

Submersible Electric Pumps

FXDL-FBDL Series



MARKET SECTORS

CHEMICAL, FOOD PROCESSING AND MARINE INDUSTRIES.

APPLICATIONS

- Pumping of chemically aggressive liquids, even those containing suspended solids (FXDL version), pumping of seawater.

SPECIFICATIONS

- **Delivery:** up to 108 m³/h.
- **Head:** up to 44 m.
- Maximum liquid **temperature:** 25-40°C (see hydraulic performance table).
- Maximum immersion depth: 20 m.
- **Passes solids** 6 to 30 mm in diameter (see hydraulic performance table).
- Motor with IP 68 protection and class F insulation (155°C) for the FBDL series, class H (170°C) for the FXDL series.
 - Power supply: three-phase, 50 Hz (also single-phase, 50 Hz for FBDL).
- **Motor power:** up to 7 kW.
- Maximum number of starts per hour: approx. 20 (possibly more, depending on the application).

CONSTRUCTION CHARACTERISTICS

- Sturdy construction with liquid end and casing made of AISI 316 stainless steel (FXDL) or B10 steel bronze (FBDL).
- Open **impeller**, vortex or channel type depending on the model.
- Double seal: Silicon Carbide / Silicon Carbide inner seal, Ceramic / Carbon upper seal or Nitrile Rubber seal ring with interposed oil chamber.
- Adjustable volute bottom cover to compensate for impeller wear and ensure stable long-lasting hydraulic performances.
- Oversized motor bearings.
- 10-metre power supply cable with neoprene sheath (H07RN-F).
- Moisture sensor in oil chamber (see electric data table).
- The FXDL models are equipped with threaded stainless steel cable gland for mounting a stainless steel tube for protection of the power cable.

OPTIONAL FEATURES

- Ceramic treatment
- Cooling sleeve for dry installations
- Versions without float.
- Flameproof construction (EEx).

ACCESSORIES / INSTALLATION

- Lowering system.
- 90° delivery union.
- Threaded flange for delivery port.
- Tripod stand.
- Non-return ball valves.
- Floats for solids-laden waters.
- Command and control panels.

IDENTIFICATION CODE

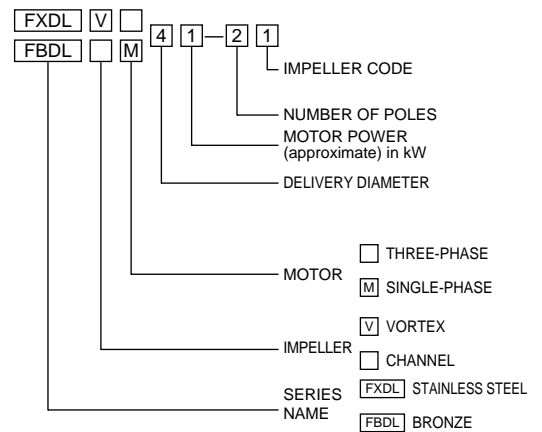


TABLE OF MATERIALS

PART	FDLT MATERIAL
Impeller, Pump body, Motor casing, Volute bottom, Upper cover	FXDL: STAINLESS STEEL (AISI 316) FBDL: B10 STEEL BRONZE
Shaft	STAINLESS STEEL (AISI 316L)
Bearings	LIFETIME LUBRICATED BALL TYPE
Upper seal	CERAMIC-GRAPHITE OR NITRILE RUBBER SEAL RING
Lower seal	FXDL: SILICON CARBIDE/SILICON CARBIDE FBDL: SILICON CARBIDE/SILICON CARBIDE
Gaskets	FXDL: FPM FBDL: NITRILE RUBBER
Bolts and screws	STAINLESS STEEL (AISI 316)

FXDL SERIES ELECTRICAL DATA (50 Hz)

PUMP TYPE	ABSORBED POWER*	rpm	ABSORBED CURRENT In(A)			STARTING CURRENT Isp (A)		ELECTRIC CABLE TYPE	STATOR THERMAL PROTECTION**	WATER SENSOR IN OIL CHAMBER**
			220-240 V	380-415 V		220-240 V	380-415 V			
			Δ	Y	Δ	A	A			
DRAINAGE IMPELLER										
FXDL 41-21	1	2850	3,3	1,9		15,1	8,7	4G1,5	NO	NO
FXDL 53-22	3,2	2850	9,5	5,5		55,2	31,9	4G2,5	NO	NO
FXDL 56-23	6	2850	17,5		10,1	115,3	66,7	12G1,5	YES	YES
FXDL 56-22	6,6	2850	19,7		11,4	130,2	75,2	12G1,5	YES	YES
FXDL 56-21	9	2850	22,1		12,8	146,2	84,5	12G1,5	YES	YES
SINGLE-CHANNEL IMPELLER										
FXDL 62-22	1,7	2850	5,0	2,9		18,6	10,7	4G2,5	NO	NO
FXDL 62-21	2,2	2850	6,4	3,7		37,1	21,5	4G2,5	NO	NO
MULTIPLE-CHANNEL IMPELLER										
FXDL 64-22	3,8	2850	11,6	6,7		67,2	38,9	4G2,5	NO	NO
FXDL 65-22	5,2	2850	15,2		8,8	99,0	57,2	12G1,5	YES	YES
FXDL 66-21	6,6	2850	19,0		11	123,7	71,5	12G1,5	YES	YES
VORTEX IMPELLER										
FXDLV 41-21	0,8	2850	3,1	1,8		14,3	8,3	4G1,5	NO	NO

*Maximum values within the operating range

Fxdl-2p50_b_te

**Featured in the standard version

FBDL SERIES ELECTRICAL DATA (50 Hz)

PUMP TYPE	ABSORBED POWER*	rpm	ABSORBED CURRENT In(A)			STARTING CURRENT Isp (A)		ELECTRIC CABLE TYPE	STATOR THERMAL PROTECTION**	WATER SENSOR IN OIL CHAMBER**
			220-240 V	380-415 V		220-240 V	380-415 V			
			Δ	Y	Δ	A	A			
SINGLE-CHANNEL IMPELLER										
FBDL 62-22	1,7	2850	5,0	2,9		18,6	10,7	4G2,5	NO	NO
FBDL 62-21	2,2	2850	6,4	3,7		36,5	21,1	4G2,5	NO	NO
MULTIPLE-CHANNEL IMPELLER										
FBDL 64-22	3,5	2850	10,0	5,8		58,2	33,6	4G2,5	NO	NO
FBDL 65-22	5,2	2850	15,2		8,8	99,0	57,2	12G1,5	YES	YES
FBDL 66-21	6,6	2850	19,0		11	123,7	71,5	12G1,5	YES	YES
FBDLV 40-21	0,5	2850	1,7	1		6,4	3,7	4G1	NO	NO

PUMP TYPE	ABSORBED POWER*	rpm	ABSORBED CURRENT In(A) 220-240 V	CAPACITOR		STARTING CURRENT A	ELECTRIC CABLE TYPE	STATOR THERMAL PROTECTION	WATER SENSOR IN OIL CHAMBER
				μf	V				
SINGLE-CHANNEL IMPELLER									
FBDLM 62-22	1,8	2850	8,7	35	450	35,7	4G2,5	NO	NO
VORTEX IMPELLER									
FBDLVM 40-21	0,5	2850	2,3	35	450	7,1	3G1	YES	NO

