | EN 1151-1



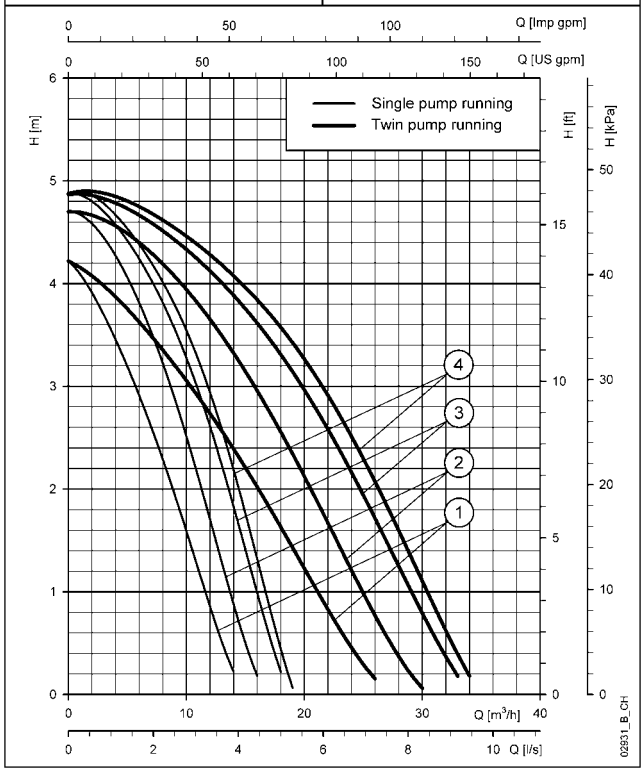
FLCG 40-7 | ISO 9906 - Annex A



FLCG 40-10 | ISO 9906 - Annex A



FLCG 50-5 | ISO 9906 - Annex A



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

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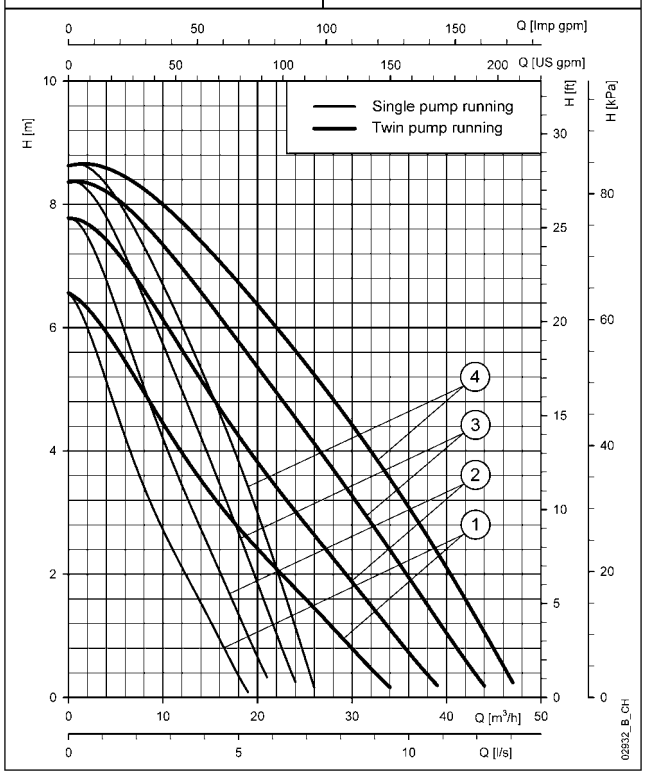
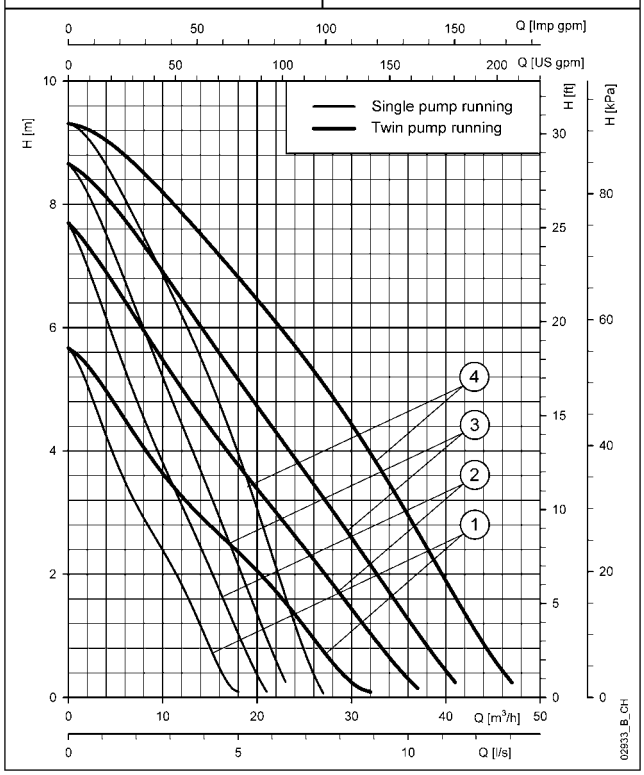
FLCG SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

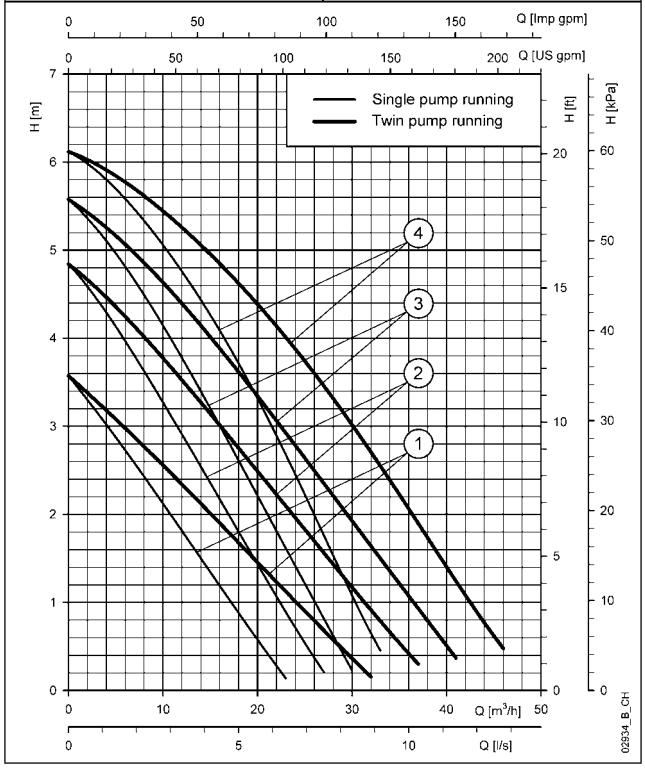
FLCG 50-8 | ISO 9906 - Annex A



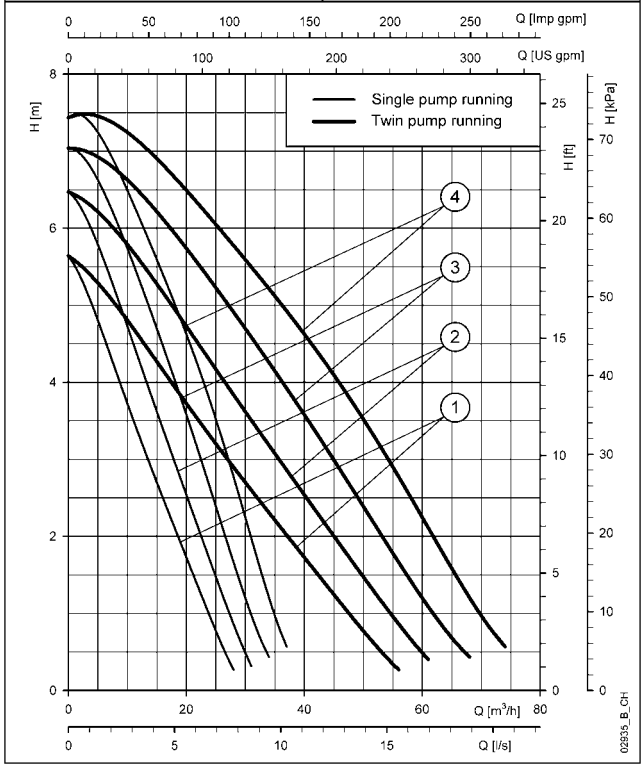
FLCG 50-10 | ISO 9906 - Annex A



FLCG 65-7 | ISO 9906 - Annex A



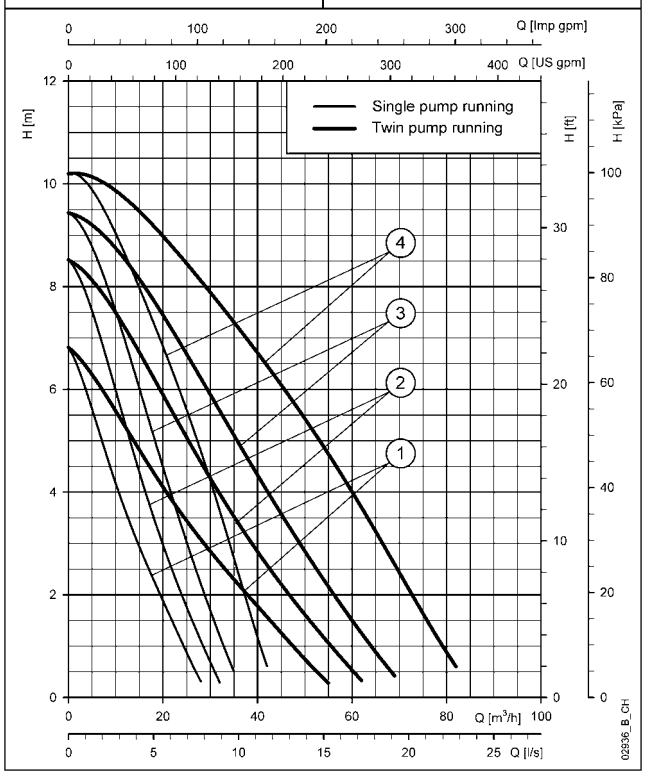
FLCG 65-10 | ISO 9906 - Annex A



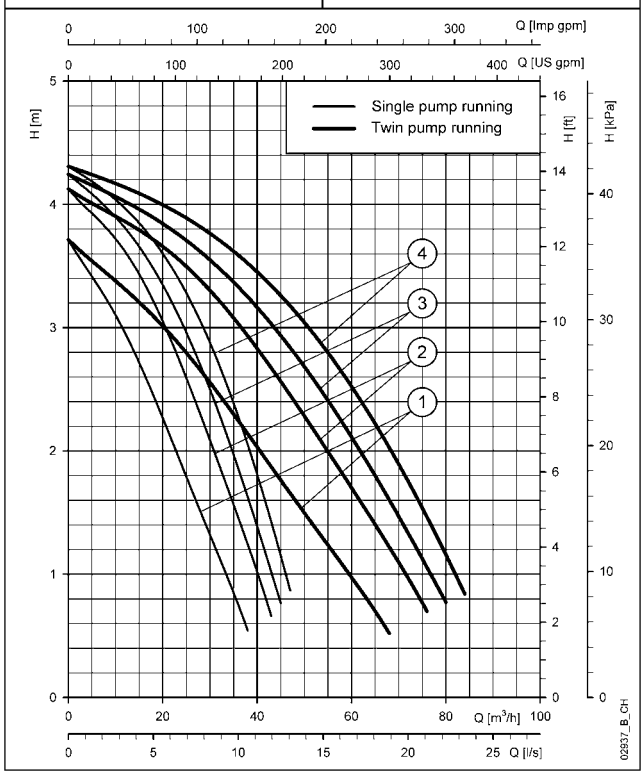
These performances are valid for liquids with density $\rho = 1.0$ Kg/dm^3 and kinematic viscosity $\nu = 1$ mm^2/sec.

FLCG SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

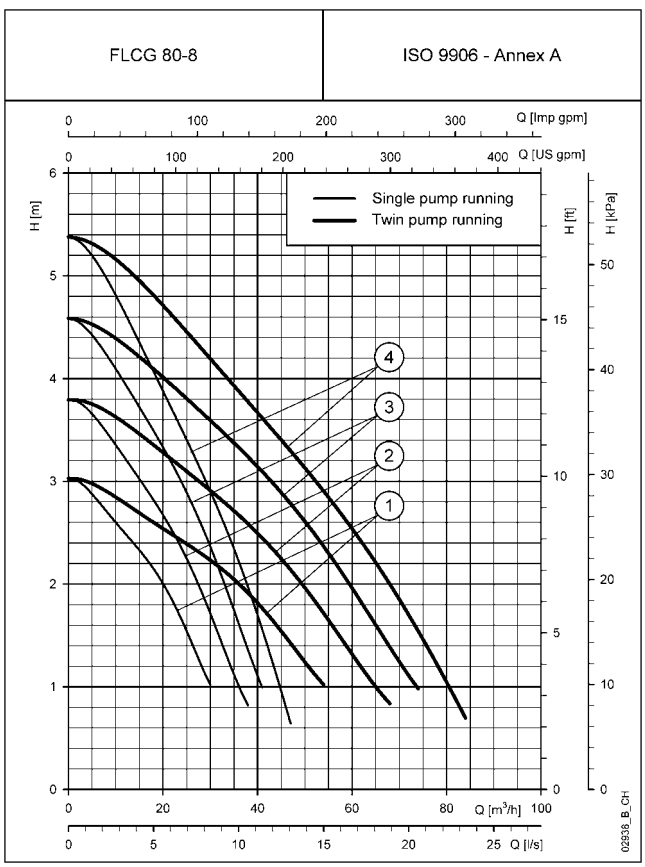
FLCG 65-12 | ISO 9906 - Annex A



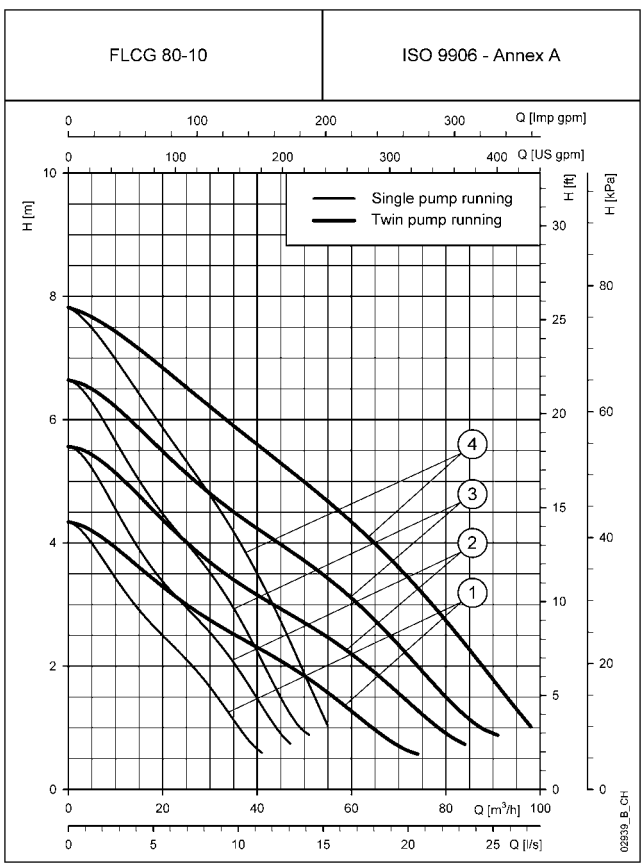
FLCG 80-4 | ISO 9906 - Annex A



FLCG 80-8 | ISO 9906 - Annex A



FLCG 80-10 | ISO 9906 - Annex A



These performances are valid for liquids with density $\rho = 1.0$ Kg/dm³ and kinematic viscosity $\nu = 1$ mm²/sec.

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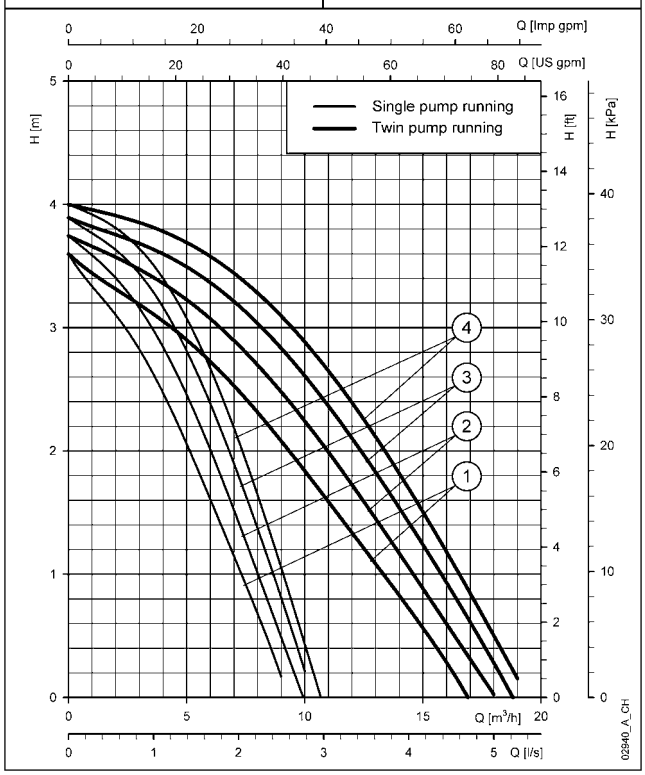
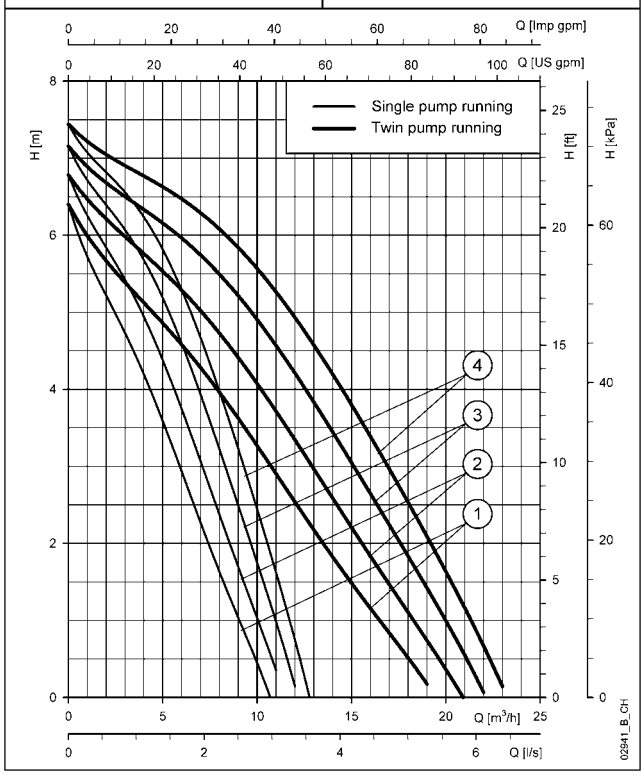
FLCG..T SERIES
THREE-PHASE OPERATING CHARACTERISTICS

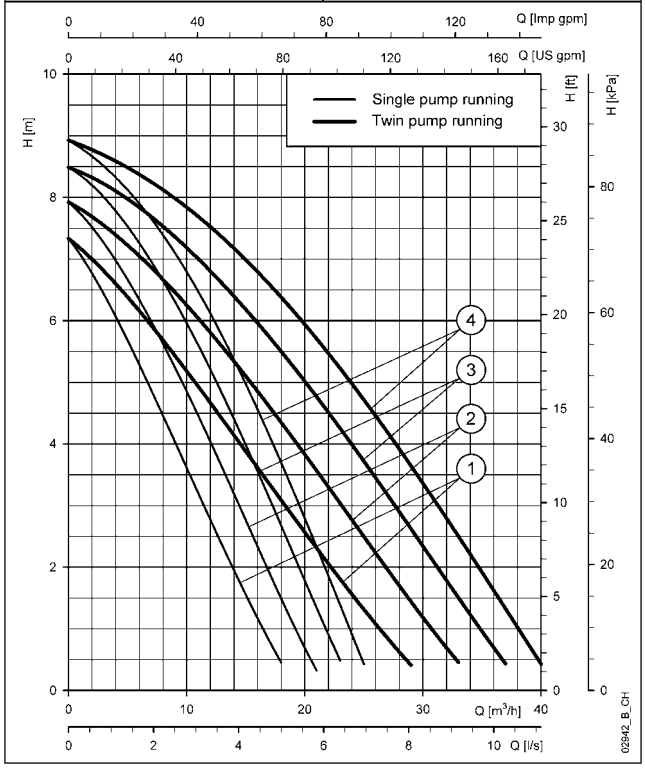
FLCG 40-5T | EN 1151-1



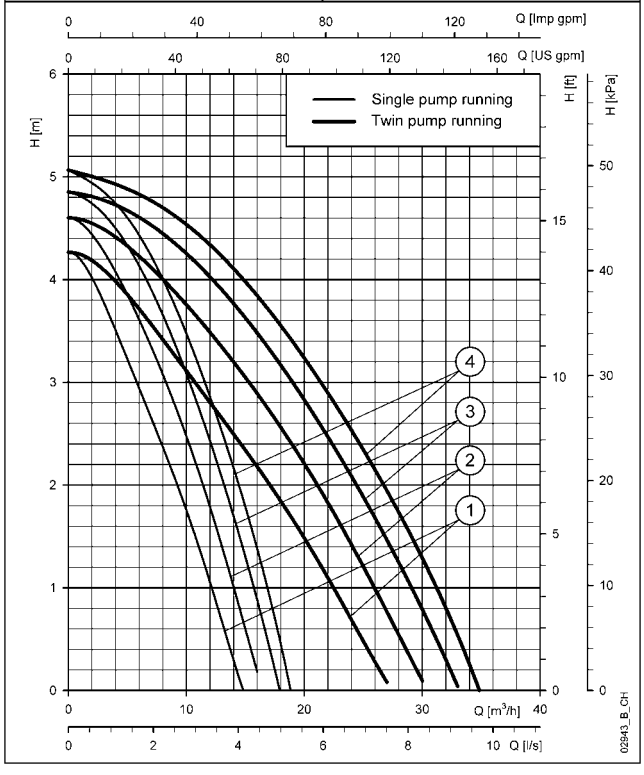
FLCG 40-7T | ISO 9906 - Annex A



FLCG 40-10T | ISO 9906 - Annex A



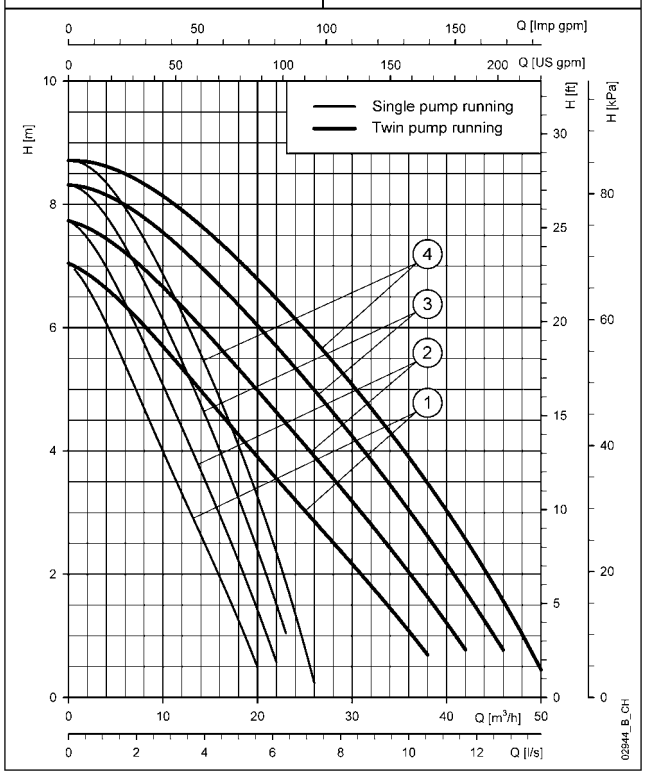
FLCG 50-5T | ISO 9906 - Annex A



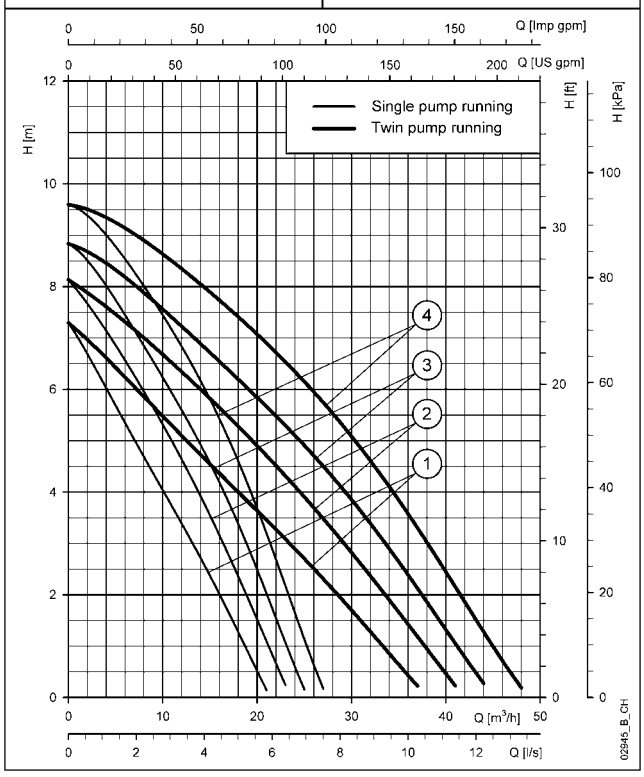
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

FLCG..T SERIES
THREE-PHASE OPERATING CHARACTERISTICS

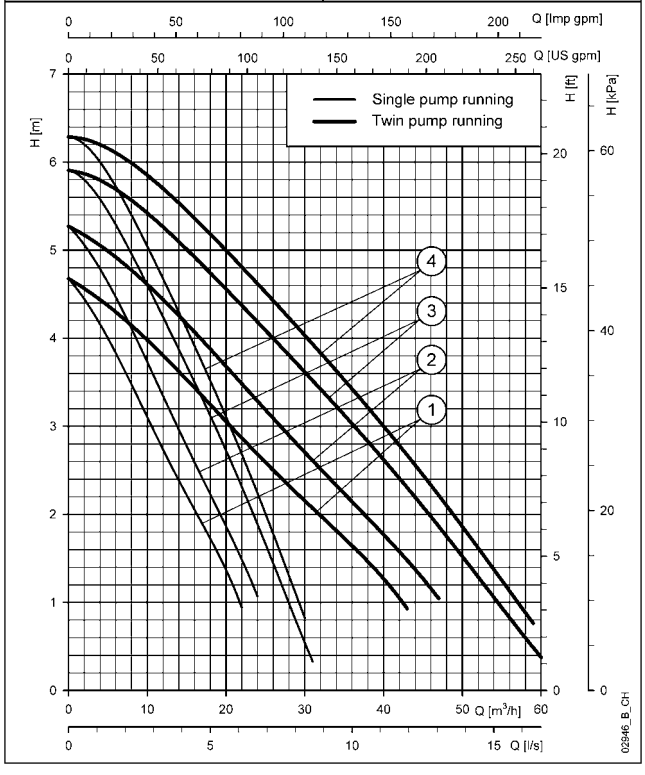
FLCG 50-8T | ISO 9906 - Annex A



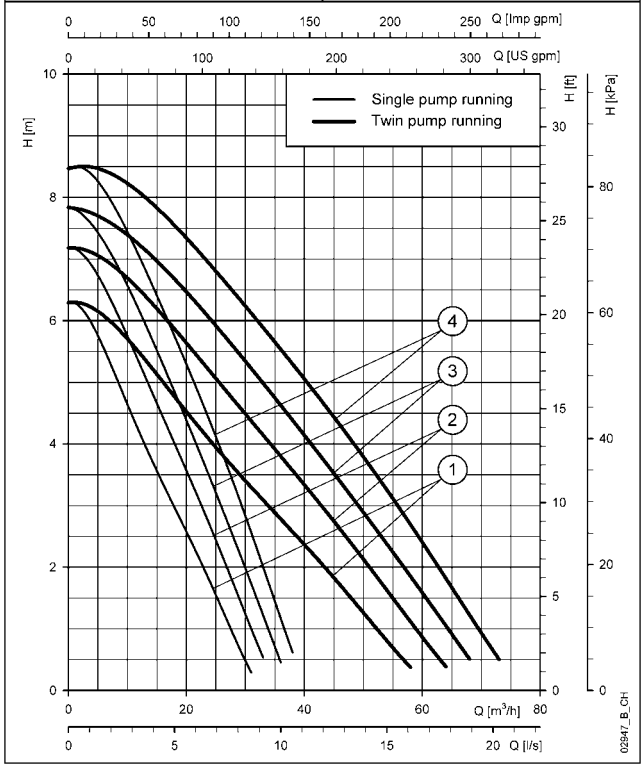
FLCG 50-10T | ISO 9906 - Annex A



FLCG 65-7T | ISO 9906 - Annex A



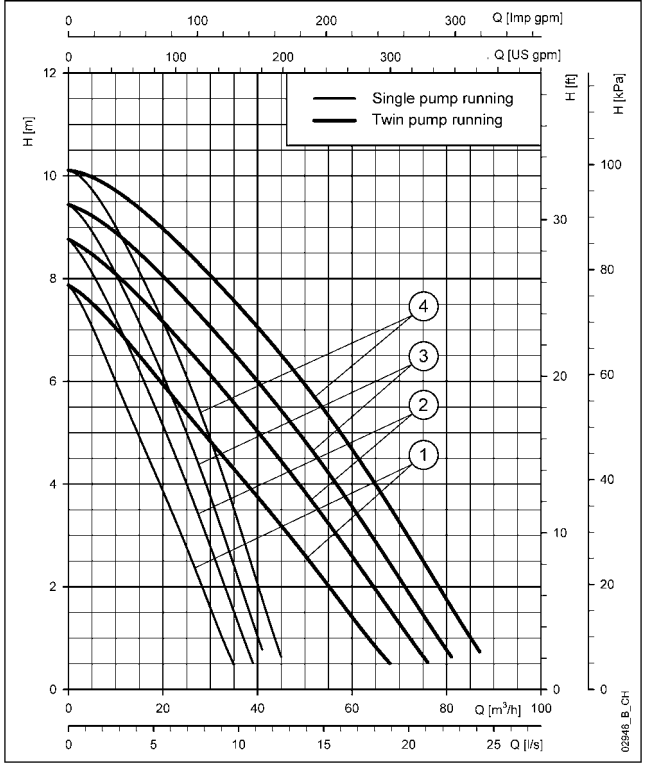
FLCG 65-10T | ISO 9906 - Annex A



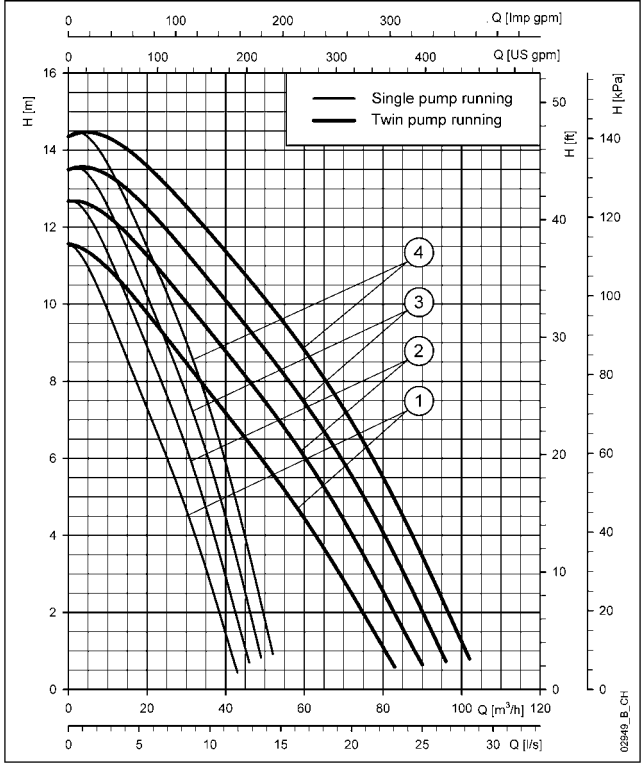
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

FLCG..T SERIES
THREE-PHASE OPERATING CHARACTERISTICS

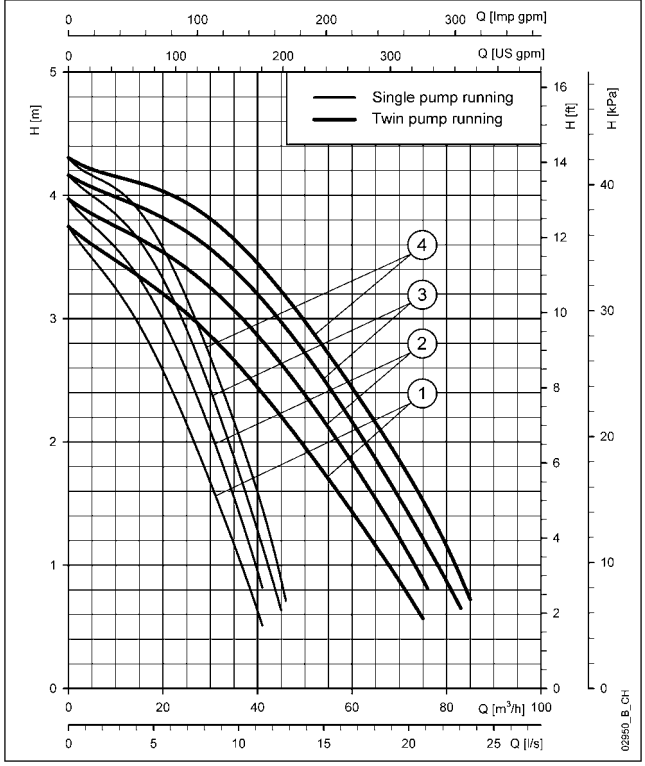
FLCG 65-12T | ISO 9906 - Annex A



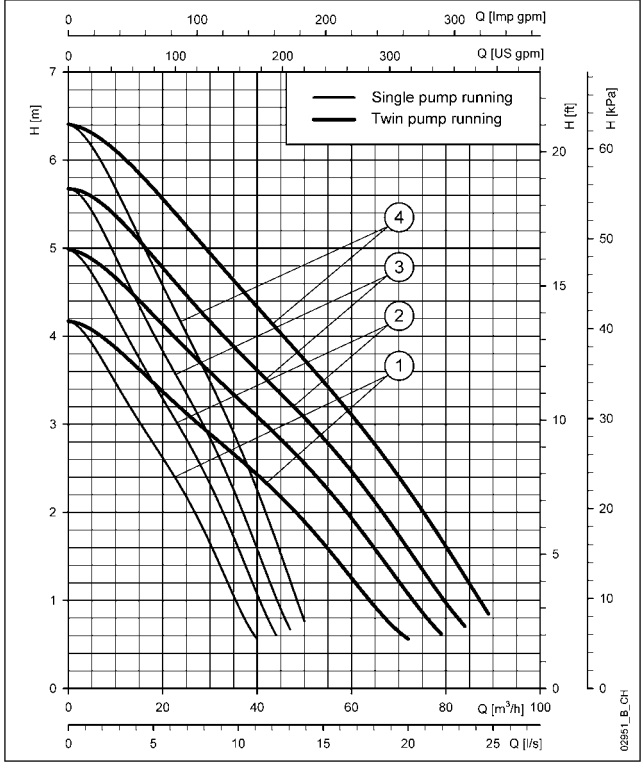
FLCG 65-16T | ISO 9906 - Annex A



FLCG 80-4T | ISO 9906 - Annex A



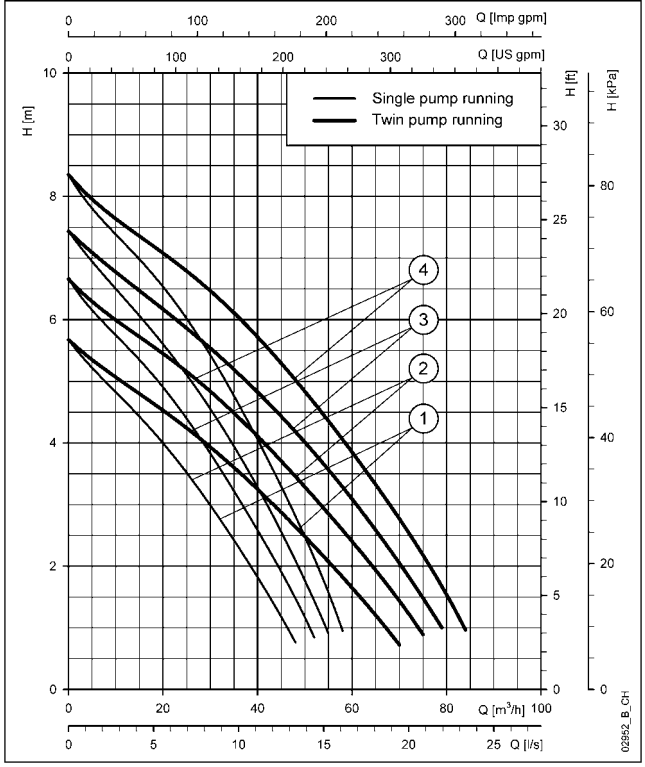
FLCG 80-8T | ISO 9906 - Annex A



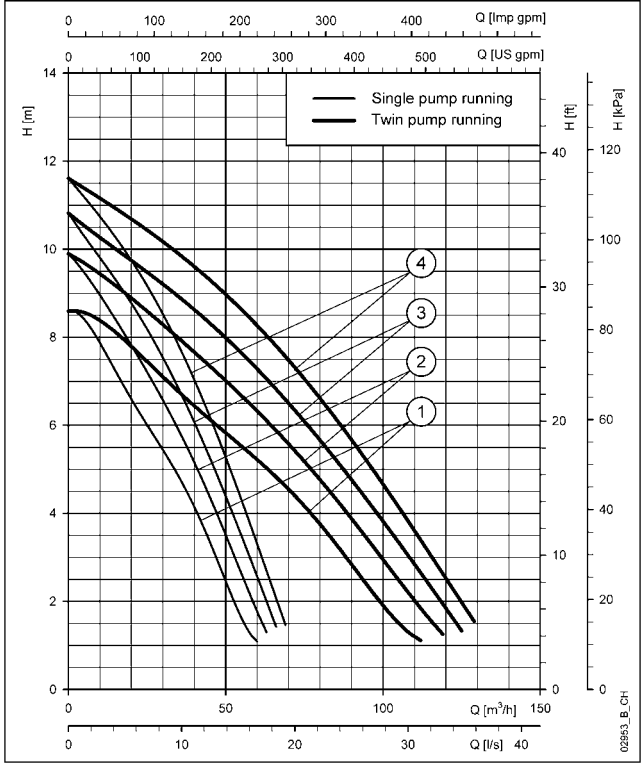
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