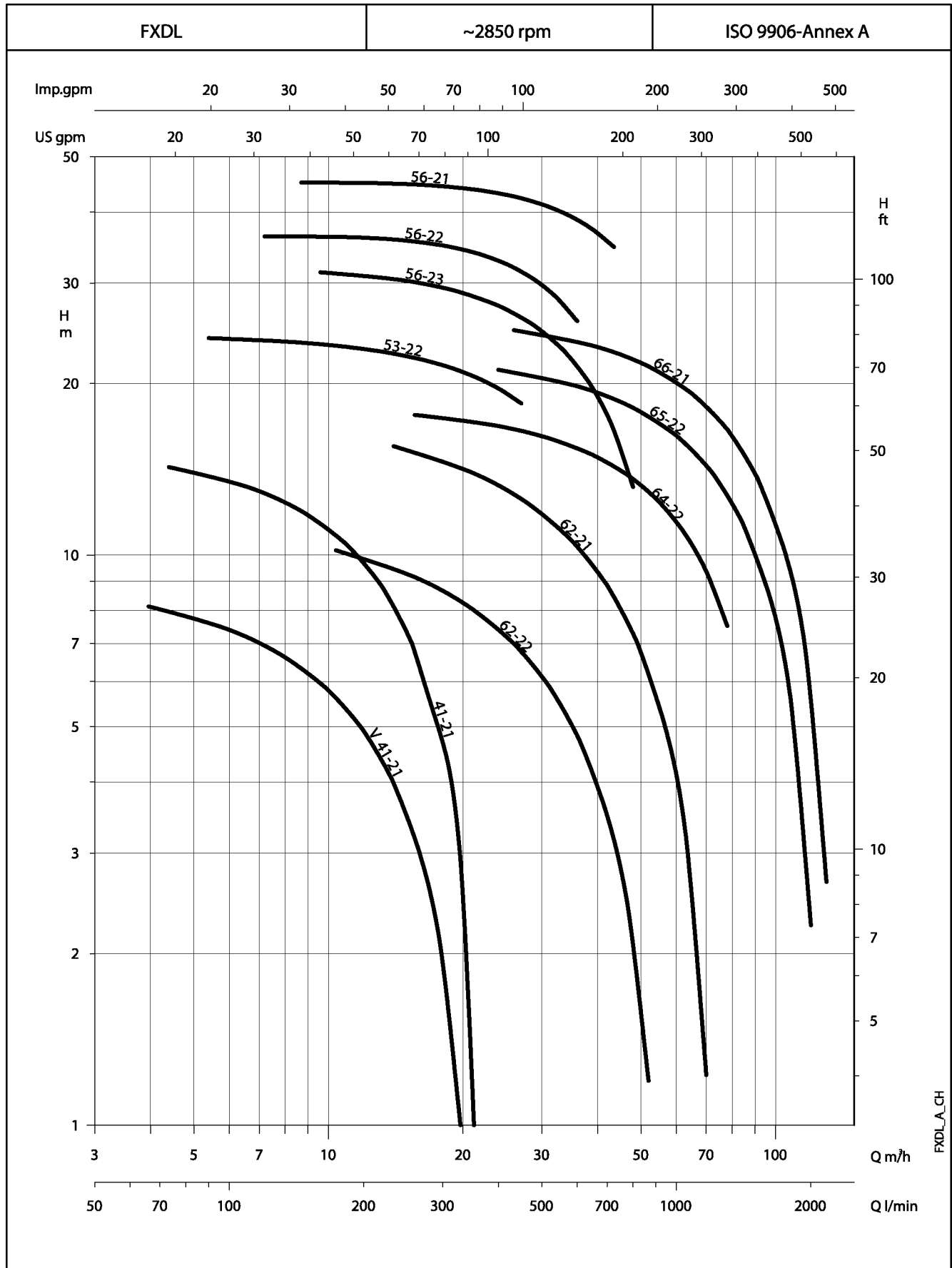
*Maximum values within the operating range

Fbdl-2p50_b_te

**Featured in the standard version

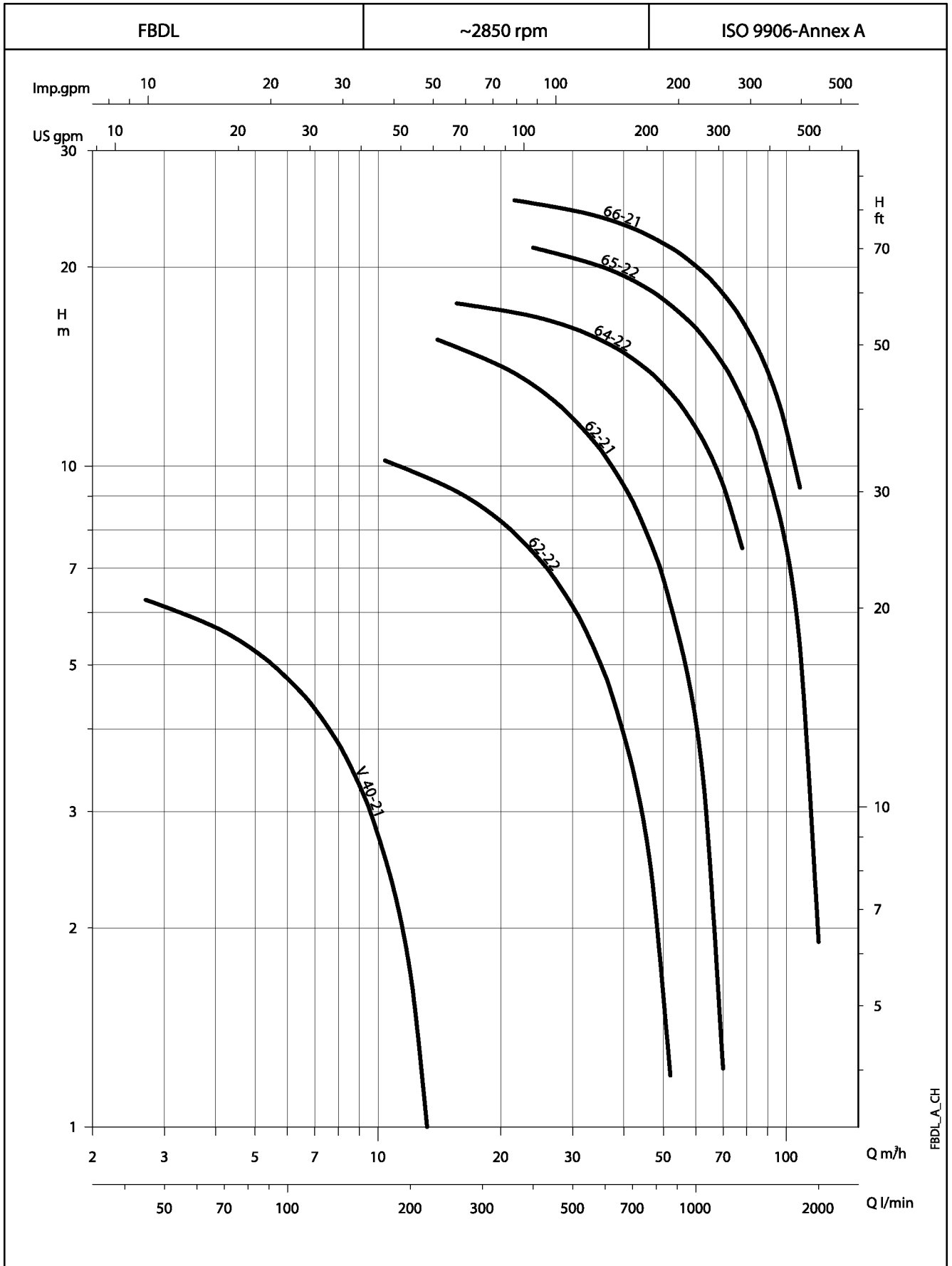


**FXDL SERIES
OPERATING CHARACTERISTICS AT 50 Hz**





FBDL SERIES OPERATING CHARACTERISTICS AT 50 Hz





FXDL SERIES HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	ABS. POW. kW	rpm	Q = DELIVERY												DNM	PASSES SOLIDS UP TO (mm)	MAX LIQUID TEMP. °C
			l/min 0	50	100	150	200	300	400	600	800	1000	1200				
			m ³ /h 0	3	6	9	12	18	24	36	48	60	72				
H = TOTAL HEAD METERS COLUMN OF WATER																	
FXDLV 41-21	0,8	2850	9,4	8,5	7,4	6,2	4,9	2,0						Rp 1 1/2	30	40	
FXDL 41-21	1,0	2850	16,0	14,9	13,5	11,8	9,7	4,6						Rp 1 1/2	6	40	
FXDL 53-22	3,2	2850	24,4	24,3	24,0	23,5	23,0	21,5	19,6					Rp 2	7	40	
FXDL 62-22	1,7	2850	12,2	11,6	11,1	10,5	9,9	8,7	7,4	4,8	2,1			70	28	40	
FXDL 62-21	2,2	2850	18,5	17,9	17,3	16,6	16,0	14,6	13,3	10,4	7,3	4,1		70	30	40	
FXDL 64-22	3,8	2850	18,6	18,5	18,3	18,1	17,9	17,4	16,8	15,4	13,6	11,4	8,9	70	30	25	
FXDL 56-23	6,0	2850	32,1	32,0	31,8	31,4	30,9	29,5	27,4	21,5	13,2			Rp 2	8	40	
FXDL 56-22	6,6	2850	35,3	35,9	36,2	36,2	36,0	34,9	32,9	25,7				Rp 2	8	40	
FXDL 56-21	9,0	2850	44,3	44,7	44,9	45,0	45,0	44,4	43,1	38,8				Rp 2	8	40	

PERFORMANCES MEASURED WITH PURE WATER AT 20°C

FXDL_B_TH

FBDL SERIES HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	ABS. POW. kW	rpm	Q = DELIVERY												DNM	PASSES SOLIDS UP TO (mm)	MAX LIQUID TEMP. °C
			l/min 0	50	75	100	150	175	200	250	400	600	1000				
			m ³ /h 0	3	4,5	6	9	10,5	12	15	24	36	60				
H = TOTAL HEAD METERS COLUMN OF WATER																	
FBDLVM 40-21	0,5	2850	8,4	7,0	6,3	5,6	4,0	3,2	2,3					Rp 1 1/4	30	40	
FBDLM 62-22	1,8	2850	12,4	11,7	11,4	11,1	10,5	10,1	9,8	9,2	7,2	4,6		70	28	25	
FBDLV 40-21	0,5	2850	7,4	6,1	5,5	4,8	3,3	2,5	1,7					Rp 1 1/4	30	40	
FBDL 62-22	1,7	2850	12,2	11,6	11,3	11,1	10,5	10,2	9,9	9,3	7,4	4,8		70	28	40	
FBDL 62-21	2,2	2850	18,5	17,9	17,6	17,3	16,6	16,3	16,0	15,3	13,3	10,4	4,1	70	30	40	

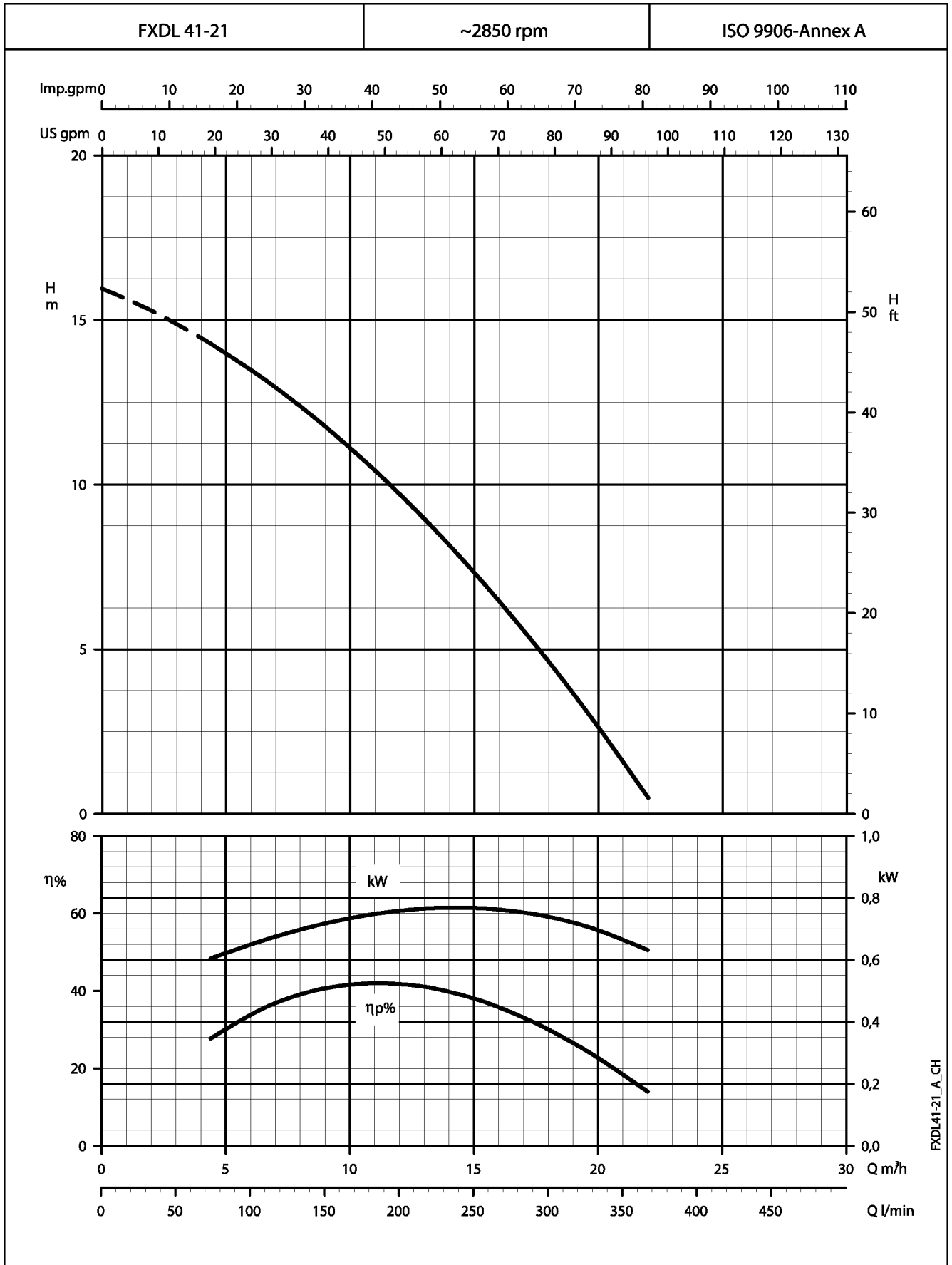
PUMP TYPE	ABS. POW. kW	rpm	Q = DELIVERY												DNM	PASSES SOLIDS UP TO (mm)	MAX LIQUID TEMP. °C
			l/min 0	125	175	250	400	600	800	1000	1200	1400	1800				
			m ³ /h 0	7,5	10,5	15	24	36	48	60	72	84	108				
H = TOTAL HEAD METERS COLUMN OF WATER																	
FBDL 64-22	3,5	2850	18,6	18,2	18,0	17,7	16,8	15,4	13,6	11,4	8,9			70	30	25	
FBDL 65-22	5,2	2850	23,5	22,9	22,7	22,3	21,4	19,9	18,2	16,2	13,9	11,3	5,3	70	30	40	
FBDL 66-21	6,6	2850	26,7	26,3	26,1	25,8	25,0	23,7	22,0	20,1	17,9	15,3	9,3	70	30	40	

PERFORMANCES MEASURED WITH PURE WATER AT 20°C

FBDL_B_TH



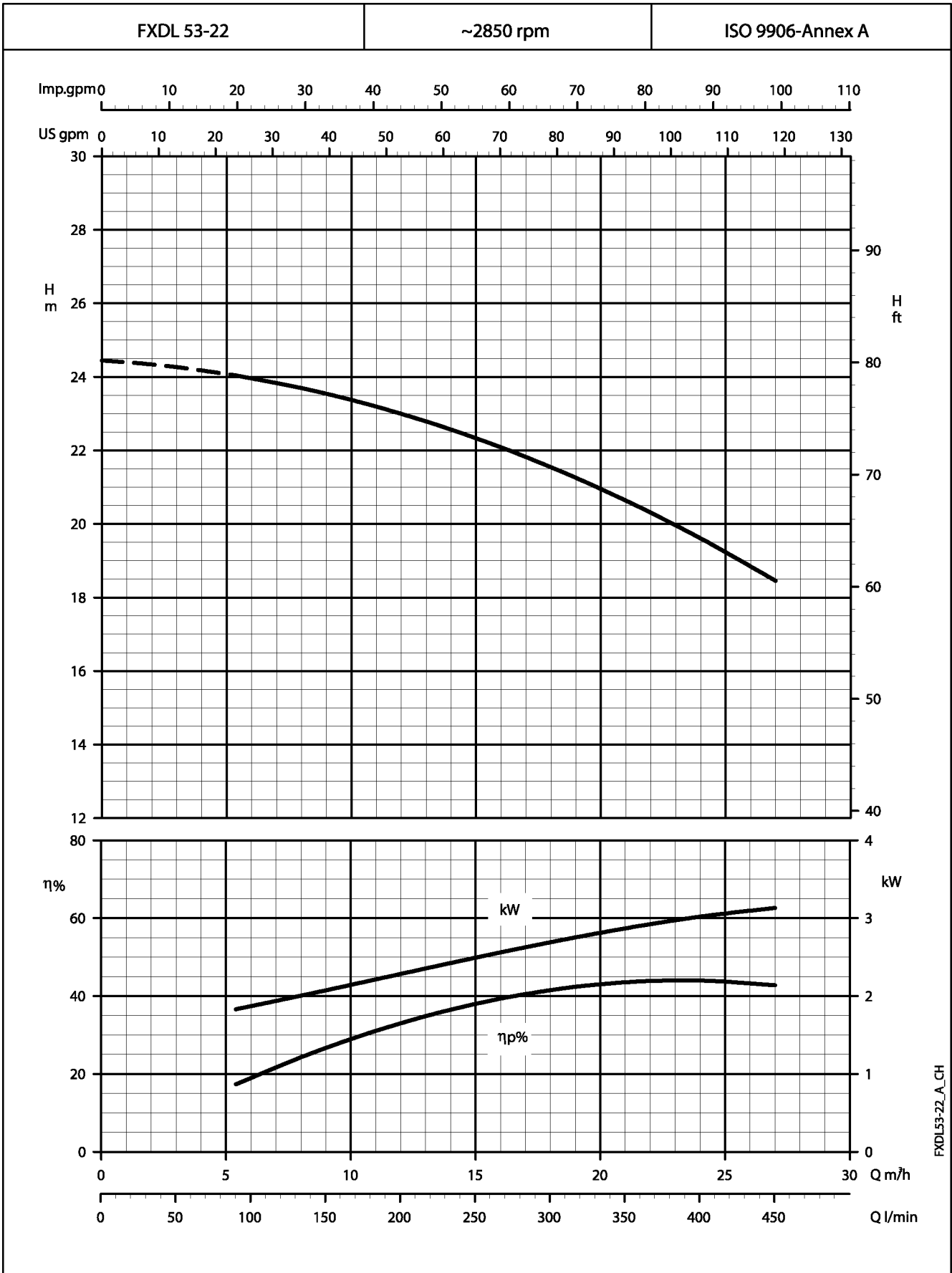
**FXDL SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz**



These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\gamma = 1 \text{ mm}^2/\text{s}$.