FLCG..T SERIES
THREE-PHASE OPERATING CHARACTERISTICS

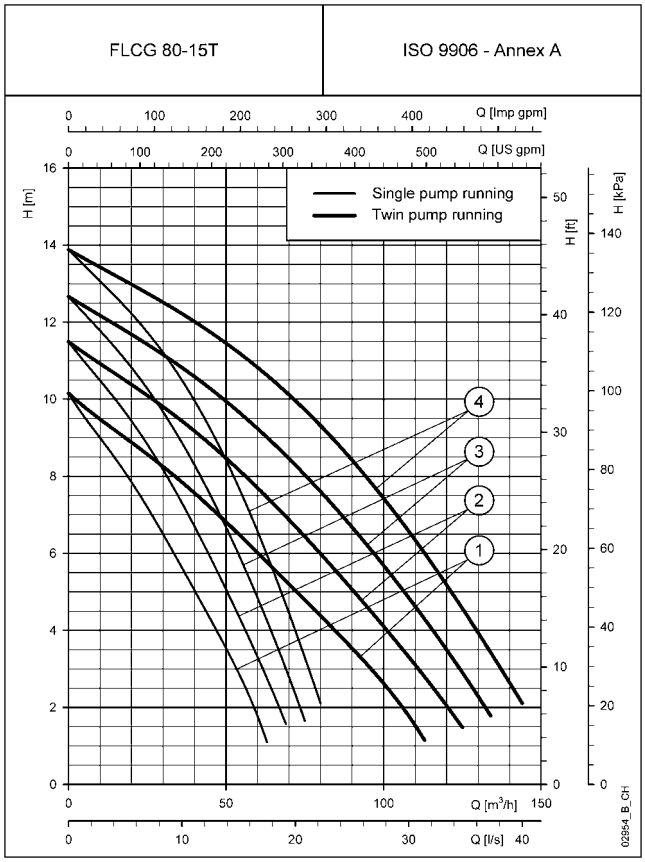
FLCG 80-10T | ISO 9906 - Annex A



FLCG 80-12T | ISO 9906 - Annex A

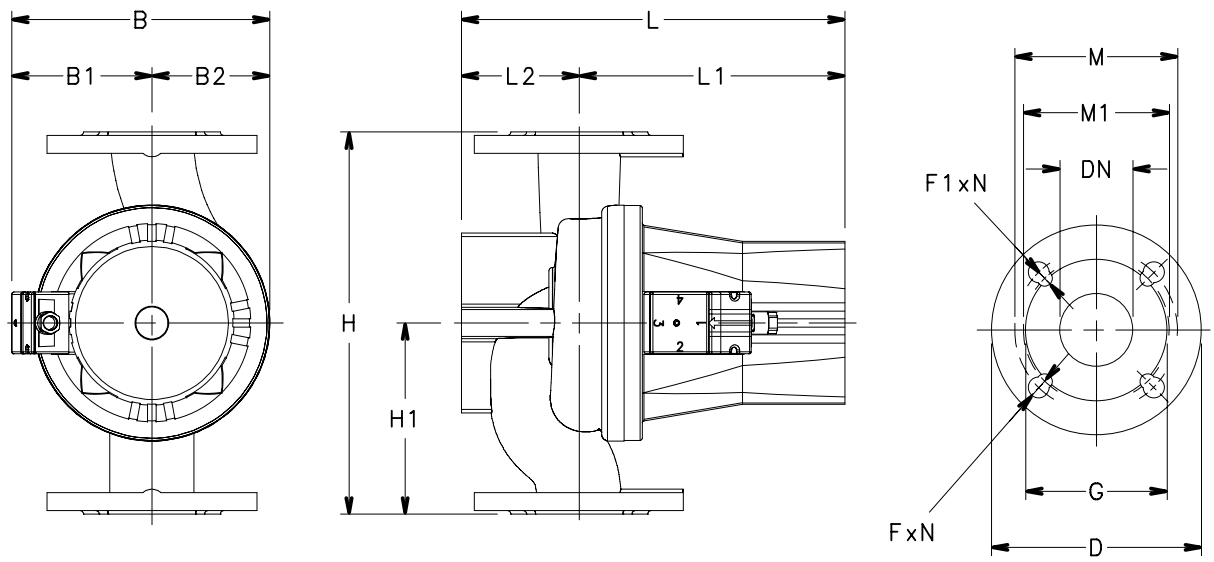


FLCG 80-15T | ISO 9906 - Annex A



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

FLC SERIES
DIMENSIONS AND WEIGHTS



PUMP DIMENSIONS FLANGES

	DIMENSIONS (mm)				HOLES			
DN	ø D	ø G	ø M	ø M1	ø F	ø F1	N°	PN
40	150	90	110	100	19	14	4	6 / 10
50	165	102	125	110	19	14	4	6 / 10
65	187	126	145	130	19	14	4	6 / 10

	DIMENSIONS (mm)			HOLES		
DN	ø D	ø G	ø M	ø F	N°	PN
80	200	140	160	19	8	10

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DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE		DIMENSIONS (mm)									WEIGHT
SINGLE-PHASE	THREE-PHASE	B	B1	B2	H	H1	L	L1	L2	DN	kg
FLC 40-5	FLC 40-5T	180	105	75	250	125	236	166	70	40	11
FLC 40-7	FLC 40-7T	180	105	75	250	125	245	175	70	40	11
FLC 40-10	FLC 40-10T	168	93	75	250	125	276	201	75	40	14
FLC 50-5	FLC 50-5T	173	83	90	280	140	279	194	85	50	18
FLC 50-8	FLC 50-8T	173	83	90	280	140	279	194	85	50	18
FLC 50-10	FLC 50-10T	200	110	90	280	140	312	232	80	50	22
FLC 50-13	FLC 50-13T	200	110	90	280	140	312	232	80	50	25
-	FLC 50-18T	230	110	120	280	140	360	275	82	50	29
FLC 65-7	FLC 65-7T	225	125	100	340	170	345	255	90	65	29
FLC 65-10	FLC 65-10T	225	125	100	340	170	345	255	90	65	28
FLC 65-12	FLC 65-12T	225	125	100	340	170	345	255	90	65	30
-	FLC 65-16T	195	95	100	340	170	394	304	90	65	35
FLC 80-8	FLC 80-8T	310	135	175	360	180	346	241	105	80	34
FLC 80-10	FLC 80-10T	310	135	175	360	180	346	241	105	80	36
-	FLC 80-12T	310	135	175	360	180	351	246	105	80	40
-	FLC 80-15T	310	135	175	360	180	351	246	105	80	41

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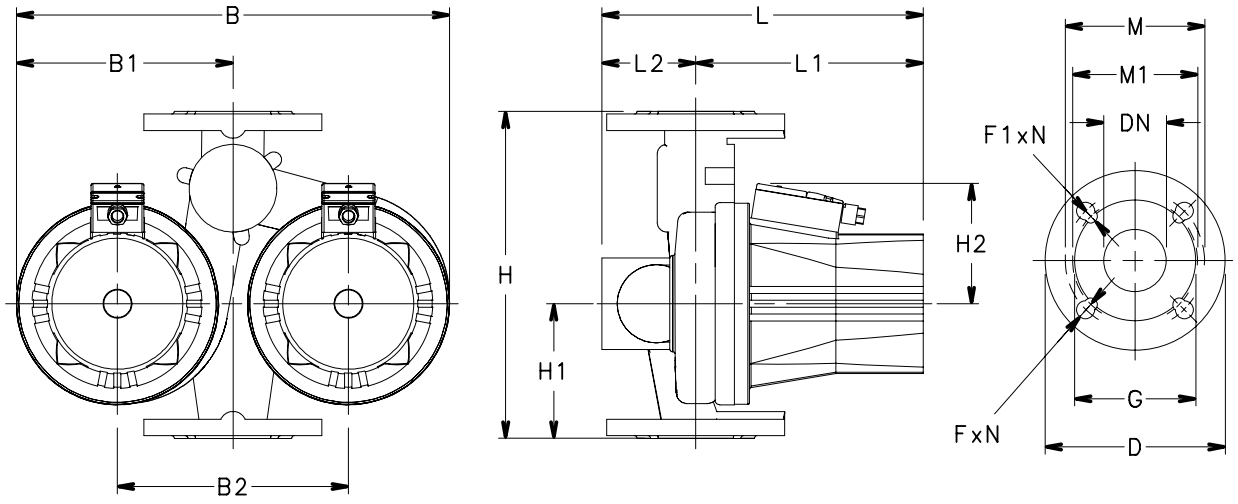
FLCG SERIES
DIMENSIONS AND WEIGHTS



PUMP DIMENSIONS FLANGES

	DIMENSIONS (mm)				HOLES			
DN	ø D	ø G	ø M	ø M1	ø F	ø F1	N°	PN
40	150	90	110	100	19	14	4	6 / 10
50	165	102	125	110	19	14	4	6 / 10
65	187	126	145	130	19	14	4	6 / 10

	DIMENSIONS (mm)			HOLES		
DN	ø D	ø G	ø M	ø F	N°	PN
80	200	140	160	19	8	10

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DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE		DIMENSIONS (mm)										WEIGHT
SINGLE-PHASE	THREE-PHASE	B	B1	B2	H	H1	H2	L	L1	L2	DN	kg
FLCG 40-5	FLCG 40-5T	344	172	200	250	110	110	222	147	75	40	19
FLCG 40-7	FLCG 40-7T	344	172	200	250	110	110	222	147	75	40	19
FLCG 40-10	FLCG 40-10T	348	172	200	250	110	110	265	190	75	40	26
FLCG 50-5	FLCG 50-5T	387	187	200	280	120	92	280	197	83	50	32
FLCG 50-8	FLCG 50-8T	387	187	200	280	120	92	280	197	83	50	33
FLCG 50-10	FLCG 50-10T	400	200	200	280	125	120	310	225	85	50	41
FLCG 65-7	FLCG 65-7T	450	120	240	340	140	120	329	236	93	65	49
FLCG 65-10	FLCG 65-10T	450	120	240	340	140	120	329	236	93	65	50
FLCG 65-12	FLCG 65-12T	450	120	240	340	140	120	329	236	93	65	53
-	FLCG 65-16T	450	120	240	340	140	120	378	285	93	65	63
FLCG 80-4	FLCG 80-4T	513	245	275	360	160	175	341	258	83	80	62
FLCG 80-8	FLCG 80-8T	513	245	275	360	160	175	341	258	83	80	60
FLCG 80-10	FLCG 80-10T	513	245	275	360	160	175	341	258	83	80	63
-	FLCG 80-12T	513	245	275	360	160	175	390	307	83	80	77
-	FLCG 80-15T	513	245	275	360	160	175	390	307	83	80	73

flcg-2p50-en_a_td

Variable speed circulators for commercial systems

EFLC Series

MARKET SECTORS

COMMERCIAL AND INDUSTRIAL

APPLICATIONS

- Water circulation in heating and cooling systems.
- Pumping of hot/cold, chemically and mechanically non-aggressive liquids.

SPECIFICATIONS

PUMP

- **Flow rate**: up to 50 m³/h. (90 m³/h with both pumps running).
- **Head**: up to 12 m.
- **Temperature of pumped liquid**: +15°C ÷ +90°C. Non-freezing, non-condensing.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Impeller**: made of cast iron (except for EFLC(G) 40-9, made of composite material).

MOTOR

- Wet rotor type, with bearings lubricated by the pumped liquid. Built-in automatic motor protection with isothermal probes (with external relay, terminals accessible from the terminal board).
- Single-phase 230 V 50 Hz power supply.
- Motor-mounted inverter, with selector switch for mode and operating parameter selection and terminal board for cable connection.
- According to EN standards 61000-6-2 (immunity) and EN 61000-6-3 (emissions).
- **Insulation class**: F (155°C).
- **Protection class**: IP 44.

ACCESSORIES

- Blind flanges.
- Counterflanges.

INSTALLATION

- Suitable for installation in horizontal or vertical piping, in any position provided that motor axis is horizontal.
- Never install the circulator with the terminal box under the motor(s) (6 o'clock).
- For the twin design installed on horizontal piping, periodic changeover is recommended in order to prevent the formation of water pockets at the top; as an alternative, install an air bleed valve on the flange.
- For installation onto vertical piping the flow should always be upward. If not it is recommended to install an air venting point in the higher point of the circuit at the suction side.

LOWARA
a xylem brand

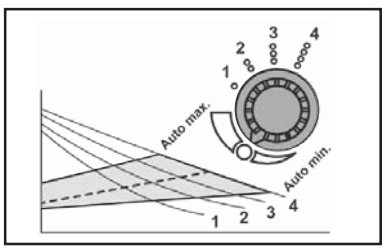
Variable speed circulators for commercial systems

EFLC Series

SERIES CHARACTERISTICS

- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation onto piping, DN 40, 50, 65 and 80 mounting flanges.
- Single or twin pump design. The two pumps can operate separately or in parallel in the following manner:
  - Separately: both differential pressure and controlled speed can be selected.
  - Parallel: controlled speed regulation only (speed selection from 1 to 4).
- Rotor shaft made of perforated stainless steel. By enabling water circulation this design ensures:
  – continuous degassing of the rotor chamber, with no need to perform this operation manually during startup;
  – bearing lubrication.
- 2 modes of regulation:
  - Differential pressure.
  - Controlled speed.
- On the terminal box 2 LED indicate the running status:
  - Green LED: normal operation.
  - Red LED: failure detected by the electronics. The light will flash approximately every minute for a specific number of times depending on the error type.

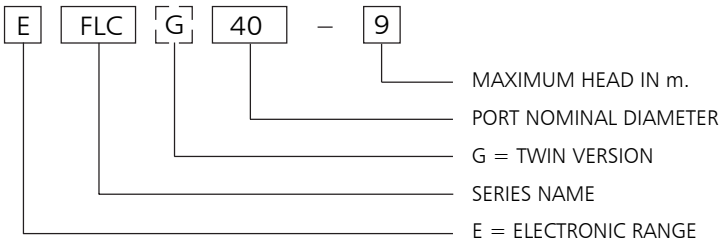
CONTROL MODES



Control:

1. Differential pressure
   Thanks to the losses compensation system of the electronics, the controller adjusts the circulator's differential pressure to match the required flow.
2. Controlled speed
   The motor running speed is fixed at the value set with the selector between 1 and 4.

EFLC SERIES IDENTIFICATION CODE



EXAMPLE : EFLCG 40-9

EFLC series electronic circulator, twin version, port nominal diameter = 40, max head = 9 m.

TABLE OF MATERIALS

PART	MATERIAL
Pump body	Cast iron
Impeller EFLC(G) 40-9	Composite material
Impeller from EFLC(G) 40-11	Cast iron
Shaft	Stainless steel
Jacket	Stainless steel
Bearings	Carbon

eflc-2p50-en_a_tm

LOWARA
a xylem brand

EFLC SERIES (SINGLE VERSION, SINGLE-PHASE)
HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	POWER ABSORBED		CURRENT ABSORBED		SPEED	Q = DELIVERY										
						l/s 0	1,4	2,2	2,8	4,2	5,6	6,9	8,3	9,7	11,1	13,9
	MIN	MAX	MIN	MAX		m^3/h 0	5	8	10	15	20	25	30	35	40	50
230V 50Hz	W	W	A	A		H = TOTAL HEAD METRES COLUMN OF WATER										
EFLC 40-9	25	300	0,25	1,80	1	5,2	3,2	2,0								
					2	6,3	4,0	2,6								
					3	7,3	4,7	3,2	2,1							
					4	10,5	6,0	3,8	2,4							
					max	4,8	6,0	3,8								
EFLC 40-11	40	650	0,35	3,70	1	5,2	4,6	4,0	3,5	1,6						
					2	6,4	5,7	5,2	4,6	2,8						
					3	7,7	7,1	6,4	5,8	4,0	1,6					
					4	12,0	9,5	8,1	7,1	4,6	2,1					
					max	5,1	6,1	6,7	7,1	4,6						
EFLC 50-12	50	750	0,35	3,50	1	5,2	5,0	4,5	4,1	2,7						
					2	6,7	6,2	5,8	5,4	4,0	2,3					
					3	8,1	7,5	7,1	6,7	5,3	3,6	1,5				
					4	12,7	10,6	9,3	8,5	6,4	4,3	2,2				
					max	5,3	6,6	7,3	7,7	6,4	4,3					
EFLC 65-12	90	1090	0,70	7,70	1	5,1	4,6	4,3	4,1	3,4	2,5	1,4				
					2	6,5	6,0	5,7	5,4	4,7	3,8	2,6	1,3			
					3	8,0	7,5	7,2	6,9	6,1	5,2	4,0	2,7	1,2		
					4	12,5	10,7	9,8	9,2	7,7	6,2	4,8	3,5	2,2		
					max	6,4	6,8	7,1	7,3	7,7	6,2	4,8				
EFLC 80-7	120	1080	1,20	8,00	1	3,7	3,5	3,4	3,2	2,9	2,5	2,1	1,6	1,0		
					2	4,8	4,6	4,5	4,4	4,0	3,6	3,1	2,6	1,9	1,2	
					3	6,0	5,7	5,5	5,4	5,0	4,6	4,1	3,6	3,0	2,4	1,0
					4	6,9	6,6	6,3	6,2	5,7	5,3	4,7	4,1	3,5	2,9	1,7
					max	4,0	4,4	4,7	4,9	5,4	5,3	4,7	4,1	3,5		

Performances according to standards ISO 9906 - Annex A.

eflc-2p50-en_c_th

EFLCG SERIES (TWIN VERSION, SINGLE-PHASE) HYDRAULIC PERFORMANCE TABLE (SINGLE OPERATION)

PUMP TYPE	POWER ABSORBED		CURRENT ABSORBED		SPEED	Q = DELIVERY										
						l/s 0	1,4	2,2	2,8	4,2	5,6	6,9	8,3	9,7	11,1	13,9
	MIN	MAX	MIN	MAX		m^3/h 0	5	8	10	15	20	25	30	35	40	50
230V 50Hz	W	W	A	A		H = TOTAL HEAD METRES COLUMN OF WATER										
EFLCG 40-9	25	300	0,25	1,80	1	5,2	3,2	2,0								
					2	6,3	4,0	2,6								
					3	7,3	4,7	3,2	2,1							
					4	10,5	6,0	3,8	2,4							
					max	4,8	6,0	3,8								
EFLCG 40-11	40	650	0,35	3,70	1	5,2	4,6	4,0	3,5	1,6						
					2	6,4	5,7	5,2	4,6	2,8						
					3	7,7	7,1	6,4	5,8	4,0	1,6					
					4	12,0	9,5	8,1	7,1	4,6	2,1					
					max	5,1	6,1	6,7	7,1	4,6						
EFLCG 50-12	50	750	0,35	3,50	1	5,2	5,0	4,5	4,1	2,7						
					2	6,7	6,2	5,8	5,4	4,0	2,3					
					3	8,1	7,5	7,1	6,7	5,3	3,6	1,5				
					4	12,7	10,6	9,3	8,5	6,4	4,3	2,2				
					max	5,3	6,6	7,3	7,7	6,4	4,3					
EFLCG 65-12	90	1090	0,70	7,70	1	5,1	4,6	4,3	4,1	3,4	2,5	1,4				
					2	6,5	6,0	5,7	5,4	4,7	3,8	2,6	1,3			
					3	8,0	7,5	7,2	6,9	6,1	5,2	4,0	2,7	1,2		
					4	12,5	10,7	9,8	9,2	7,7	6,2	4,8	3,5	2,2		
					max	6,4	6,8	7,1	7,3	7,7	6,2	4,8				
EFLCG 80-7	120	1080	1,20	8,00	1	3,7	3,5	3,4	3,2	2,9	2,5	2,1	1,6	1,0		
					2	4,8	4,6	4,5	4,4	4,0	3,6	3,1	2,6	1,9	1,2	
					3	6,0	5,7	5,5	5,4	5,0	4,6	4,1	3,6	3,0	2,4	1,0
					4	6,9	6,6	6,3	6,2	5,7	5,3	4,7	4,1	3,5	2,9	1,7
					max	4,0	4,4	4,7	4,9	5,4	5,3	4,7	4,1	3,5		

Performances according to standards ISO 9906 - Annex A.

eflcg-2p50S-en_d_th

EFLCG SERIES (TWIN VERSION, SINGLE-PHASE) HYDRAULIC PERFORMANCE TABLE (PARALLEL OPERATION)

PUMP TYPE	POWER ABSORBED		CURRENT ABSORBED		SPEED	Q = DELIVERY										
						l/s 0	1,4	2,8	5,0	8,3	11,1	13,9	16,7	19,4	22,2	25,0
	MIN	MAX	MIN	MAX		m^3/h 0	5	10	18	30	40	50	60	70	80	90
230V 50Hz	W*	W*	A*	A*		H = TOTAL HEAD METRES COLUMN OF WATER										
EFLCG 40-9	25	300	0,25	1,80	1	5,2	4,1	2,9								
					2	6,3	5,0	3,7								
					3	7,3	5,8	4,4	2,1							
					4	10,5	7,9	5,6	2,4							
					max	4,8	5,9	5,6								
EFLCG 40-11	40	650	0,35	3,70	1	5,2	4,8	4,4	3,0							
					2	6,4	5,9	5,5	4,2	1,0						
					3	7,7	7,4	6,8	5,4	2,3						
					4	12,0	10,4	8,9	6,5	2,8						
					max	5,2	5,8	6,4	6,5							
EFLCG 50-12	50	750	0,35	3,50	1	5,2	5,2	4,9	4,1	1,9						
					2	6,7	6,5	6,1	5,3	3,3						
					3	8,1	7,8	7,4	6,6	4,7	2,5					
					4	12,7	11,5	10,3	8,4	5,5	3,1					
					max	5,3	6,0	6,7	7,7	5,5						
EFLCG 65-12	90	1090	0,70	7,70	1	5,1	4,8	4,6	4,1	3,1	2,0	0,8				
					2	6,5	6,2	6,0	5,4	4,4	3,3	1,9				
					3	8,0	7,8	7,5	6,9	5,8	4,7	3,3	1,7			
					4	12,5	11,5	10,6	9,2	7,2	5,6	4,1	2,6			
					max	6,3	6,6	6,9	7,3	7,2	5,6					
EFLCG 80-7	120	1080	1,20	8,00	1	3,7	3,6	3,5	3,3	2,8	2,4	1,9	1,3			
					2	4,8	4,7	4,6	4,4	3,9	3,5	2,9	2,3	1,5		
					3	6,0	5,9	5,7	5,4	4,9	4,4	3,9	3,3	2,7	2,0	1,2
					4	6,9	6,7	6,5	6,2	5,6	5,1	4,5	3,9	3,2	2,5	1,8
					max	4,0	4,2	4,5	4,9	5,5	5,1	4,5				

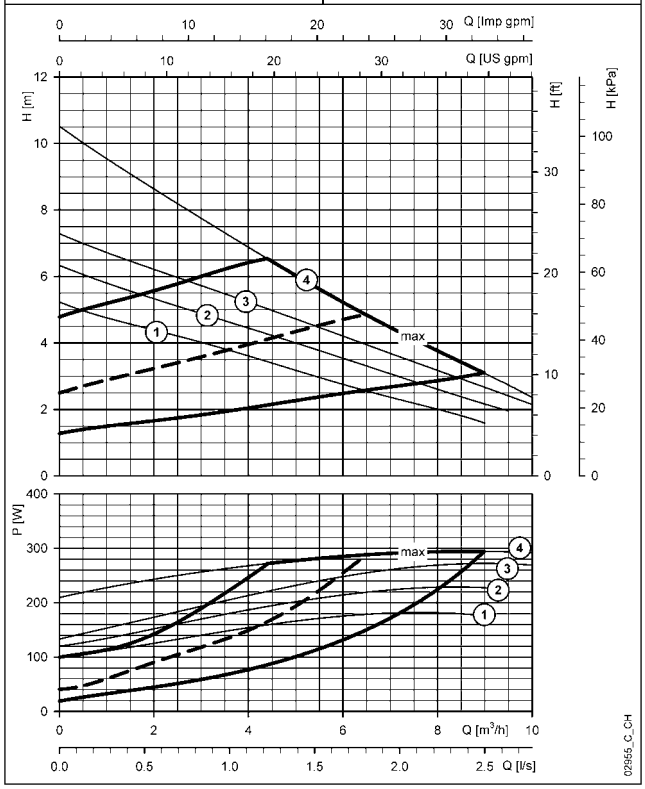
* Electric data refer to single motor.

eflcg-2p50P-en_d_th

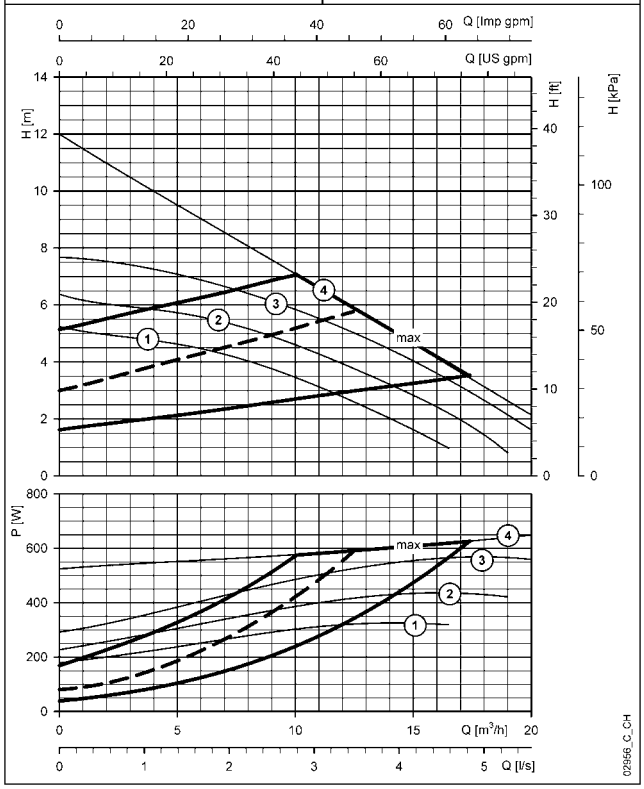
Performances according to standards ISO 9906 - Annex A.

EFLC SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

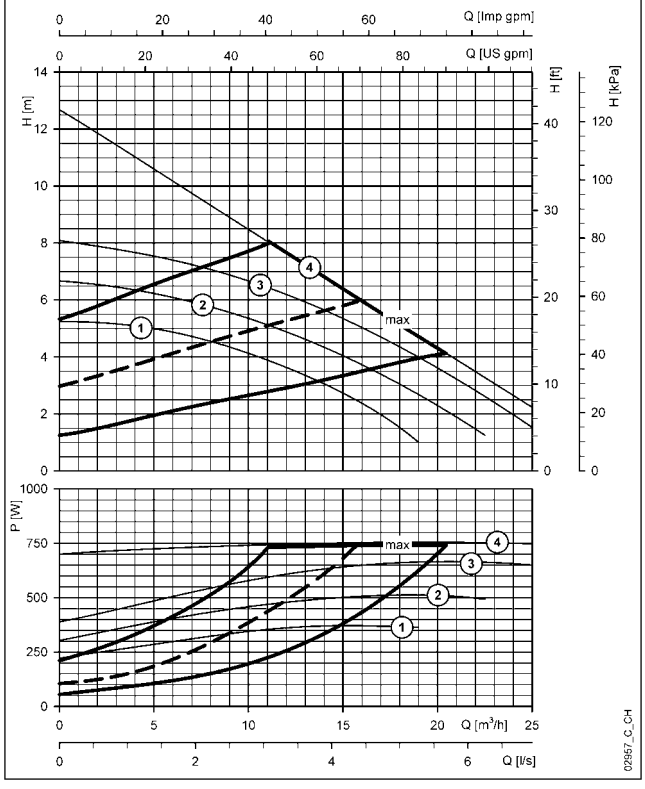
EFLC 40-9 | ISO 9906 - Annex A



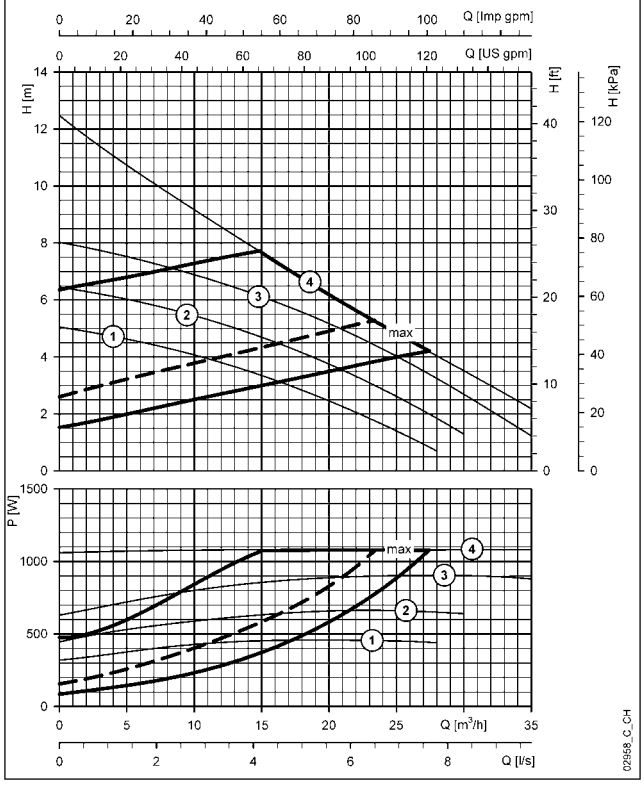
EFLC 40-11 | ISO 9906 - Annex A



EFLC 50-12 | ISO 9906 - Annex A

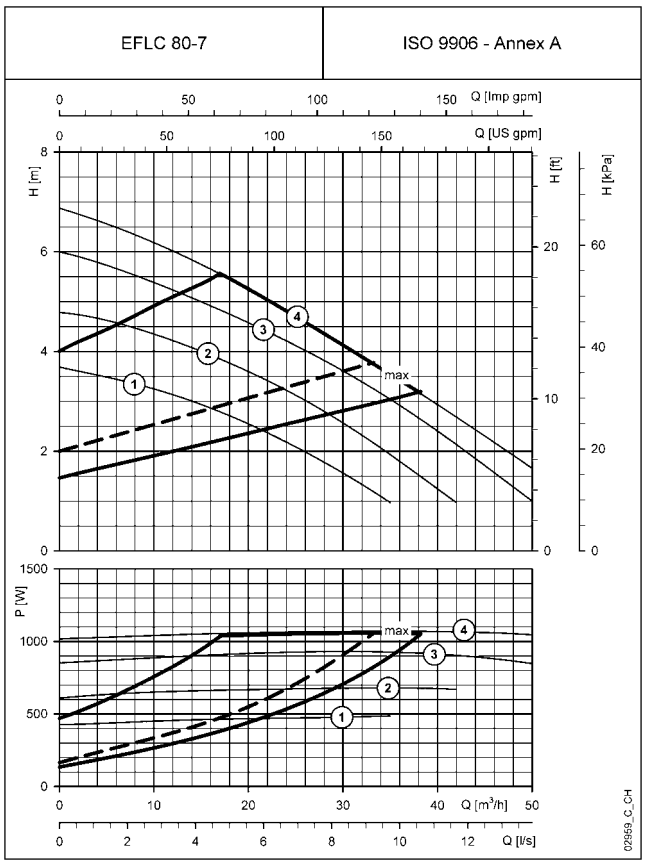


EFLC 65-12 | ISO 9906 - Annex A



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

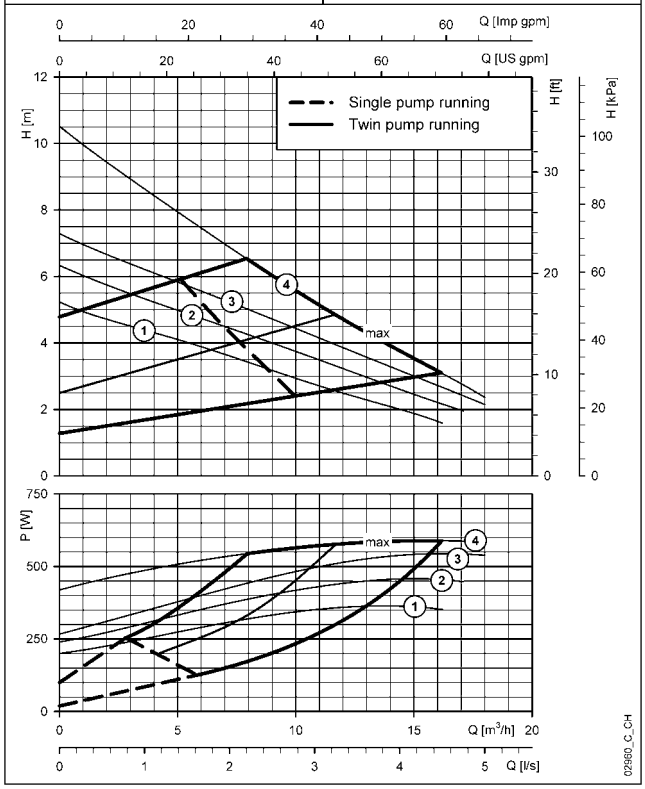
EFLC SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS



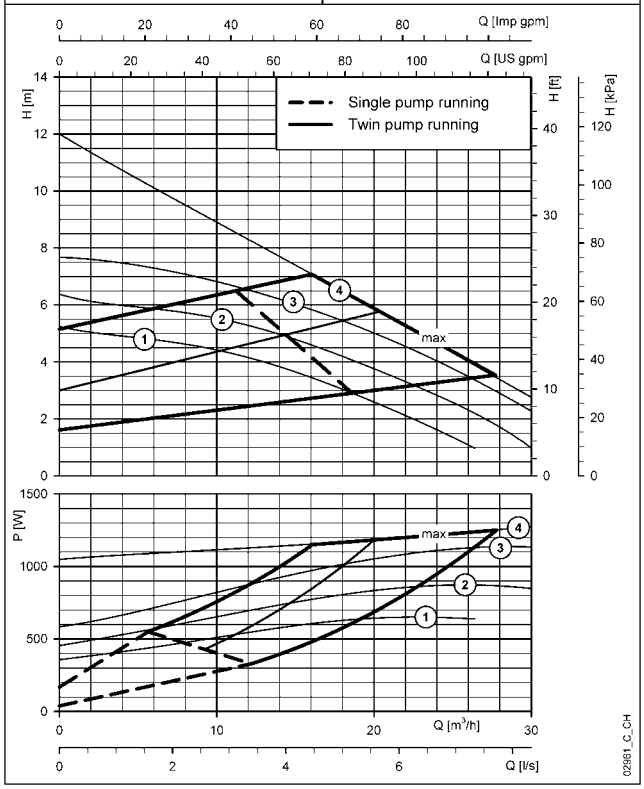
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.

EFLCG SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

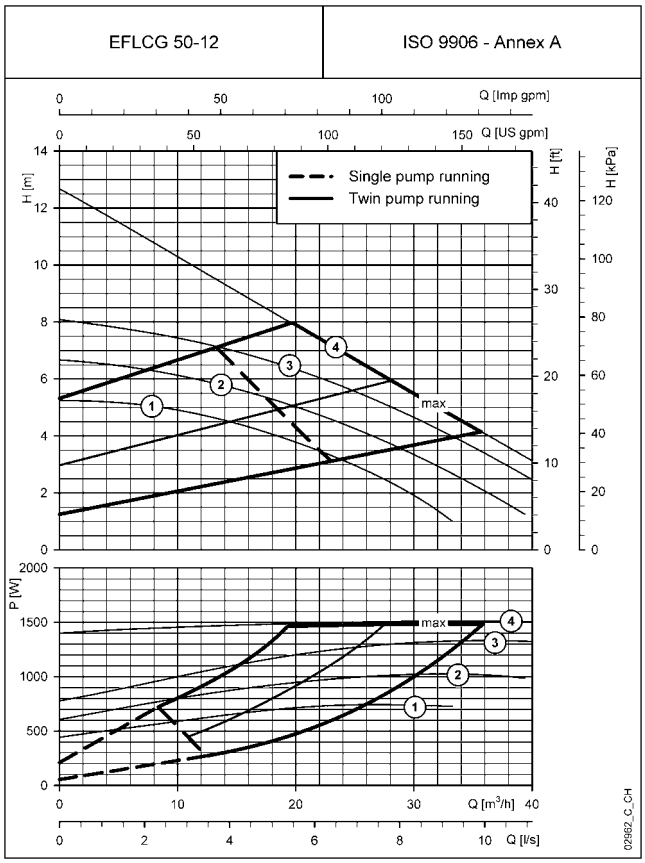
EFLCG 40-9 | ISO 9906 - Annex A



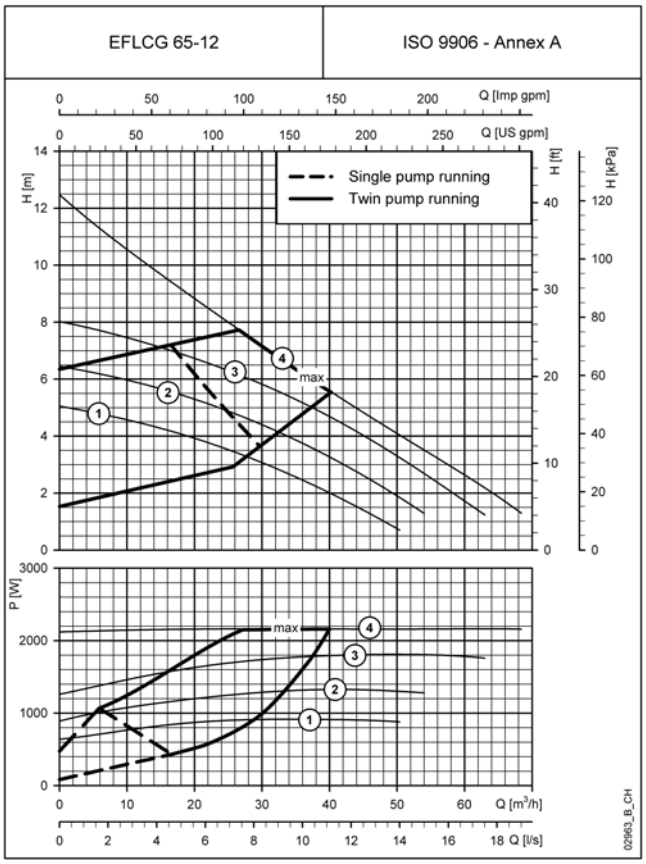
EFLCG 40-11 | ISO 9906 - Annex A



EFLCG 50-12 | ISO 9906 - Annex A

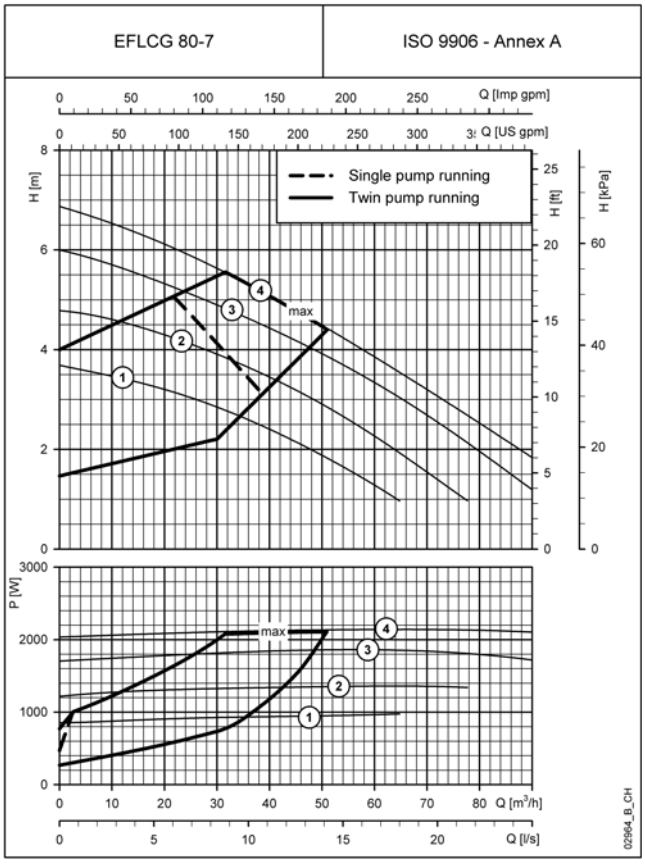


EFLCG 65-12 | ISO 9906 - Annex A



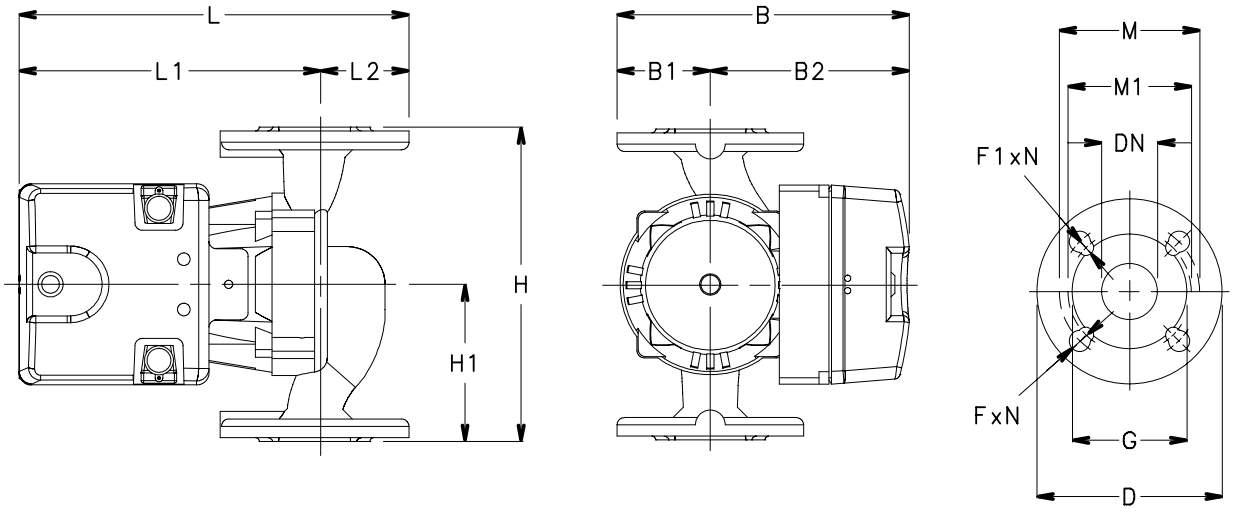
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.
For single pump running, refer to EFLC corresponding curves.