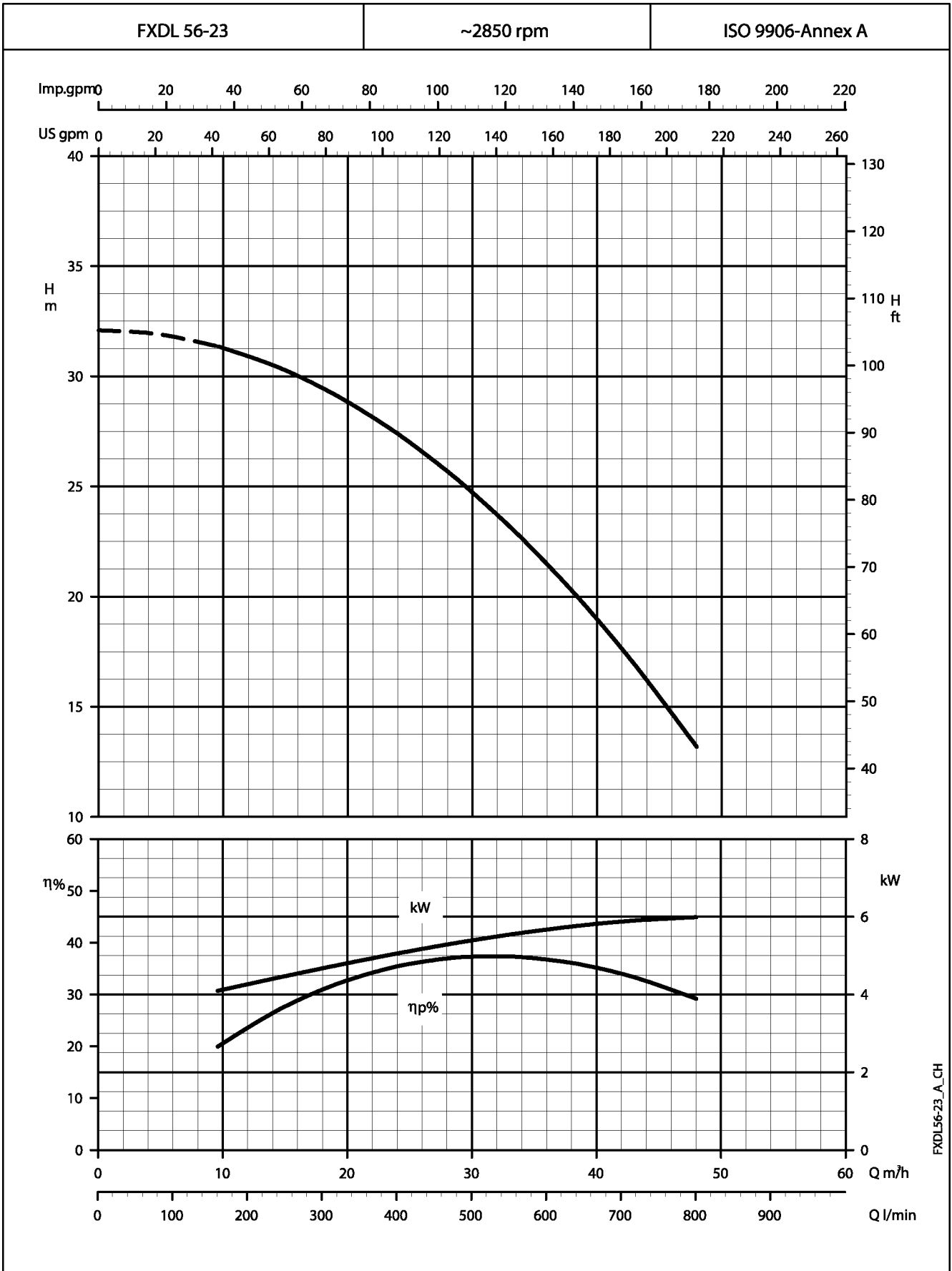
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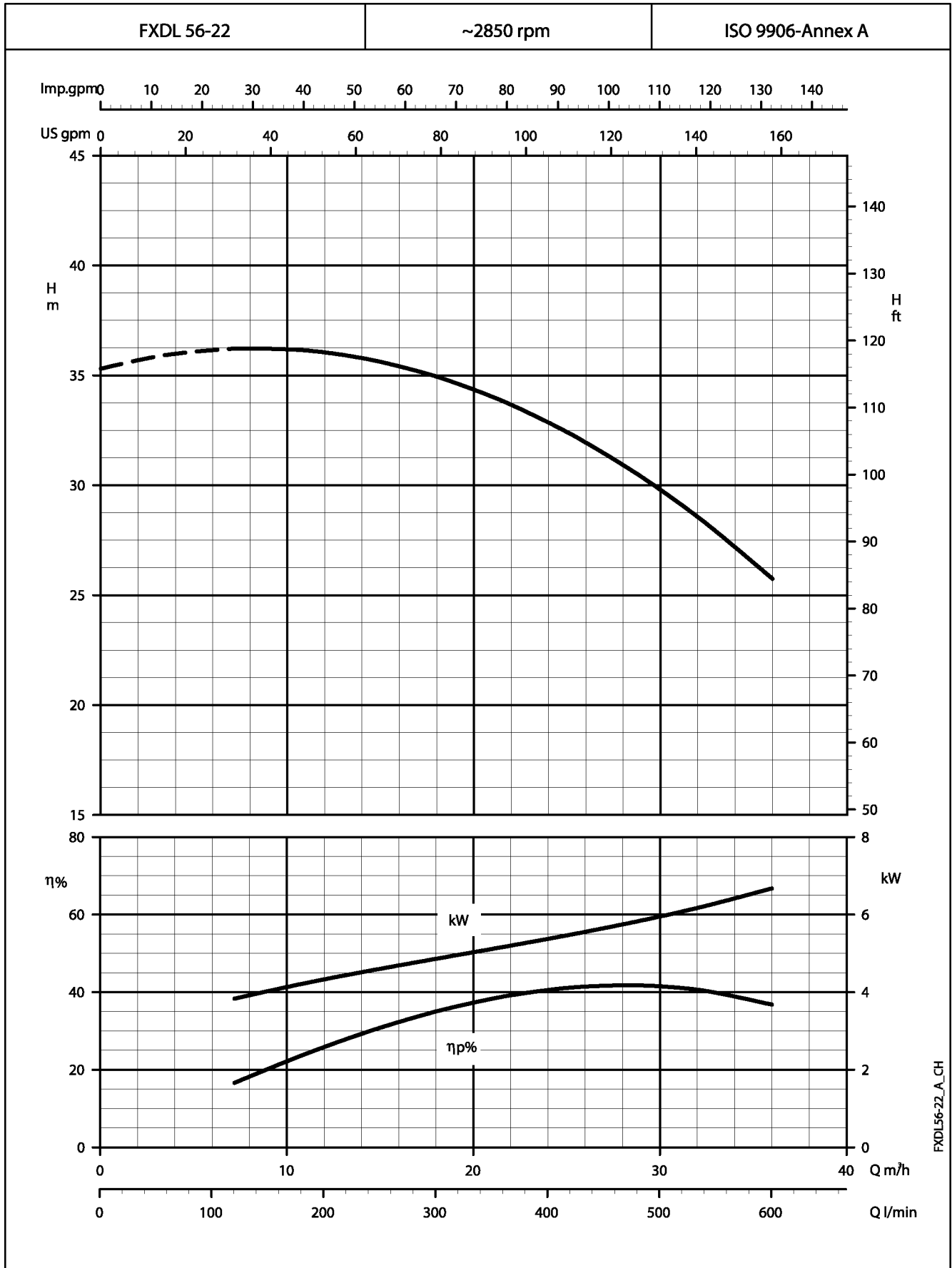
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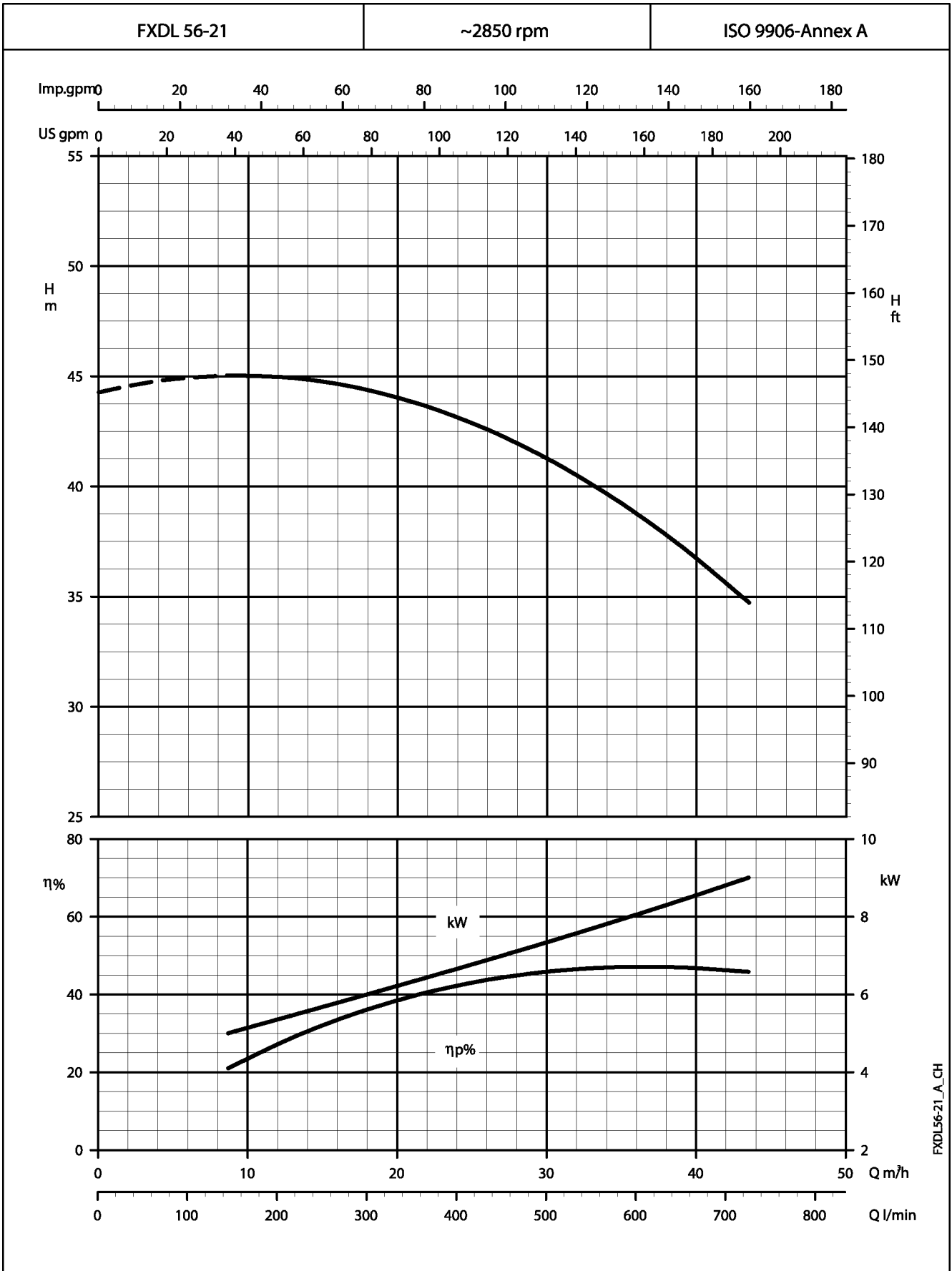
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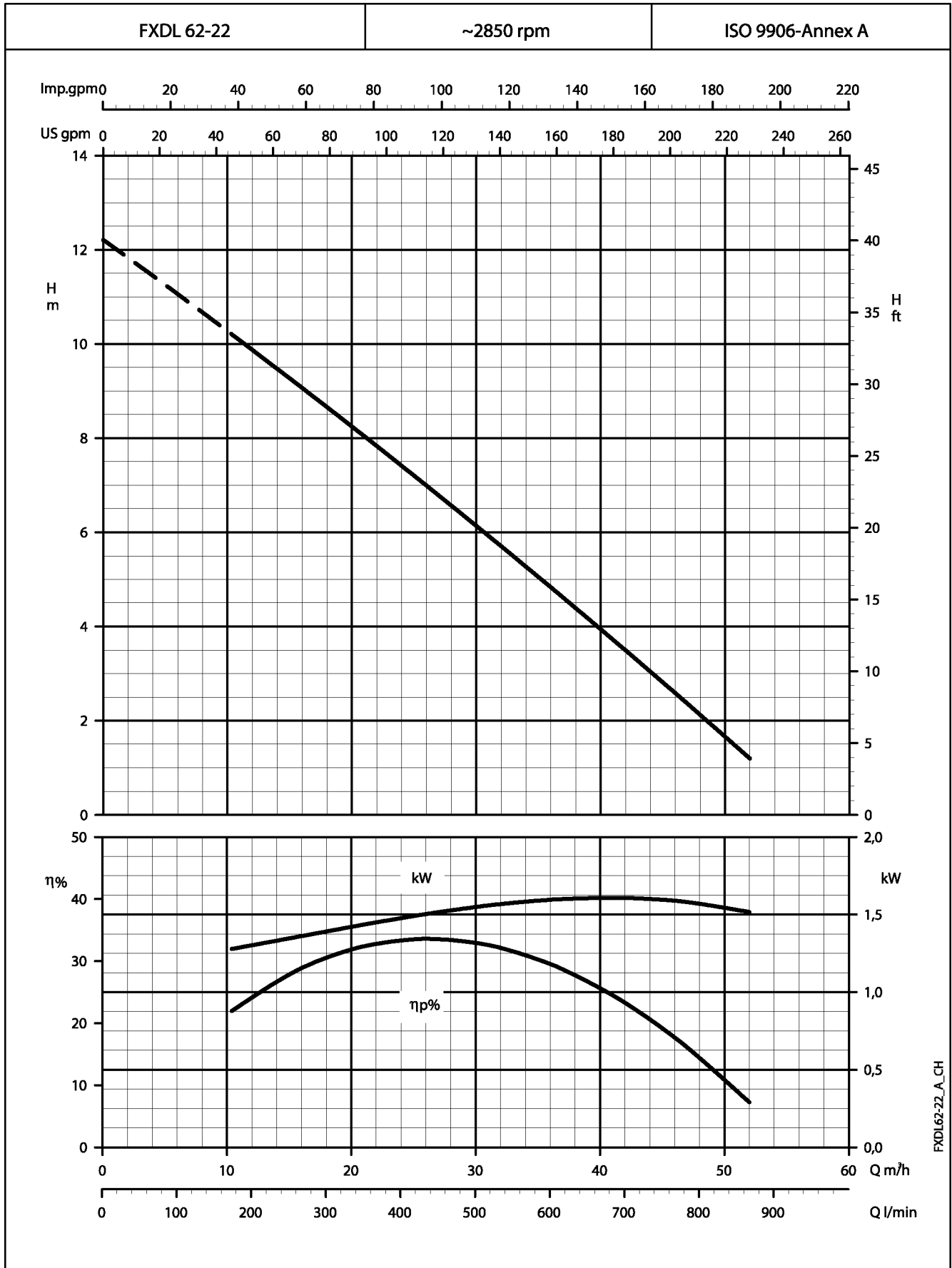
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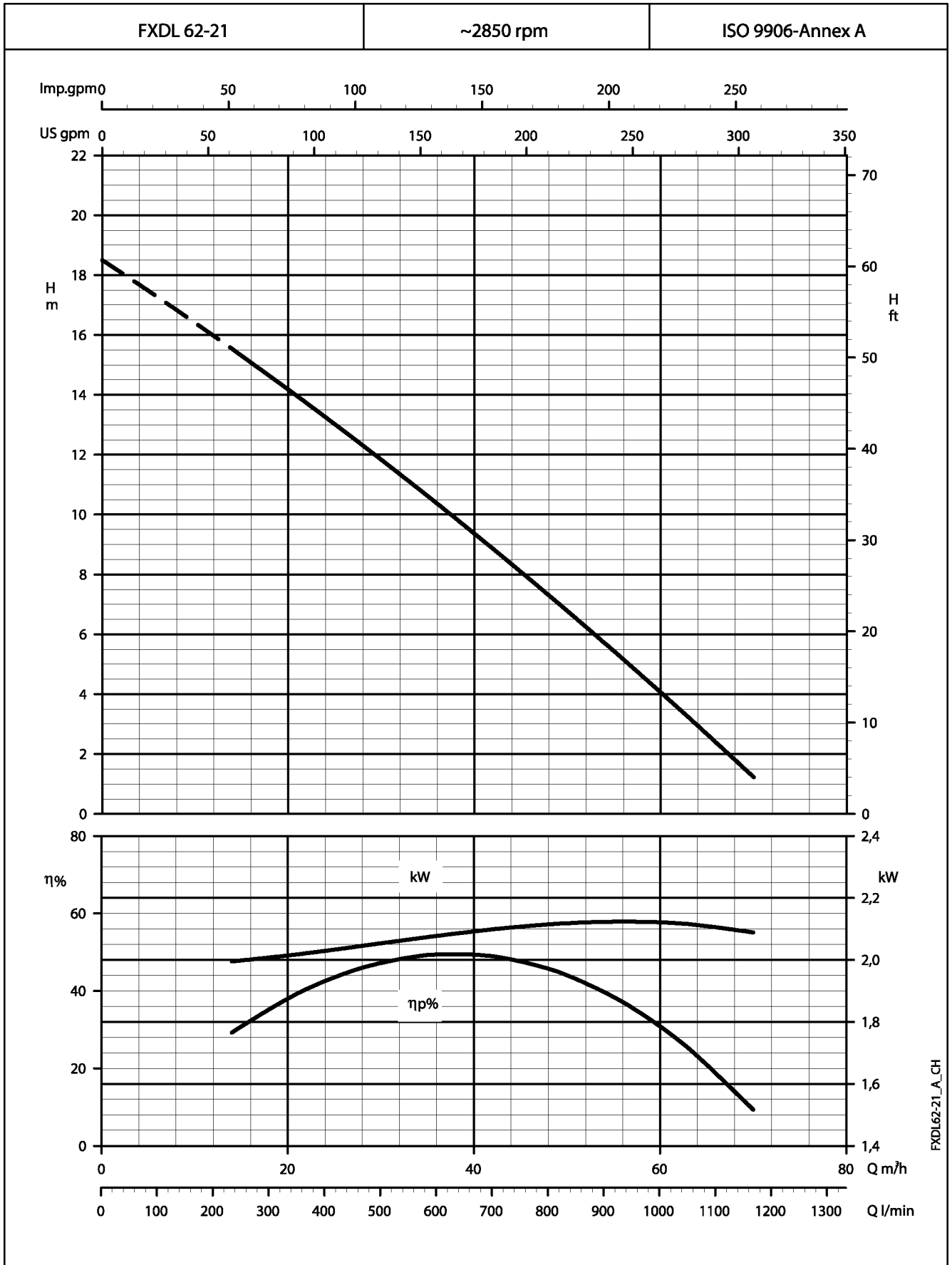