EFLCG SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS



These performances are valid for liquids with density $\rho = 1.0$ Kg/dm^3 and kinematic viscosity $\nu = 1$ mm^2/sec.
For single pump running, refer to EFLC corresponding curves.

EFLC SERIES
DIMENSIONS AND WEIGHTS



PUMP DIMENSIONS FLANGES

	DIMENSIONS (mm)				HOLES			
DN	ø D	ø G	ø M	ø M1	ø F	ø F1	N°	PN
40	150	90	110	100	19	14	4	6 / 10
50	165	102	125	110	19	14	4	6 / 10
65	187	126	145	130	19	14	4	6 / 10

	DIMENSIONS (mm)			HOLES		
DN	ø D	ø G	ø M	ø F	N°	PN
80	200	140	160	19	8	10

flc-flcg-flangep-en_a_td

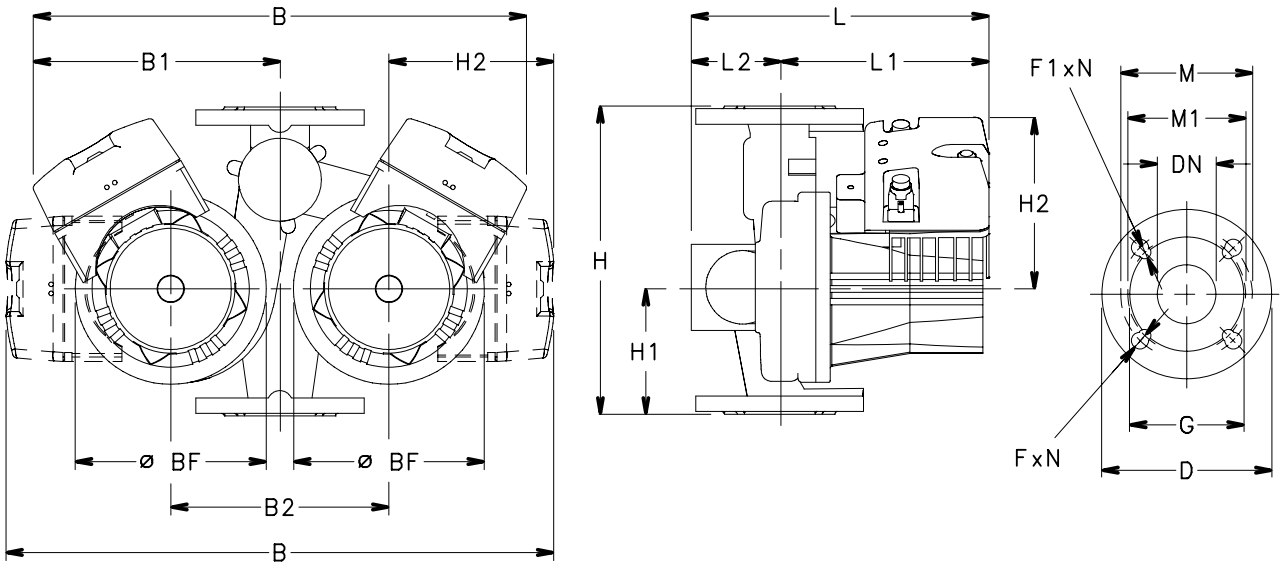
02710_A_DD

DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)									WEIGHT
SINGLE-PHASE	B	B1	B2	H	H1	L	L1	L2	DN	kg
EFLC 40-9	235	75	160	250	125	300	230	70	40	13
EFLC 40-11	235	75	160	250	125	310	235	75	40	16
EFLC 50-12	248	83	165	280	140	315	230	85	50	20
EFLC 65-12	275	100	175	340	170	346	256	90	65	30
EFLC 80-7	285	110	175	360	180	351	246	105	80	36

efc-2p50-en_a_td

EFLCG SERIES
DIMENSIONS AND WEIGHTS



PUMP DIMENSIONS FLANGES

DN	DIMENSIONS (mm) ø D	ø G	ø M	ø M1	HOLES ø F	ø F1	N°	PN
40	150	90	110	100	19	14	4	6 / 10
50	165	102	125	110	19	14	4	6 / 10
65	187	126	145	130	19	14	4	6 / 10

DN	DIMENSIONS (mm) ø D	ø G	ø M	HOLES ø F	N°	PN
80	200	140	160	19	8	10

flc-flcg-flangep-en_a_td

02712_B_DD

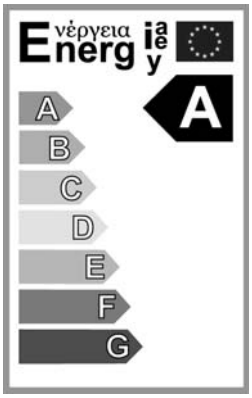
DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm) B	B1	B2	H	H1	H2	L	L1	L2	ø BF	DN	WEIGHT kg
EFLCG 40-9	436	218	200	250	105	170	287	212	75	135	40	22
EFLCG 40-11	520	265	200	250	105	165	304	229	75	135	40	29
EFLCG 50-12	490	245	200	280	120	170	317	198	83	161	50	35
EFLCG 65-12	528	300	275	340	140	180	328	235	93	210	65	54
EFLCG 80-7	660	340	275	360	100	180	342	240	102	210	80	70

eflcg-2p50-en_c_td

"A Class" High efficiency variable speed circulators

EA+ Series (Ecocirc+ Auto)



MARKET SECTORS

RESIDENTIAL.

APPLICATIONS

- Water circulation in heating and air conditioning systems.
- Refurbishment or extension of existing systems.
- Recommended for facilities fitted with thermostatic valves.
- Single-family houses or apartment buildings.
- Floor heating systems.

SPECIFICATIONS

PUMP

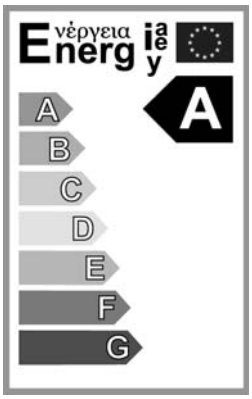
- **Flow rate**: up to 3 m^3/h.
- **Head**: up to 5,5 m.
- **Maximum power consumption**: 28 W (for the 4 m model) and 50 W (for the 6 m model).
- **Temperature of pumped liquid**: -10°C ÷ +95°C.
  Non-freezing, non-condensing.
  Maximum 20% glycol and water mixture.
  For glycol quantities higher than 20%, hydraulic performances must be checked.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Rotor assembly group**: made of stainless steel/composite material/carbon.

MOTOR

- Permanent magnet EC (Electronically Commutated) type motor with spherical rotor/stator.
- Wet rotor with a single spherical ceramic/carbon bearing.
- Integrated motor protection; no external protection required.
- Single-phase 220-240 V, 50-60 Hz power supply.
- Variable-speed motor, with automatic speed adjustment based on system requirement.
- **Insulation class**: F (155°C).
- **Protection class**: IP 44.

"A Class" High efficiency variable speed circulators

EA+ Series (Ecocirc+ Auto)



SERIES CHARACTERISTICS

- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation into piping, for threaded union connections.
- The design is based on spherical rotor/stator technology.
  This means that:
  - The only moving part is the spherical rotor/impeller unit that turns on a hard ceramic ball.
  - Shaft seals or conventional bearing bushings with a shaft have been eliminated for a single self realigning spherical bearing.
- Blockage free rotor: the spherical motor principle does not require a manual unblocking device thanks to the small touching surface of the bearing on the ball. The starting torque required is minimal.
- Automatic regulation by setting a single selector switch placed on the motor housing. This ensures considerable energy.
  The control adapts the pump steplessly and automatically to the system requirements, i.e. the running speed varies automatically based on load fluctuations.
- The LED in the transparent knob gives information about the operational status of the pump and troubleshooting.
- 3-core pre-mounted cable for main power supply single-phase 230 V / 50 Hz, 2 m lenght.
- Overtemperature protection feature that slows down the circulator in case the temperature of the electronic module is too high and shuts it down when temperature rises above the safety limit. The circulator will automatically restart after having cooled down.

ADVANTAGES

- Energy saving.
- Blockage free.
- Minimal maintenance.
- Easy and quick installation.
- Noise reduction.

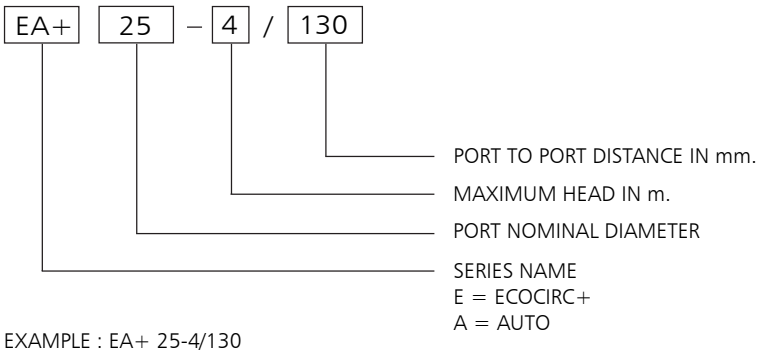
INSTALLATION

- Suitable for installation in vertical or horizontal piping, in this last case not with the motor housing upward.

CONTROL MODES

- Automatic regulation: the pump automatically adjusts the working conditions based on the requirement of the system. When the pump detects a decrease in the flow, the inverter reduces the differential pressure of the pump until it reaches the required head.

EA+ SERIES
IDENTIFICATION CODE



EXAMPLE : EA+ 25-4/130

A class electronic circulator of the EA+ series, port nominal diameter = 25, max head = 4 m, with port to port distance 130 mm.

TABLE OF MATERIALS

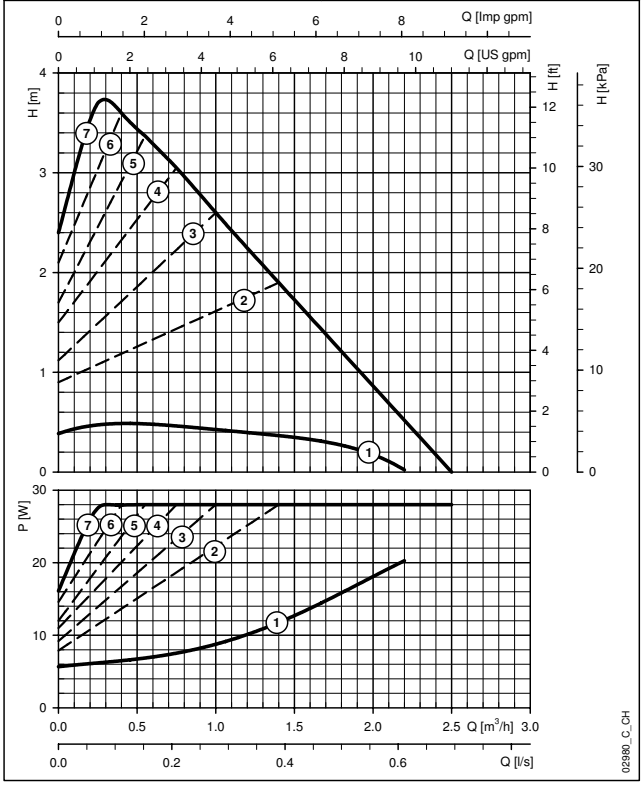
PART	MATERIAL
Pump body	Cast iron (EN-GJL-200) cataphoretically coated
Rotor assembly group	Stainless steel
	Composite material
	Carbon
Bearing	Ceramics
Gaskets	EPDM Rubber
Motor housing	Aluminum (AlSi11Cu2)
Screw ring	Aluminum (AlMgSi05)

ea-50-en_c_tm

EA+ SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

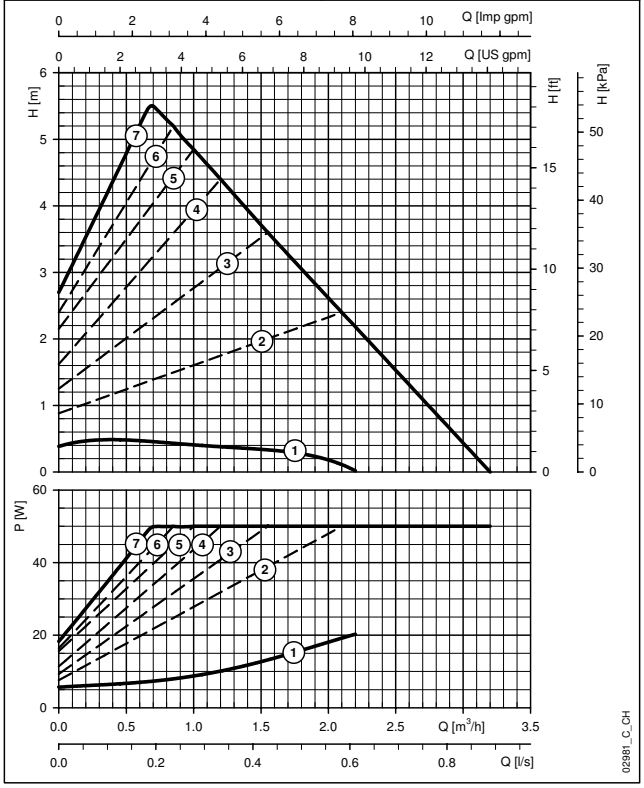
EA+ 15-4/130 EA+ 25-4/180
EA+ 20-4/130 EA+ 32-4/180
EA+ 25-4/130

EN 1151-1



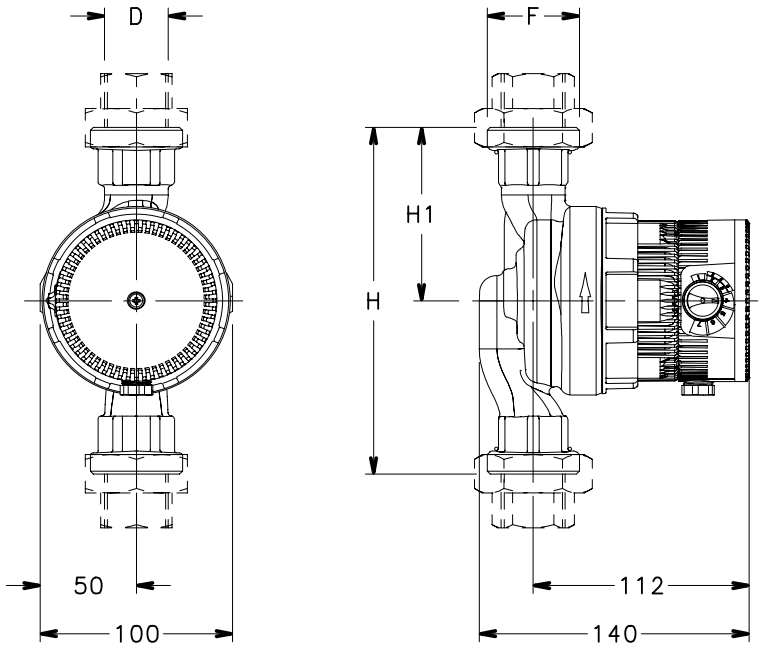
EA+ 15-6/130 EA+ 25-6/180
EA+ 20-6/130 EA+ 32-6/180
EA+ 25-6/130

EN 1151-1



These performances are valid for liquids with density $\rho = 1.0$ Kg/dm³ and kinematic viscosity $\nu = 1$ mm²/sec.
Pump operates steplessly. Lines correspond to knob settings and are for reference only.

EA+ SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)					WEIGHT
	H	H1	D	F	DN	kg
EA+ 15-4/130	130	65	1/2"	G 1"	15	1,1
EA+ 20-4/130	130	65	3/4"	G 1"¼	20	1,2
EA+ 25-4/130	130	65	1"	G 1"½	25	1,3
EA+ 25-4/180	180	90	1"	G 1"½	25	1,6
EA+ 32-4/180	180	90	1"¼	G 2"	32	1,6
EA+ 15-6/130	130	65	1/2"	G 1"	15	1,1
EA+ 20-6/130	130	65	3/4"	G 1"¼	20	1,2
EA+ 25-6/130	130	65	1"	G 1"½	25	1,3
EA+ 25-6/180	180	90	1"	G 1"½	25	1,6
EA+ 32-6/180	180	90	1"¼	G 2"	32	1,6

ea-2p50-en_c_td

HYDRAULIC PERFORMANCE TABLE

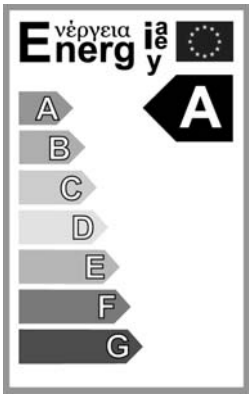
PUMP TYPE	POWER ABSORBED		CURRENT ABSORBED		SPEED	Q = DELIVERY										
						l/s 0	0,06	0,11	0,17	0,22	0,28	0,33	0,44	0,56	0,69	0,83
	MIN	MAX	MIN	MAX		m^3/h 0	0,2	0,4	0,6	0,8	1,0	1,2	1,6	2,0	2,5	3,0
230V 50Hz	W	W	A	A		H = TOTAL HEAD METRES COLUMN OF WATER										
EA+ 15-4/130 EA+ 20-4/130 EA+ 25-4/130 EA+ 25-4/180 EA+ 32-4/180	6	28	0,10	0,28	min	0,4	0,5	0,5	0,5	0,5	0,4	0,4	0,3	0,2		
					max	2,4	3,6	3,6	3,3	3,0	2,6	2,3	1,6	0,9		
EA+ 15-6/130 EA+ 20-6/130 EA+ 25-6/130 EA+ 25-6/180 EA+ 32-6/180	6	50	0,10	0,43	min	0,4	0,5	0,5	0,5	0,5	0,4	0,4	0,3	0,2		
					max	2,7	3,6	4,4	5,2	5,3	4,8	4,4	3,5	2,6	1,5	0,4

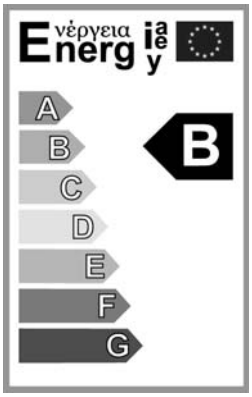
Performances according to standards EN 1151-1

ea-50-en_d_th

High efficiency variable speed circulators

EV+ Series (Ecocirc+ Vario)





MARKET SECTORS

RESIDENTIAL.

APPLICATIONS

- Water circulation in heating and air conditioning systems.
- Solar panel heating systems.
- Closed loop cooling.
- Single-family houses or apartment buildings.

SPECIFICATIONS

PUMP

- **Flow rate**: up to 3 m^3/h.
- **Head**: up to 5,5 m.
- **Maximum power consumption**: 28 W (for the 4 m model) and 50 W (for the 6 m model).
- **Temperature of pumped liquid**: -10°C ÷ +95°C.
  Non-freezing, non-condensing.
  Maximum 20% glycol and water mixture.
  For glycol quantities higher than 20%, hydraulic performances must be checked.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Rotor assembly group**: made of stainless steel/composite material/carbon.
- **Energy efficiency class**: "A" for EV+ ..-4 versions and "B" for EV+ ..-6 versions.

MOTOR

- Permanent magnet EC (Electronically Commutated) type motor with spherical rotor/stator.
- Wet rotor with a single spherical ceramic/carbon bearing.
- Integrated motor protection; no external protection required.
- Single-phase 220-240 V, 50-60 Hz power supply.
- Variable-speed motor.
- **Insulation class**: F (155°C).
- **Protection class**: IP 44.

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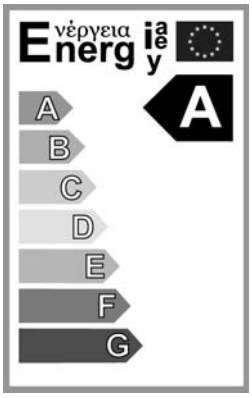
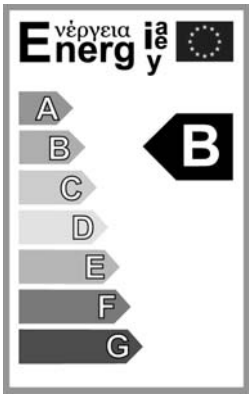
High efficiency variable speed circulators

EV+ Series (Ecocirc+ Vario)





SERIES CHARACTERISTICS

- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation onto piping, for threaded union connections.
- The design is based on spherical rotor/stator technology.
  This means that:
  - The only moving part is the spherical rotor/impeller block group that turns on a hard ceramic ball bearing.
  - Shaft seals or conventional bearing bushings with a shaft have been eliminated for a single self realigning spherical bearing.
- Blockage free rotor: the spherical motor principle does not require a manual unblocking device thanks to the small touching surface of the bearing on the ball. The starting torque required is minimal.
- The speed is controlled through the selector in the motor housing. Setting the appropriate performance is facilitated by 7 reference points on the dial of the speed adjuster knob.
- The LED in the transparent knob gives information about the operational status of the pump and troubleshooting.
- 3-core pre-mounted cable for main power supply single-phase 230 V / 50 Hz, 2 m lenght.
- Overtemperature protection feature that slows down the circulator in case the temperature of the electronic module is too high and shuts it down when temperature rises above the safety limit. The circulator will automatically restart after having cooled down.

ADVANTAGES

- Energy saving.
- Blockage free.
- Minimal maintenance.
- Easy and quick installation.

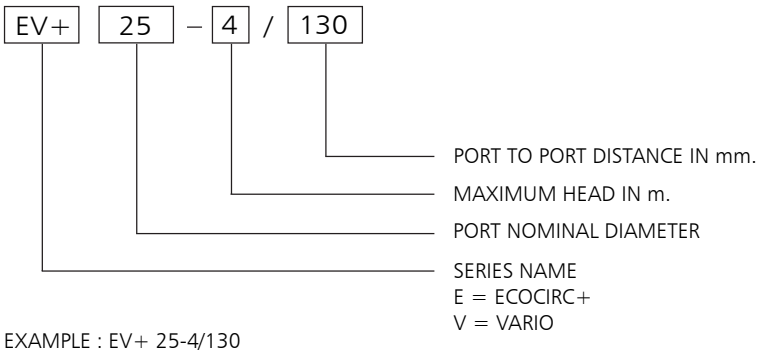
INSTALLATION

- Suitable for installation in vertical or horizontal piping, in this last case not with the motor housing upward.

CONTROL MODES

- The speed of the pump can be manually regulated to meet the requirements of the system. The software enables a choice from an infinite number of performance curves available.

EV+ SERIES
IDENTIFICATION CODE



EXAMPLE : EV+ 25-4/130

A class electronic circulator of the EV+ series, port nominal diameter = 25, max head = 4 m, with port to port distance 130 mm.

TABLE OF MATERIALS

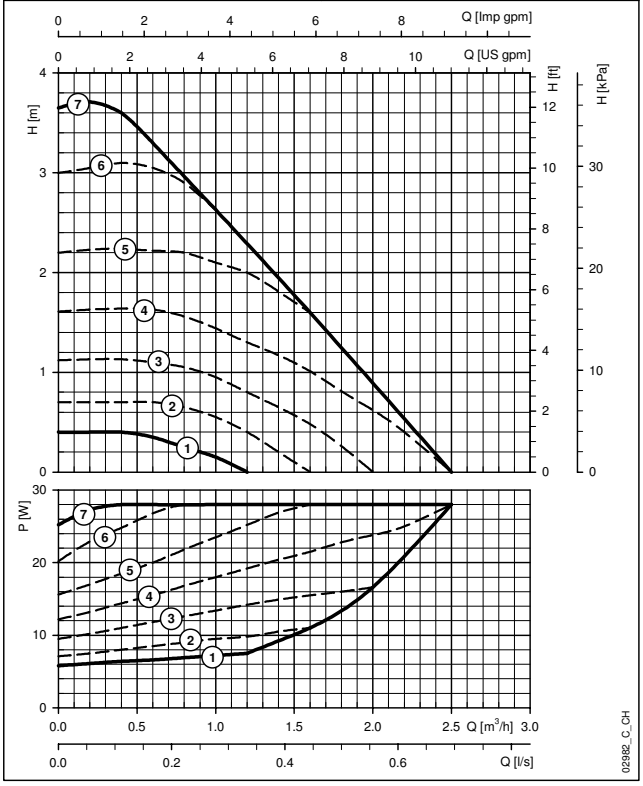
PART	MATERIAL
Pump body	Cast iron (EN-GJL-200) cataphoretically coated
Rotor assembly group	Stainless steel
	Composite material
	Carbon
Bearing	Ceramics
Gaskets	EPDM Rubber
Motor housing	Aluminum (AlSi11Cu2)
Screw ring	Aluminum (AlMgSi05)

ev-50-en_c_tm

EV+ SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

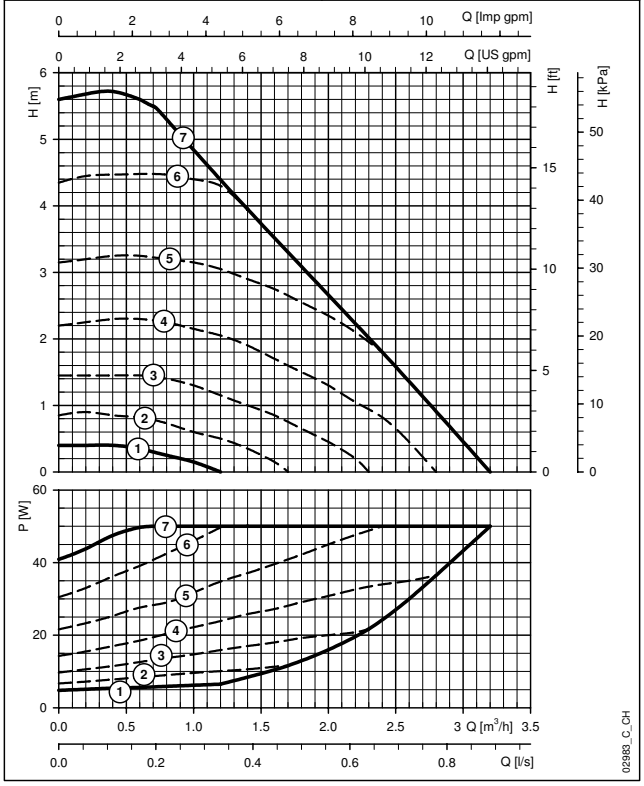
EV+ 15-4/130 EV+ 25-4/180
EV+ 20-4/130 EV+ 32-4/180
EV+ 25-4/130

EN 1151-1



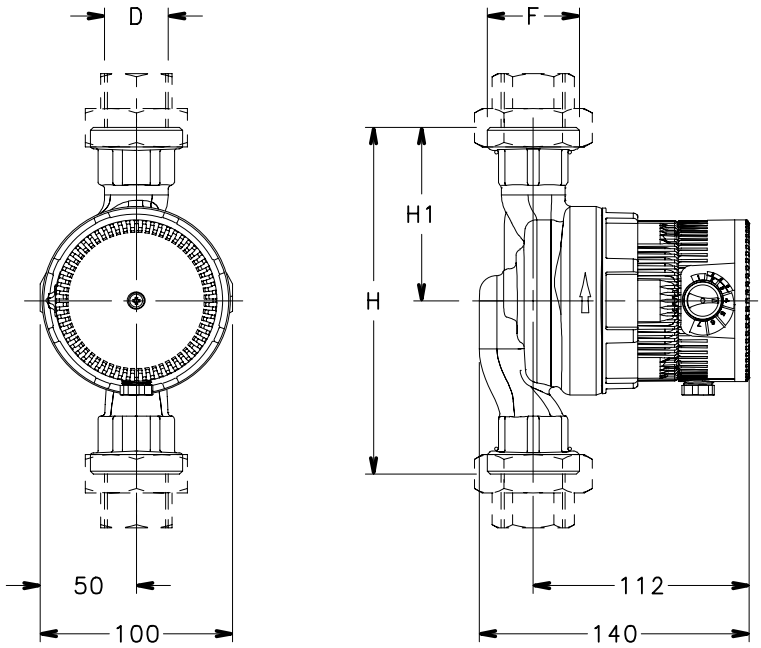
EV+ 15-6/130 EV+ 25-6/180
EV+ 20-6/130 EV+ 32-6/180
EV+ 25-6/130

EN 1151-1



These performances are valid for liquids with density $\rho = 1.0$ Kg/dm³ and kinematic viscosity $\nu = 1$ mm²/sec.
Pump operates steplessly. Lines correspond to knob settings and are for reference only.

EV+ SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)					WEIGHT
	H	H1	D	F	DN	kg
EV+ 15-4/130	130	65	1/2"	G 1"	15	1,1
EV+ 20-4/130	130	65	3/4"	G 1"¼	20	1,2
EV+ 25-4/130	130	65	1"	G 1"½	25	1,3
EV+ 25-4/180	180	90	1"	G 1"½	25	1,6
EV+ 32-4/180	180	90	1"¼	G 2"	32	1,6
EV+ 15-6/130	130	65	1/2"	G 1"	15	1,1
EV+ 20-6/130	130	65	3/4"	G 1"¼	20	1,2
EV+ 25-6/130	130	65	1"	G 1"½	25	1,3
EV+ 25-6/180	180	90	1"	G 1"½	25	1,6
EV+ 32-6/180	180	90	1"¼	G 2"	32	1,6

ev-2p50-en_c_td

HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	POWER ABSORBED		SPEED	Q = DELIVERY										
				l/s 0	0,06	0,11	0,17	2,22	0,28	0,33	0,44	0,56	0,69	0,83
	MIN	MAX		m^3/h 0	0,2	0,4	0,6	8,0	1,0	1,2	1,6	2,0	2,5	3,0
230V 50Hz	W	W		H = TOTAL HEAD METRES COLUMN OF WATER										
EV+ 15-4/130 EV+ 20-4/130 EV+ 25-4/130 EV+ 25-4/180 EV+ 32-4/180	6	28	min	0,4	0,4	0,4	0,4	0,3	0,2					
			max	3,7	3,7	3,6	3,3	3,0	2,6	2,3	1,6	0,9		
EV+ 15-6/130 EV+ 20-6/130 EV+ 25-6/130 EV+ 25-6/180 EV+ 32-6/180	6	50	min	0,4	0,4	0,4	0,4	0,3	0,2					
			max	5,6	5,7	5,7	5,6	5,3	4,8	4,4	3,5	2,7	1,6	0,4

Performances according to standards EN 1151-1

ev-50-en_d_th

High efficiency electronic circulators for hot water recirculation

EB (V) Series

MARKET SECTORS

RESIDENTIAL.

APPLICATIONS

- Hot water recirculation.
- Boiler feeding.

SPECIFICATIONS

PUMP

- **Flow rate**: up to 1 m^3/h.
- **Head**: up to 3 m.
- **Temperature of pumped liquid**: -10°C ÷ +95°C. Non-freezing, non-condensing.
- **Maximum operating pressure**: 10 bar (PN 10).
- **Rotor assembly group**: made of stainless steel/composite material/carbon.

MOTOR

- Permanent magnet EC (Electronically Commutated) type motor with spherical rotor/stator.
- Wet rotor with a single spherical ceramic/carbon ball bearing.
- Integrated motor protection; no external protection required.
- Single-phase 220-240 V, 50-60 Hz power supply.
- Variable speed motor for standard version and version with the timer. Single fixed speed motor for version with thermostat and version with timer and thermostat.
- **Insulation class**: F (155°C).
- **Protection class**: IP 44.

LOWARA
a xylem brand

High efficiency electronic circulators for hot water recirculation

EB (V) Series

SERIES CHARACTERISTICS

- Electric circulator pumps with in-line suction and discharge ports, designed for direct installation onto piping, for threaded union connections.
- The design is based on spherical rotor/stator technology.
  This means that:
  - The only moving part is the spherical rotor/impeller unit that turns on a hard ceramic ball.
  - Shaft seals or conventional bearing bushings with a shaft have been eliminated for a single self realigning spherical bearing.
- Blockage free rotor: the spherical motor principle does not require a manual unblocking device thanks to the small touching surface of the bearing on the ball. The starting torque required is minimal.
- The following versions are available:
  - variable speed (EBV version) for performance optimization based on real requirements of the system. The speed is regulated through the selector knob placed on the motor housing.
    The selection of the speed is facilitated by 7 reference points on the selector.
    In positions 2 and 3 (ECO) the consumption is particularly optimized.
    EBV version is also available with timer to limit the operation to the required daily hours.
  - fixed speed (EB version).
    EB version is also available:
    - with thermostat to maintain the water at the desidered temperature.
      The pump switches off automatically when the water is warm enough.
      The temperature can be set between 20°C and 70°C through the knob placed on the motor housing.
    - with thermostat and timer for a even higher energy saving.
  - both versions are also available with integrated ball and check valve (EB(V)..-./110).

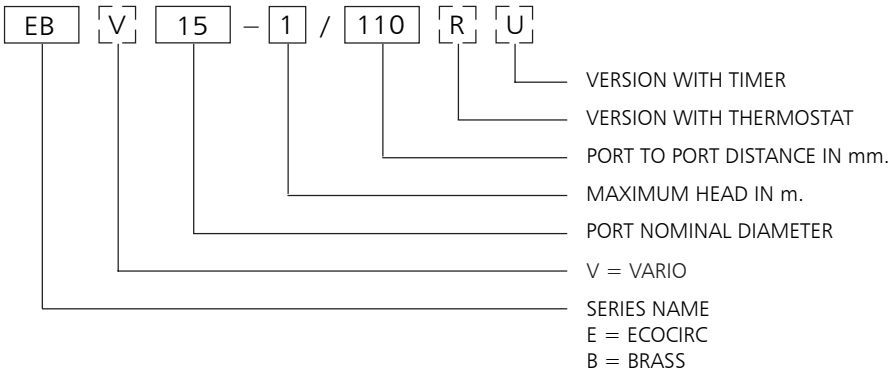
ADVANTAGES

- Energy saving.
- Blockage free.
- Minimal maintenance.
- Easy and quick installation.

INSTALLATION

- Suitable for installation in vertical or horizontal piping, in this last case not with the motor housing upward.

EB SERIES
IDENTIFICATION CODE



EXAMPLE : EB 15-1/110 RU

Electronic circulator of the EB series, port nominal diameter = 15,
max head = 1 m, port to port distance 110 mm, with temperature probes and timer.

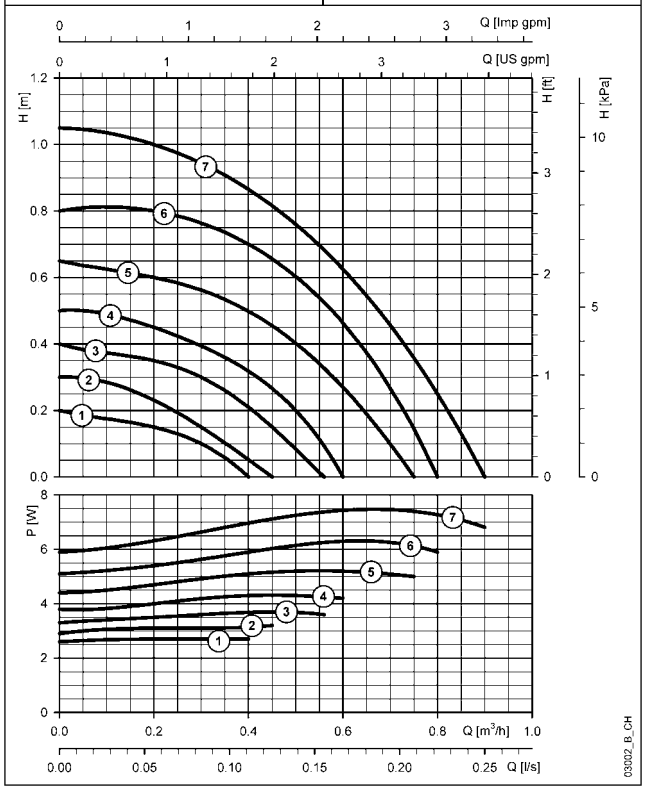
TABLE OF MATERIALS

PART	MATERIAL
Pump body	Brass
Rotor assembly group	Stainless steel
	Composite material
	Carbon
Bearing	Ceramic
Gaskets	EPDM

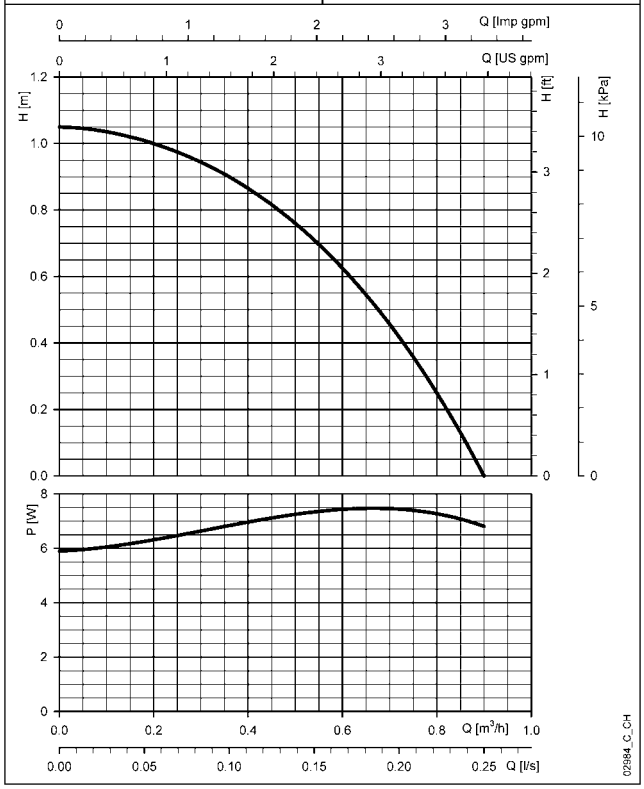
eb-50-en_b_tm

EB (V) SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

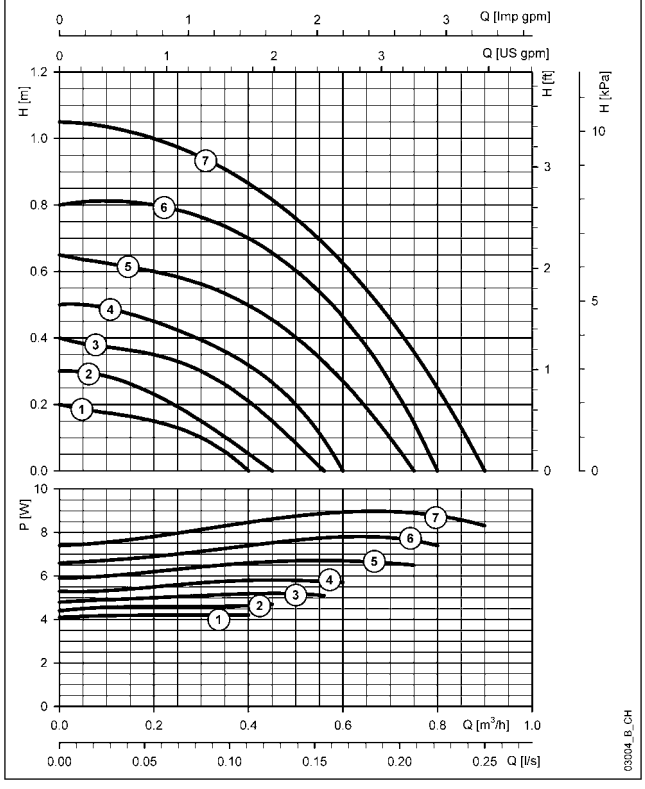
* EBV 15-1/65 | EN 1151-1



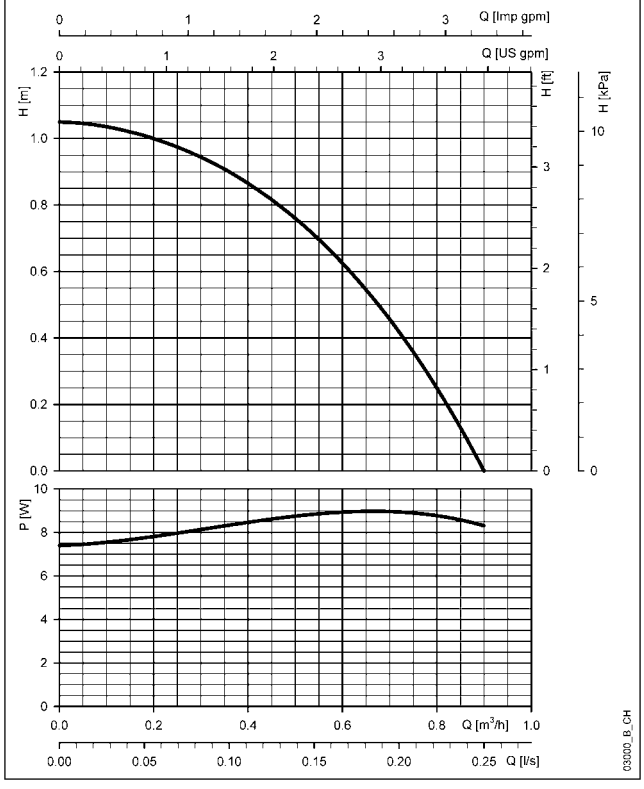
EB 15-1/65 R | EN 1151-1



* EBV 15-1/65 U | EN 1151-1



EB 15-1/65 RU | EN 1151-1



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.
* Pump operates steplessly. Lines correspond to knob settings and are for reference only.