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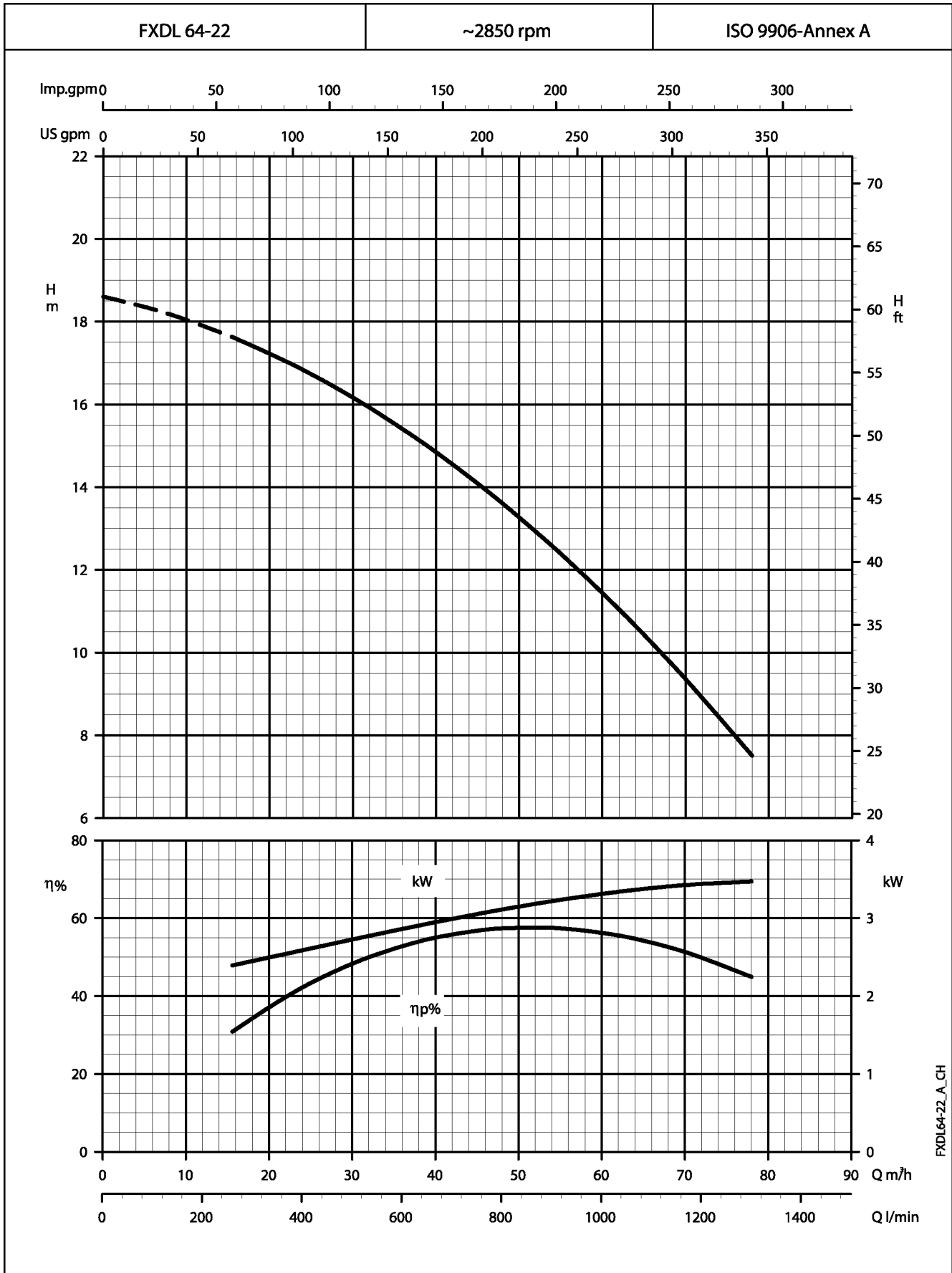
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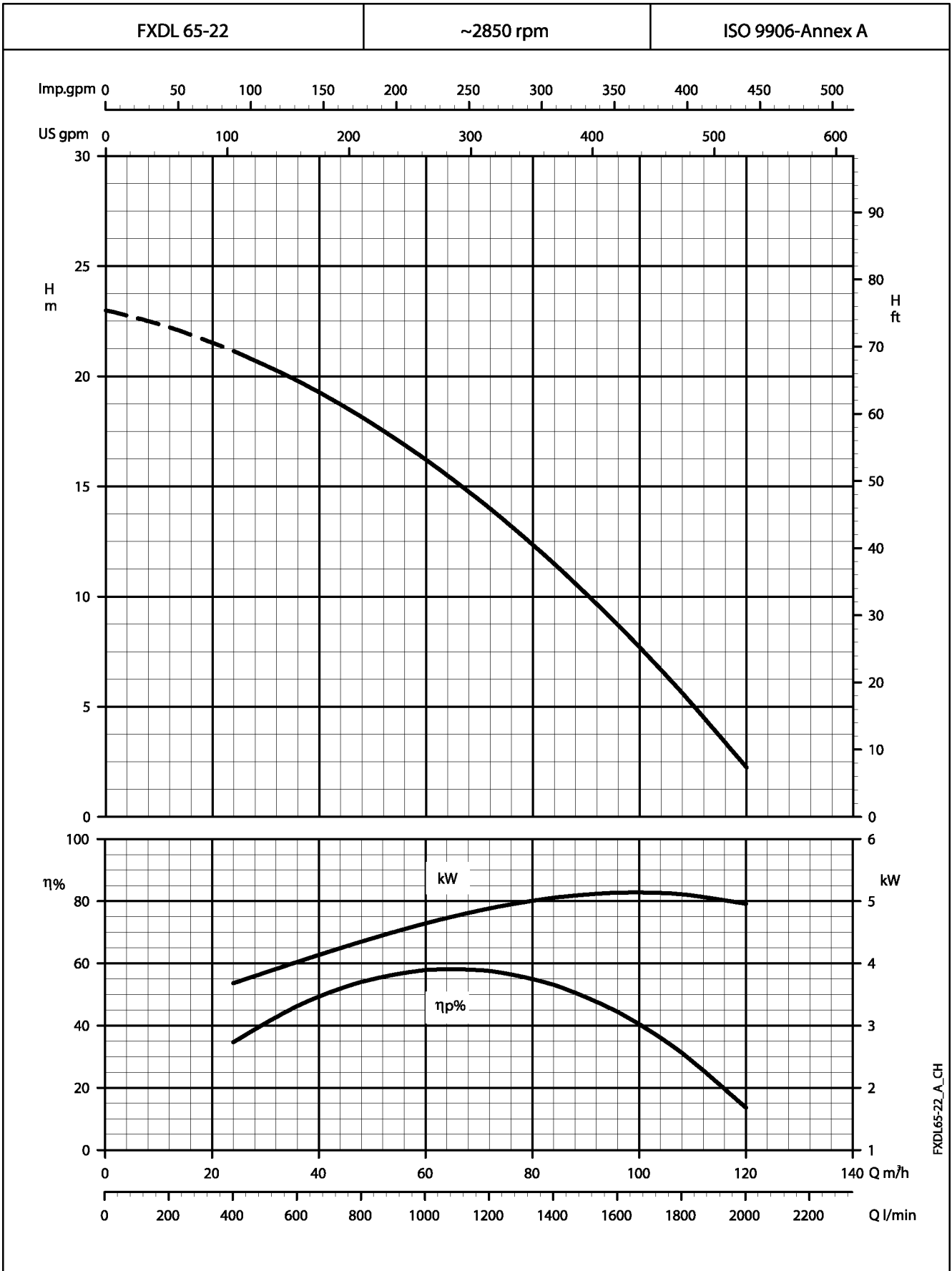
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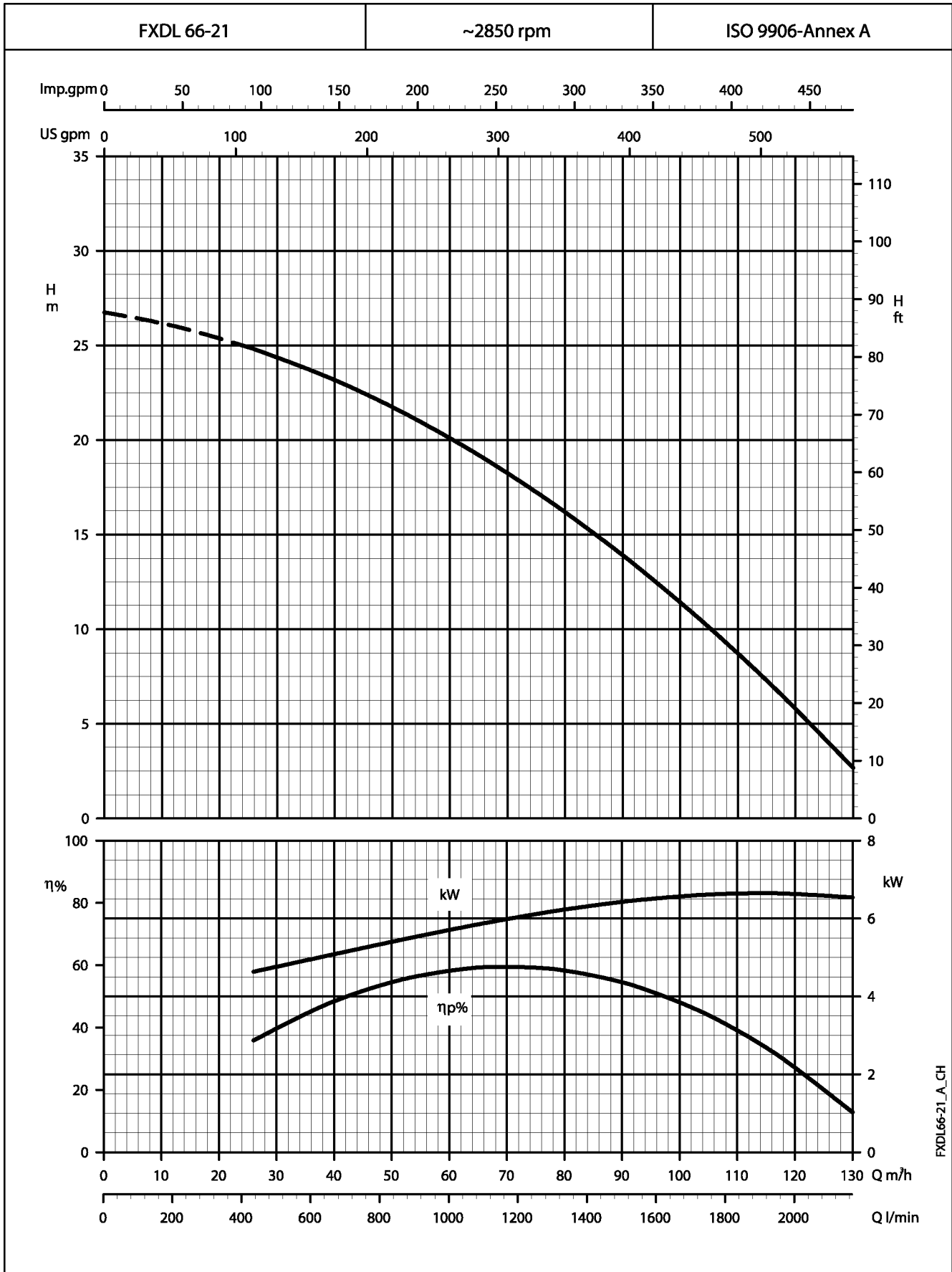
**FXDL SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz**



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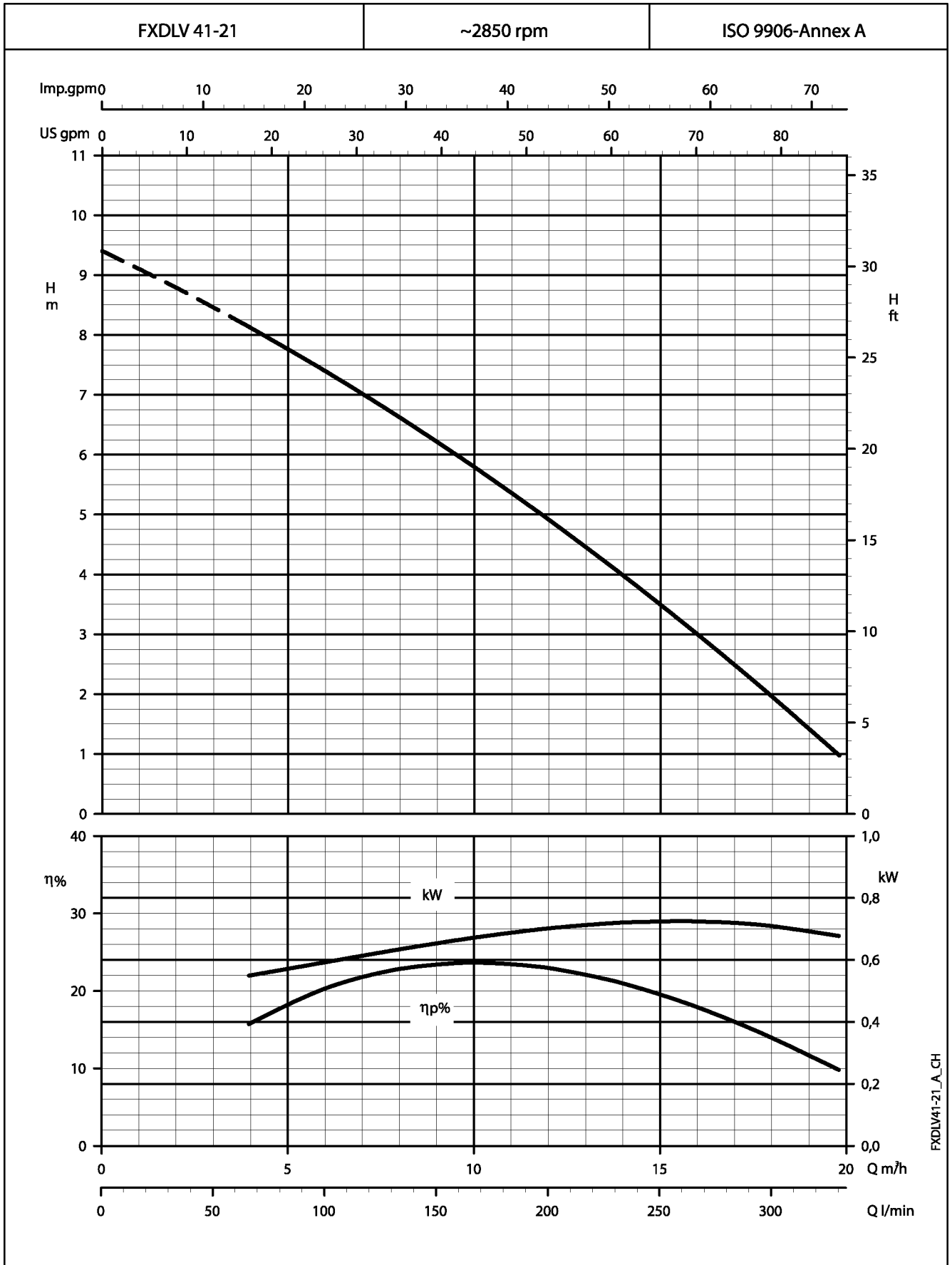
FXDL SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