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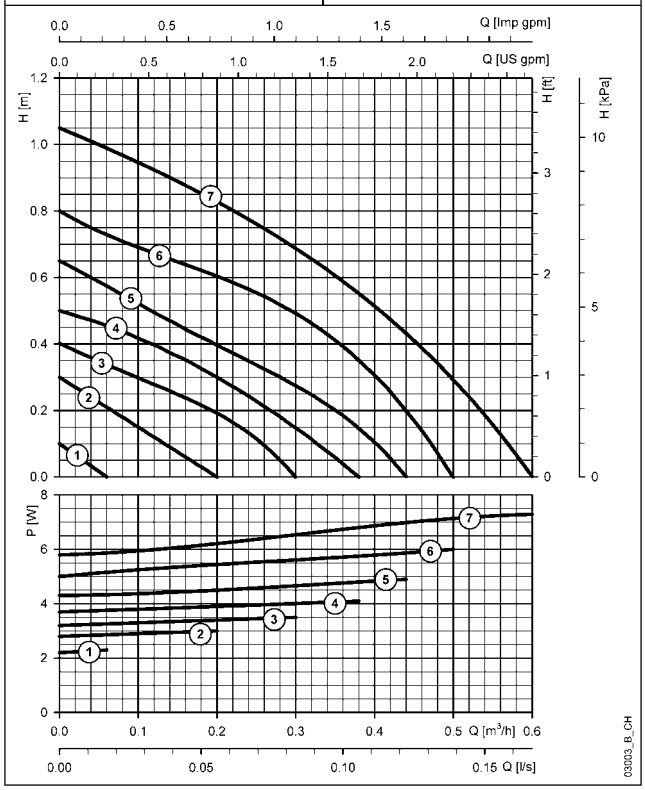
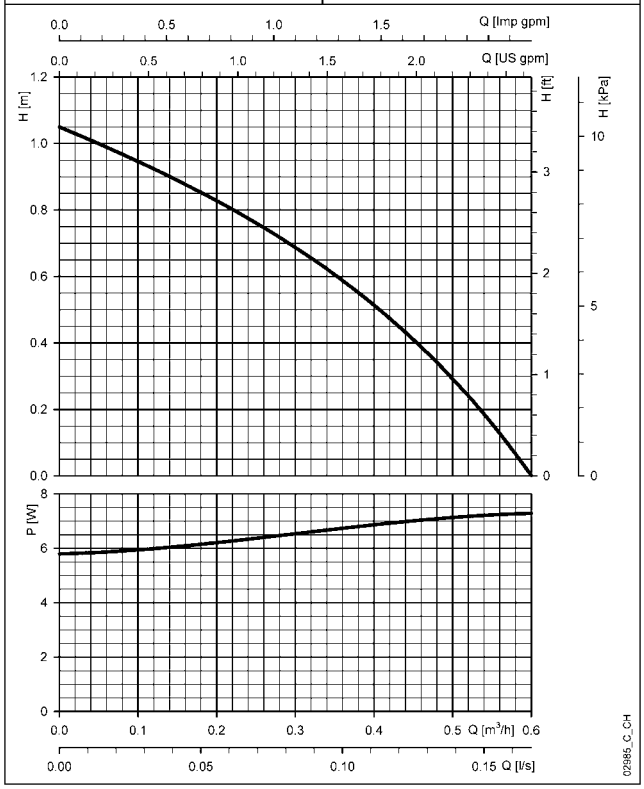
EB (V) SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

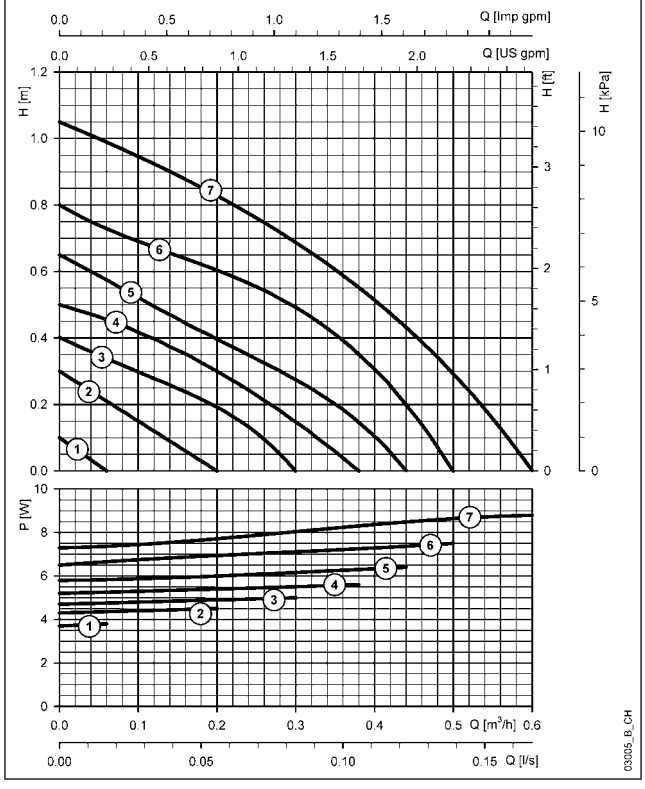
* EBV 15-1/110	EN 1151-1



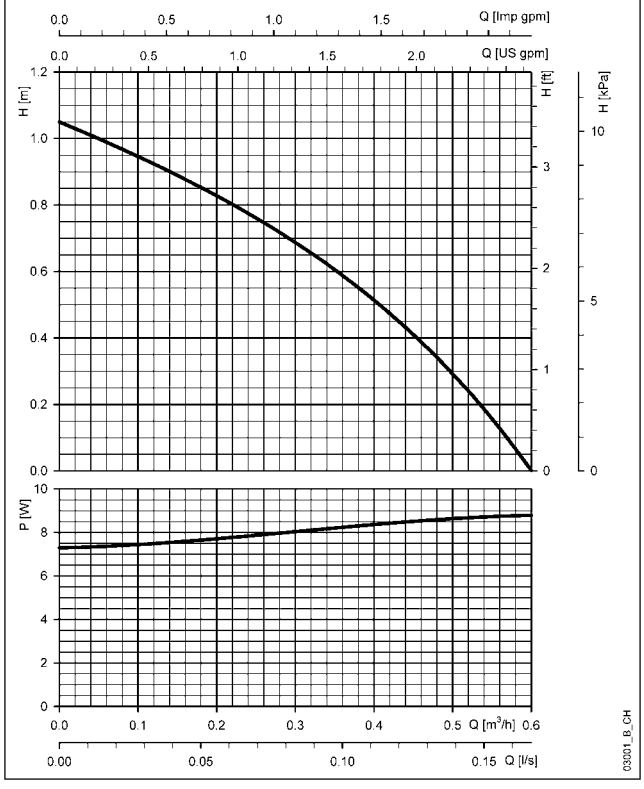
EB 15-1/110 R	EN 1151-1



* EBV 15-1/110 U	EN 1151-1



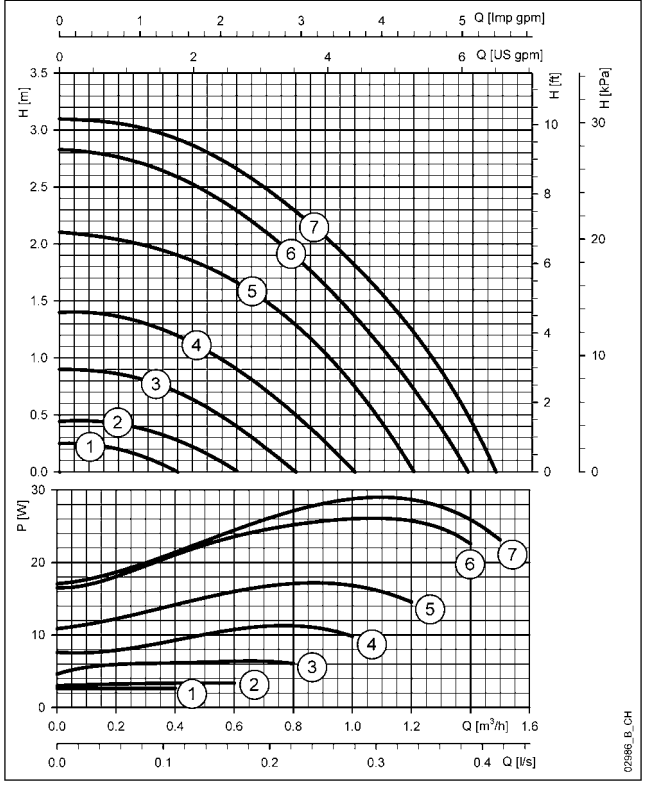
EB 15-1/110 RU	EN 1151-1



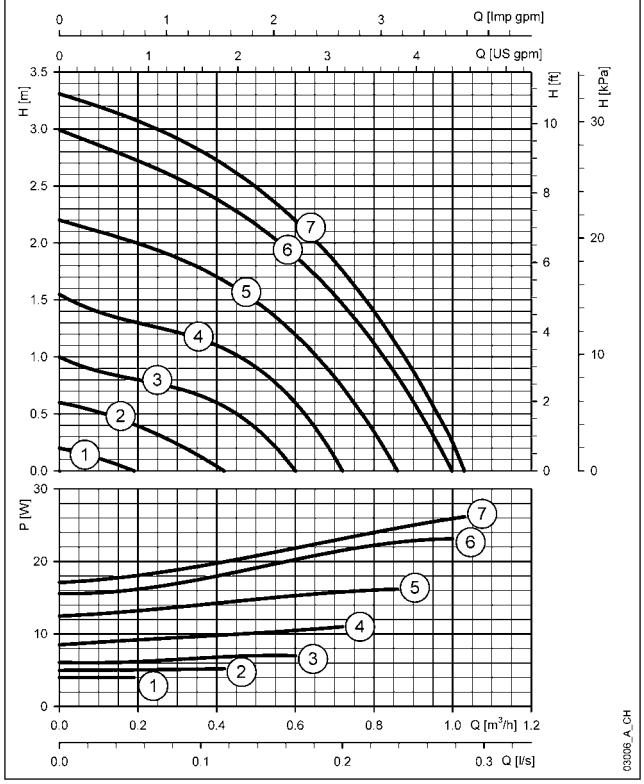
These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.
* Pump operates steplessly. Lines correspond to knob settings and are for reference only.

EB (V) SERIES
SINGLE-PHASE OPERATING CHARACTERISTICS

EBV 15-3/65 | EN 1151-1

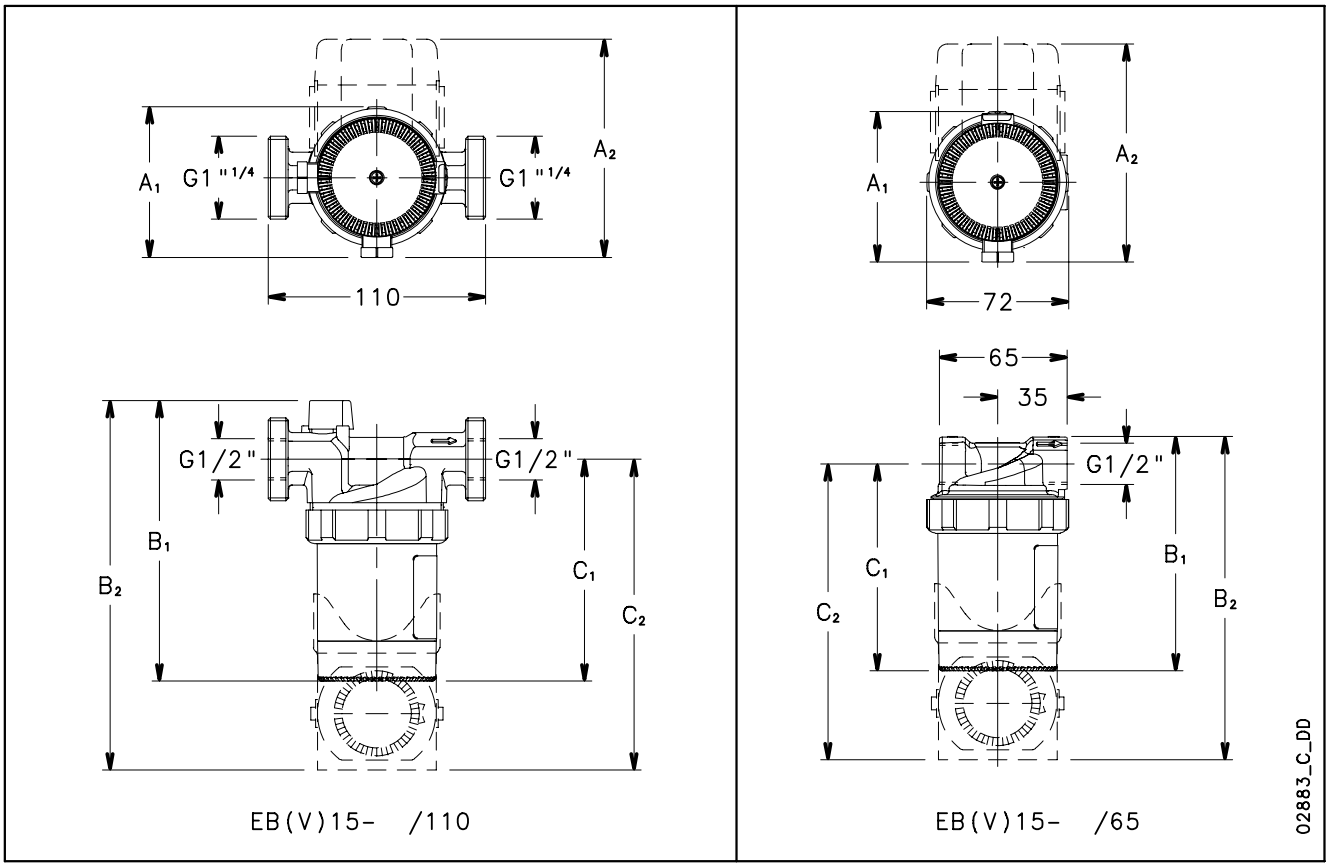


EBV 15-3/110 | EN 1151-1



These performances are valid for liquids with density ρ = 1.0 Kg/dm³ and kinematic viscosity ν = 1 mm²/sec.
Pump operates steplessly. Lines correspond to knob settings and are for reference only.

EB (V) SERIES
DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS TABLE

PUMP TYPE	DIMENSIONS (mm)							WEIGHT
	A_1	A_2	B_1	B_2	C_1	C_2	DN	kg
EBV 15-1/65 - EB 15-1/65R	76	-	118	-	105	-	15	0,9
EBV 15-1/65U - EB 15-1/65RU	-	110	-	163	-	150	15	1
EBV 15-1/110 - EB 15-1/110R	76	-	142	-	112	-	15	1,3
EBV 15-1/110U - EB 15-1/110RU	-	110	-	187	-	157	15	1,4
EBV 15-3/65	76	-	118	-	105	-	15	0,9
EBV 15-3/110	76	-	142	-	112	-	15	1,3

HYDRAULIC PERFORMANCE TABLE

eb-2p50-en_c_td

PUMP TYPE	POWER ABSORBED		SPEED	Q = DELIVERY										
				l/s 0	0,03	0,06	0,08	0,11	0,14	0,19	0,22	0,28	0,36	0,39
	MIN	MAX		m^3/h 0	0,1	0,2	0,3	0,4	0,5	0,7	0,8	1	1,3	1,4
230V 50Hz	W	W		H = TOTAL HEAD METRES COLUMN OF WATER										
EBV 15-1/65	2,6	2,7	min	0,20	0,18	0,15	0,10	0						
	5,9	7,5	max	1,05	1,04	1,00	0,94	0,86	0,76	0,46	0,25			
EB 15-1/65 R	5,9	7,5	max	1,05	1,04	1,00	0,94	0,86	0,76	0,46	0,25			
EBV 15-1/65 U	4,1	4,2	min	0,20	0,18	0,15	0,10	0						
	7,4	9,0	max	1,05	1,04	1,00	0,94	0,86	0,76	0,46	0,25			
EB 15-1/65 RU	7,4	9,0	max	1,05	1,04	1,00	0,94	0,86	0,76	0,46	0,25			
EBV 15-1/110	2,2	2,3	min	0,10										
	5,8	7,3	max	1,05	0,95	0,83	0,69	0,51	0,29					
EB 15-1/110 R	5,8	7,3	max	1,05	0,95	0,83	0,69	0,51	0,29					
EBV 15-1/110 U	3,7	3,8	min	0,10										
	7,3	8,8	max	1,05	0,95	0,83	0,69	0,51	0,29					
EB 15-1/110 RU	7,3	8,8	max	1,05	0,95	0,83	0,69	0,51	0,29					
EBV 15-3/65	2,6	2,6	min	0,25	0,24	0,20	0,12	0						
	17,1	23,7	max	3,10	3,09	3,08	3,07	3,06	3,04	3,02	3,00	2,97	2,91	2,89
EBV 15-3/110	4,0	4,0	min	0,20	0,11									
	17,1	26,6	max	3,31	3,20	3,08	2,96	2,84	2,71	2,43	2,28	1,96		