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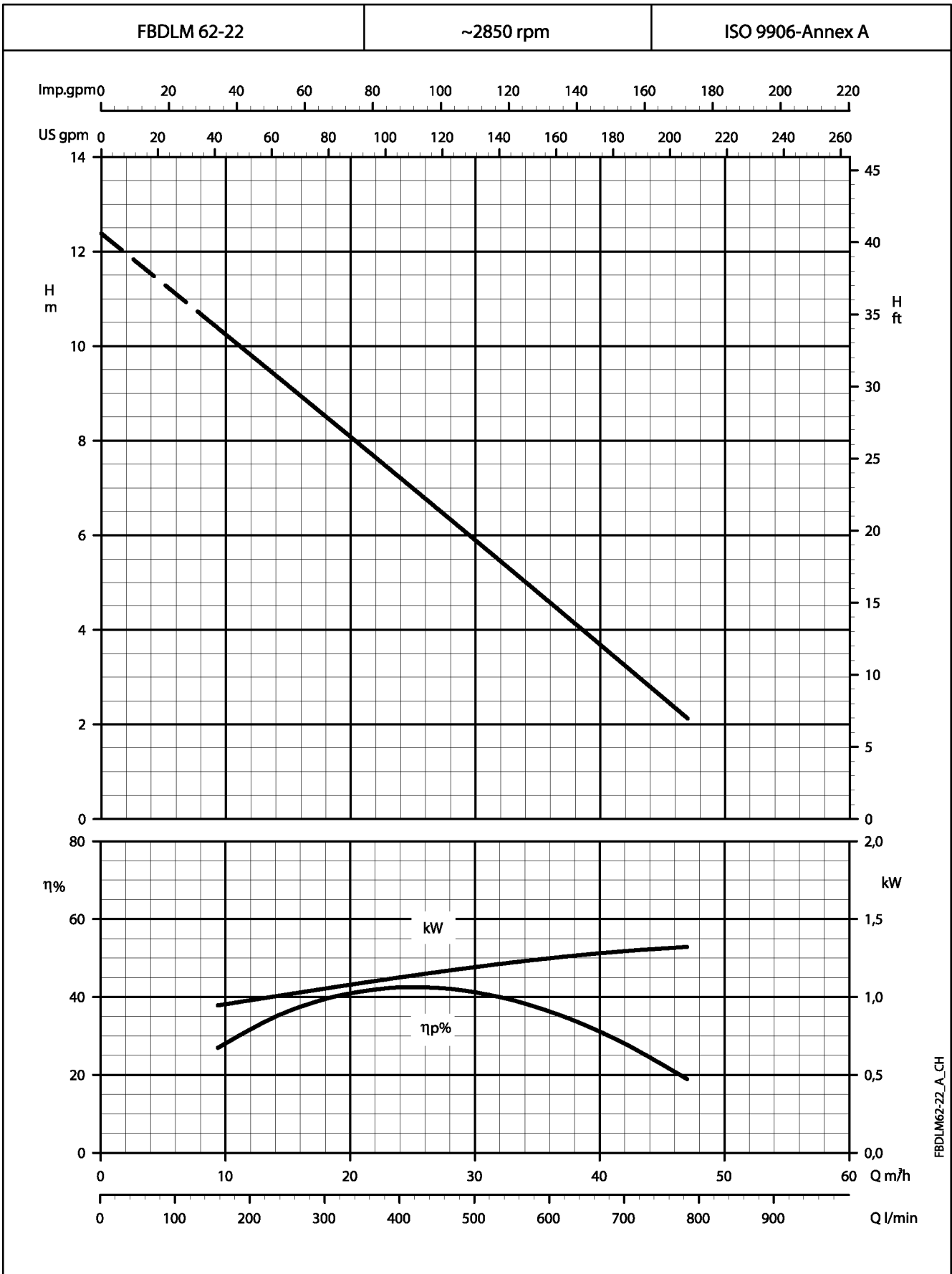
FXDL SERIES OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\gamma = 1 \text{ mm}^2/\text{s}$.