Prestazioni conformi alle norme EN 1151-1

eb-50-en_d_th

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TECHNICAL APPENDIX

TECHNICAL APPENDIX VAPOUR PRESSURE PS VAPOUR PRESSURE AND ρ DENSITY OF WATER TABLE

t	T	ps	ρ
°C	K	bar	kg/dm^3
0	273,15	0,00611	0,9998
1	274,15	0,00657	0,9999
2	275,15	0,00706	0,9999
3	276,15	0,00758	0,9999
4	277,15	0,00813	1,0000
5	278,15	0,00872	1,0000
6	279,15	0,00935	1,0000
7	280,15	0,01001	0,9999
8	281,15	0,01072	0,9999
9	282,15	0,01147	0,9998
10	283,15	0,01227	0,9997
11	284,15	0,01312	0,9997
12	285,15	0,01401	0,9996
13	286,15	0,01497	0,9994
14	287,15	0,01597	0,9993
15	288,15	0,01704	0,9992
16	289,15	0,01817	0,9990
17	290,15	0,01936	0,9988
18	291,15	0,02062	0,9987
19	292,15	0,02196	0,9985
20	293,15	0,02337	0,9983
21	294,15	0,24850	0,9981
22	295,15	0,02642	0,9978
23	296,15	0,02808	0,9976
24	297,15	0,02982	0,9974
25	298,15	0,03166	0,9971
26	299,15	0,03360	0,9968
27	300,15	0,03564	0,9966
28	301,15	0,03778	0,9963
29	302,15	0,04004	0,9960
30	303,15	0,04241	0,9957
31	304,15	0,04491	0,9954
32	305,15	0,04753	0,9951
33	306,15	0,05029	0,9947
34	307,15	0,05318	0,9944
35	308,15	0,05622	0,9940
36	309,15	0,05940	0,9937
37	310,15	0,06274	0,9933
38	311,15	0,06624	0,9930
39	312,15	0,06991	0,9927
40	313,15	0,07375	0,9923
41	314,15	0,07777	0,9919
42	315,15	0,08198	0,9915
43	316,15	0,09639	0,9911
44	317,15	0,09100	0,9907
45	318,15	0,09582	0,9902
46	319,15	0,10086	0,9898
47	320,15	0,10612	0,9894
48	321,15	0,11162	0,9889
49	322,15	0,11736	0,9884
50	323,15	0,12335	0,9880
51	324,15	0,12961	0,9876
52	325,15	0,13613	0,9871
53	326,15	0,14293	0,9862
54	327,15	0,15002	0,9862

t	T	ps	ρ
°C	K	bar	kg/dm^3
55	328,15	0,15741	0,9857
56	329,15	0,16511	0,9852
57	330,15	0,17313	0,9846
58	331,15	0,18147	0,9842
59	332,15	0,19016	0,9837
60	333,15	0,1992	0,9832
61	334,15	0,2086	0,9826
62	335,15	0,2184	0,9821
63	336,15	0,2286	0,9816
64	337,15	0,2391	0,9811
65	338,15	0,2501	0,9805
66	339,15	0,2615	0,9799
67	340,15	0,2733	0,9793
68	341,15	0,2856	0,9788
69	342,15	0,2984	0,9782
70	343,15	0,3116	0,9777
71	344,15	0,3253	0,9770
72	345,15	0,3396	0,9765
73	346,15	0,3543	0,9760
74	347,15	0,3696	0,9753
75	348,15	0,3855	0,9748
76	349,15	0,4019	0,9741
77	350,15	0,4189	0,9735
78	351,15	0,4365	0,9729
79	352,15	0,4547	0,9723
80	353,15	0,4736	0,9716
81	354,15	0,4931	0,9710
82	355,15	0,5133	0,9704
83	356,15	0,5342	0,9697
84	357,15	0,5557	0,9691
85	358,15	0,5780	0,9684
86	359,15	0,6011	0,9678
87	360,15	0,6249	0,9671
88	361,15	0,6495	0,9665
89	362,15	0,6749	0,9658
90	363,15	0,7011	0,9652
91	364,15	0,7281	0,9644
92	365,15	0,7561	0,9638
93	366,15	0,7849	0,9630
94	367,15	0,8146	0,9624
95	368,15	0,8453	0,9616
96	369,15	0,8769	0,9610
97	370,15	0,9094	0,9602
98	371,15	0,9430	0,9596
99	372,15	0,9776	0,9586
100	373,15	1,0133	0,9581
102	375,15	1,0878	0,9567
104	377,15	1,1668	0,9552
106	379,15	1,2504	0,9537
108	381,15	1,3390	0,9522
110	383,15	1,4327	0,9507
112	385,15	1,5316	0,9491
114	387,15	1,6362	0,9476
116	389,15	1,7465	0,9460
118	391,15	1,8628	0,9445

t	T	ps	ρ
°C	K	bar	kg/dm^3
120	393,15	1,9854	0,9429
122	395,15	2,1145	0,9412
124	397,15	2,2504	0,9396
126	399,15	2,3933	0,9379
128	401,15	2,5435	0,9362
130	403,15	2,7013	0,9346
132	405,15	2,867	0,9328
134	407,15	3,041	0,9311
136	409,15	3,223	0,9294
138	411,15	3,414	0,9276
140	413,15	3,614	0,9258
145	418,15	4,155	0,9214
155	428,15	5,433	0,9121
160	433,15	6,181	0,9073
165	438,15	7,008	0,9024
170	433,15	7,920	0,8973
175	448,15	8,924	0,8921
180	453,15	10,027	0,8869
185	458,15	11,233	0,8815
190	463,15	12,551	0,8760
195	468,15	13,987	0,8704
200	473,15	15,550	0,8647
205	478,15	17,243	0,8588
210	483,15	19,077	0,8528
215	488,15	21,060	0,8467
220	493,15	23,198	0,8403
225	498,15	25,501	0,8339
230	503,15	27,976	0,8273
235	508,15	30,632	0,8205
240	513,15	33,478	0,8136
245	518,15	36,523	0,8065
250	523,15	39,776	0,7992
255	528,15	43,246	0,7916
260	533,15	46,943	0,7839
265	538,15	50,877	0,7759
270	543,15	55,058	0,7678
275	548,15	59,496	0,7593
280	553,15	64,202	0,7505
285	558,15	69,186	0,7415
290	563,15	74,461	0,7321
295	568,15	80,037	0,7223
300	573,15	85,927	0,7122
305	578,15	92,144	0,7017
310	583,15	98,70	0,6906
315	588,15	105,61	0,6791
320	593,15	112,89	0,6669
325	598,15	120,56	0,6541
330	603,15	128,63	0,6404
340	613,15	146,05	0,6102
350	623,15	165,35	0,5743
360	633,15	186,75	0,5275
370	643,15	210,54	0,4518
374,15	647,30	221,20	0,3154

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TABLE OF FLOW RESISTANCE IN 100 m OF STRAIGHT CAST IRON PIPELINE (HAZEN-WILLIAMS FORMULA C=100)

FLOW RATE			NOMINAL DIAMETER in mm and INCHES																
m^3/h	l/min		15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2	65 2 1/2"	80 3"	100 4"	125 5"	150 6"	175 7"	200 8"	250 10"	300 12"	350 14"	400 16"
0,6	10	v	0,94	0,53	0,34	0,21	0,13												
		hr	16	3,94	1,33	0,40	0,13												
0,9	15	v	1,42	0,80	0,51	0,31	0,20												
		hr	33,9	8,35	2,82	0,85	0,29												
1,2	20	v	1,89	1,06	0,68	0,41	0,27	0,17											
		hr	57,7	14,21	4,79	1,44	0,49	0,16											
1,5	25	v	2,36	1,33	0,85	0,52	0,33	0,21											
		hr	87,2	21,5	7,24	2,18	0,73	0,25											
1,8	30	v	2,83	1,59	1,02	0,62	0,40	0,25											
		hr	122	30,1	10,1	3,05	1,03	0,35											
2,1	35	v	3,30	1,86	1,19	0,73	0,46	0,30											
		hr	162	40,0	13,5	4,06	1,37	0,46											
2,4	40	v		2,12	1,36	0,83	0,53	0,34	0,20										
		hr		51,2	17,3	5,19	1,75	0,59	0,16										
3	50	v		2,65	1,70	1,04	0,66	0,42	0,25										
		hr		77,4	26,1	7,85	2,65	0,89	0,25										
3,6	60	v		3,18	2,04	1,24	0,80	0,51	0,30										
		hr		108	36,6	11,0	3,71	1,25	0,35										
4,2	70	v		3,72	2,38	1,45	0,93	0,59	0,35										
		hr		144	48,7	14,6	4,93	1,66	0,46										
4,8	80	v		4,25	2,72	1,66	1,06	0,68	0,40										
		hr		185	62,3	18,7	6,32	2,13	0,59										
5,4	90	v			3,06	1,87	1,19	0,76	0,45	0,30									
		hr			77,5	23,3	7,85	2,65	0,74	0,27									
6	100	v			3,40	2,07	1,33	0,85	0,50	0,33									
		hr			94,1	28,3	9,54	3,22	0,90	0,33									
7,5	125	v			4,25	2,59	1,66	1,06	0,63	0,41									
		hr			142	42,8	14,4	4,86	1,36	0,49									
9	150	v				3,11	1,99	1,27	0,75	0,50	0,32								
		hr				59,9	20,2	6,82	1,90	0,69	0,23								
10,5	175	v				3,63	2,32	1,49	0,88	0,58	0,37								
		hr				79,7	26,9	9,07	2,53	0,92	0,31								
12	200	v				4,15	2,65	1,70	1,01	0,66	0,42								
		hr				102	34,4	11,6	3,23	1,18	0,40								
15	250	v				5,18	3,32	2,12	1,26	0,83	0,53	0,34							
		hr				154	52,0	17,5	4,89	1,78	0,60	0,20							
18	300	v					3,98	2,55	1,51	1,00	0,64	0,41							
		hr					72,8	24,6	6,85	2,49	0,84	0,28							
24	400	v					5,31	3,40	2,01	1,33	0,85	0,54	0,38						
		hr					124	41,8	11,66	4,24	1,43	0,48	0,20						
30	500	v					6,63	4,25	2,51	1,66	1,06	0,68	0,47						
		hr					187	63,2	17,6	6,41	2,16	0,73	0,30						
36	600	v						5,10	3,02	1,99	1,27	0,82	0,57	0,42					
		hr						88,6	24,7	8,98	3,03	1,02	0,42	0,20					
42	700	v						5,94	3,52	2,32	1,49	0,95	0,66	0,49					
		hr						118	32,8	11,9	4,03	1,36	0,56	0,26					
48	800	v						6,79	4,02	2,65	1,70	1,09	0,75	0,55					
		hr						151	42,0	15,3	5,16	1,74	0,72	0,34					
54	900	v						7,64	4,52	2,99	1,91	1,22	0,85	0,62					
		hr						188	52,3	19,0	6,41	2,16	0,89	0,42					
60	1000	v							5,03	3,32	2,12	1,36	0,94	0,69	0,53				
		hr							63,5	23,1	7,79	2,63	1,08	0,51	0,27				
75	1250	v							6,28	4,15	2,65	1,70	1,18	0,87	0,66				
		hr							96,0	34,9	11,8	3,97	1,63	0,77	0,40				
90	1500	v							7,54	4,98	3,18	2,04	1,42	1,04	0,80				
		hr							134	48,9	16,5	5,57	2,29	1,08	0,56				
105	1750	v							8,79	5,81	3,72	2,38	1,65	1,21	0,93				
		hr							179	65,1	21,9	7,40	3,05	1,44	0,75				
120	2000	v								6,63	4,25	2,72	1,89	1,39	1,06	0,68			
		hr								83,3	28,1	9,48	3,90	1,84	0,96	0,32			
150	2500	v								8,29	5,31	3,40	2,36	1,73	1,33	0,85			
		hr								126	42,5	14,3	5,89	2,78	1,45	0,49			
180	3000	v									6,37	4,08	2,83	2,08	1,59	1,02	0,71		
		hr									59,5	20,1	8,26	3,90	2,03	0,69	0,28		
210	3500	v									7,43	4,76	3,30	2,43	1,86	1,19	0,83		
		hr									79,1	26,7	11,0	5,18	2,71	0,91	0,38		
240	4000	v									8,49	5,44	3,77	2,77	2,12	1,36	0,94		
		hr									101	34,2	14,1	6,64	3,46	1,17	0,48		
300	5000	v										6,79	4,72	3,47	2,65	1,70	1,18		
		hr										51,6	21,2	10,0	5,23	1,77	0,73		
360	6000	v										8,15	5,66	4,16	3,18	2,04	1,42		
		hr										72,3	29,8	14,1	7,33	2,47	1,02		
420	7000	v											6,61	4,85	3,72	2,38	1,65	1,21	
		hr											39,6	18,7	9,75	3,29	1,35	0,64	
480	8000	v											7,55	5,55	4,25	2,72	1,89	1,39	
		hr											50,7	23,9	12,49	4,21	1,73	0,82	
540	9000	v											8,49	6,24	4,78	3,06	2,12	1,56	1,19
		hr											63,0	29,8	15,5	5,24	2,16	1,02	0,53
600	10000	v												6,93	5,31	3,40	2,36	1,73	1,33
		hr												36,2	18,9	6,36	2,62	1,24	0,65

The hr values must be multiplied by:
0.71 for galvanized or painted steel pipes
0.54 for stainless steel or copper pipes
0.47 for PVC or PE pipes

G-at-pct_a_th

hr = flow resistance for 100m of straight pipeline (m)
V = water speed (m/s)

FLOW RESISTANCE

TABLE OF FLOW RESISTANCE IN BENDS, VALVES AND GATES

The flow resistance is calculated using the equivalent pipeline length method according to the table below:

ACCESSORY TYPE	DN											
	25	32	40	50	65	80	100	125	150	200	250	300
	Equivalent pipeline length (m)											
45° bend	0,2	0,2	0,4	0,4	0,6	0,6	0,9	1,1	1,5	1,9	2,4	2,8
90° bend	0,4	0,6	0,9	1,1	1,3	1,5	2,1	2,6	3,0	3,9	4,7	5,8
90° smooth bend	0,4	0,4	0,4	0,6	0,9	1,1	1,3	1,7	1,9	2,8	3,4	3,9
Union tee or cross	1,1	1,3	1,7	2,1	2,6	3,2	4,3	5,3	6,4	7,5	10,7	12,8
Gate	-	-	-	0,2	0,2	0,2	0,4	0,4	0,6	0,9	1,1	1,3
Non return valve	1,1	1,5	1,9	2,4	3,0	3,4	4,7	5,9	7,4	9,6	11,8	13,9

G-a-pcv_a_th

The table is valid for the Hazen Williams coefficient C = 100 (cast iron pipework). For steel pipework, multiply the values by 1.41. For stainless steel, copper and coated cast iron pipework, multiply the values by 1.85.
When the **equivalent pipeline length** has been determined, the flow resistance is obtained from the table of flow resistance.
The values given are guideline values which are bound to vary slightly according to the model, especially for gate valves and non-return valves, for which it is a good idea to check the values supplied by the manufacturers.

VOLUMETRIC CAPACITY

Litres per minute l/min	Cubic metres per hour m^3/h	Cubic feet per hour ft^3/h	Cubic feet per minute ft^3/min	Imp. gal. per minute Imp. gal/min	US gal. per minute Us gal./min
1,0000	0,0600	2,1189	0,0353	0,2200	0,2642
16,6667	**1,0000**	35,3147	0,5886	3,6662	4,4029
0,4719	0,0283	**1,0000**	0,0167	0,1038	0,1247
28,3168	1,6990	60,0000	**1,0000**	6,2288	7,4805
4,5461	0,2728	9,6326	0,1605	**1,0000**	1,2009
3,7854	0,2271	8,0208	0,1337	0,8327	**1,0000**

PRESSURE AND HEAD

Newton per square metre N/m^2	kilo Pascal kPa	bar bar	Pound force per square inch psi	metre of water m H_2O	millimetre of mercury mm Hg
1,0000	0,0010	1×10^{-5}	1.45×10^{-4}	1.02×10^{-4}	0,0075
1000,0000	**1,0000**	0,0100	0,1450	0,1020	7,5006
1×10^{5}	100,0000	**1,0000**	14,5038	10,1972	750,0638
6894,7570	6,8948	0,0689	**1,0000**	0,7031	51,7151
9806,6500	9,8067	0,0981	1,4223	**1,0000**	73,5561
133,3220	0,1333	0,0013	0,0193	0,0136	**1,0000**

LENGHT

millimetre mm	centimetre cm	metre m	inch in	foot ft	yard yd
1,0000	0,1000	0,0010	0,0394	0,0033	0,0011
10,0000	**1,0000**	0,0100	0,3937	0,0328	0,0109
1000,0000	100,0000	**1,0000**	39,3701	3,2808	1,0936
25,4000	2,5400	0,0254	**1,0000**	0,0833	0,0278
304,8000	30,4800	0,3048	12,0000	**1,0000**	0,3333
914,4000	91,4400	0,9144	36,0000	3,0000	**1,0000**

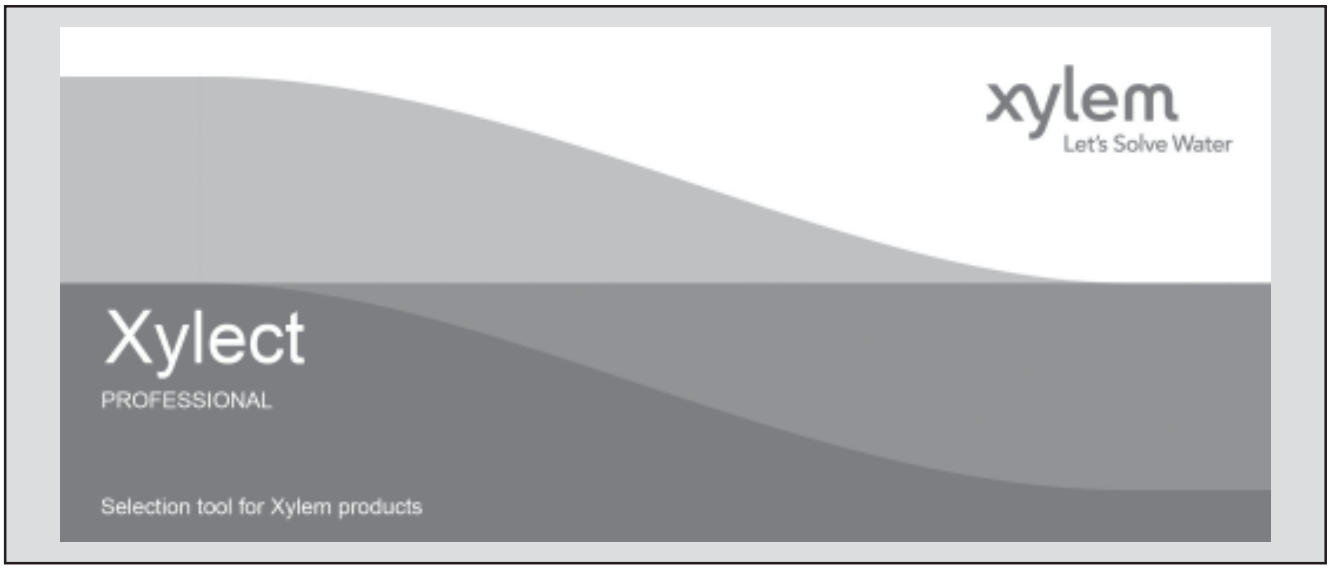
VOLUME

cubic metre m^3	litre litro	millilitre ml	imp. Gallon imp. gal.	US gallon US gal.	cubic foot ft^3
1,0000	1000,0000	1×10^{6}	219,9694	264,1720	35,3147
0,0010	**1,0000**	1000,0000	0,2200	0,2642	0,0353
1×10^{-6}	0,0010	**1,0000**	2.2×10^{-4}	2.642×10^{-4}	3.53×10^{-5}
0,0045	4,5461	4546,0870	**1,0000**	1,2009	0,1605
0,0038	3,7854	3785,4120	0,8327	**1,0000**	0,1337
0,0283	28,3168	28316,8466	6,2288	7,4805	**1,0000**

G-at_pp-en_a_sc

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect



Xylect is pump solution selection software with an extensive online database of product information across the entire Lowara, and Vogel range of pumps and related products, with multiple search options and helpful project management facilities. The system holds up-to-date product information on thousands of products and accessories.

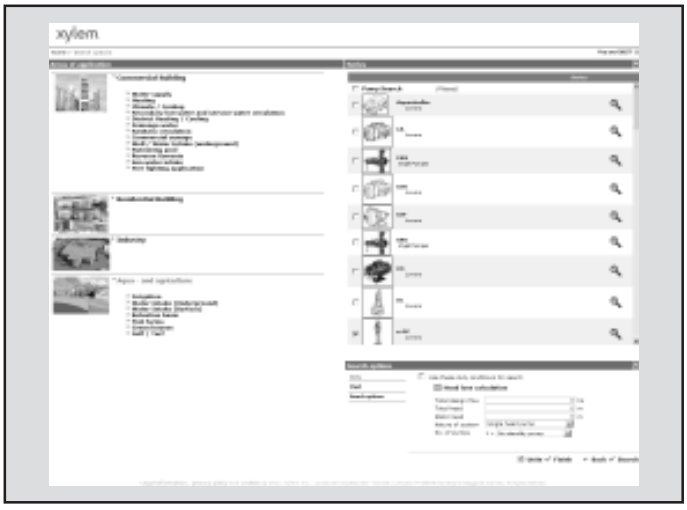
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara and Vogel products.

The search can be made by:

- Application
- Product type
- Duty point

Xylect gives a detailed output:

- List with search results
- Performance curves (flow, head, power, efficiency, NPSH)
- Motor data
- Dimensional drawings
- Options
- Data sheet printouts
- Document downloads incl dxf files



The search by application guides users not familiar with the product range to the right choice.

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect

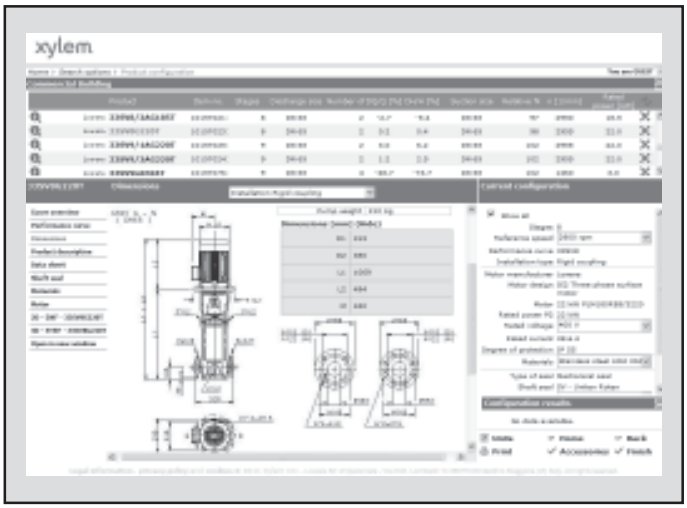
The detailed output makes it easy to select the optimal pump from the given alternatives.

The best way to work with Xylect is to create a personal account. This makes it possible to:

- Set own standard units
- Create and save projects
- Share projects with other Xylect users

Every user have a My Xylect space, where all projects are saved.

For more information about Xylect please contact our sales network or visit www.xylect.com.



Dimensional drawings appear on the screen and can be downloaded in dxf format.

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2) a leading global water technology company.

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