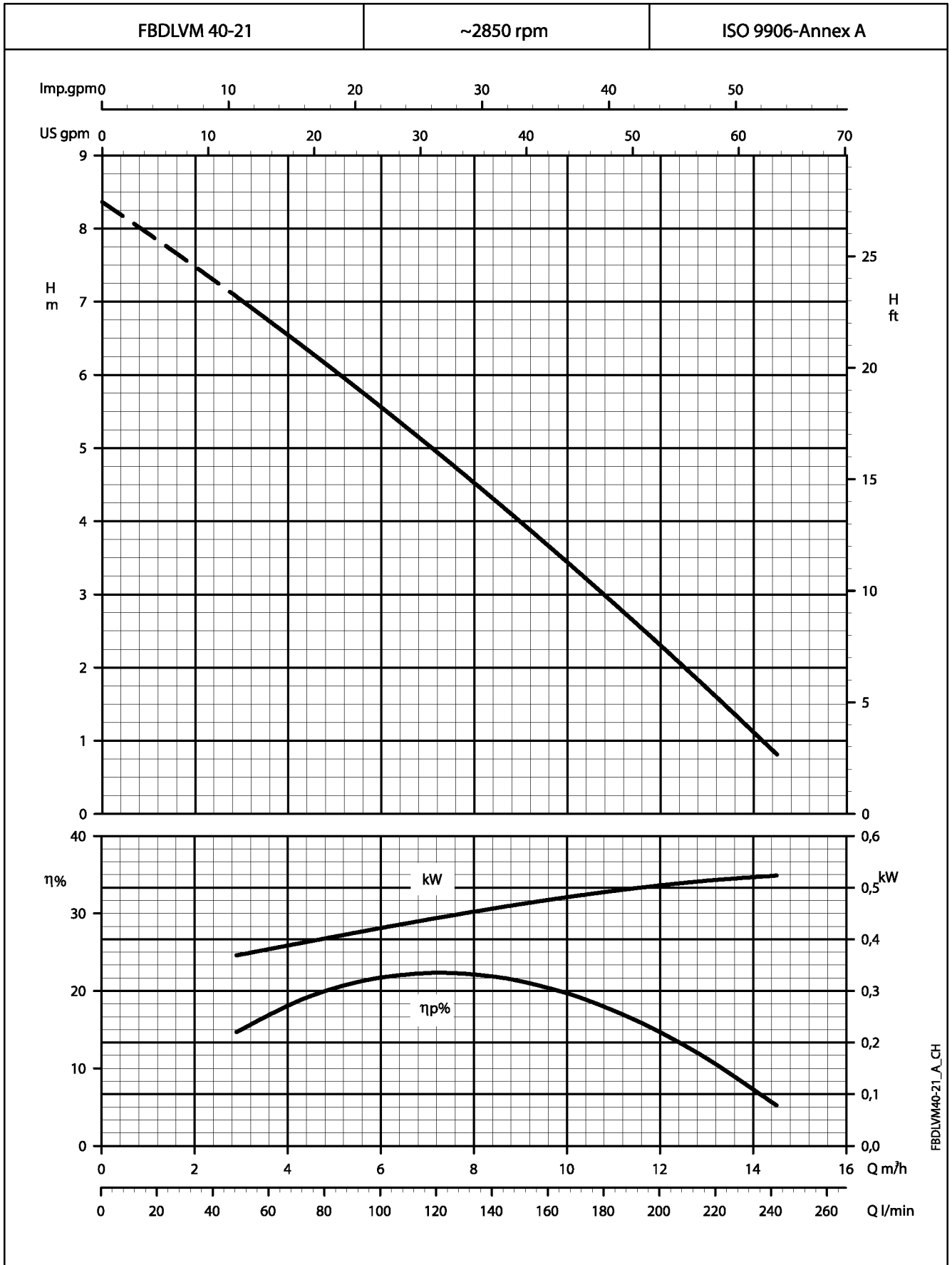
**FBDLM SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz**



These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{s}$.



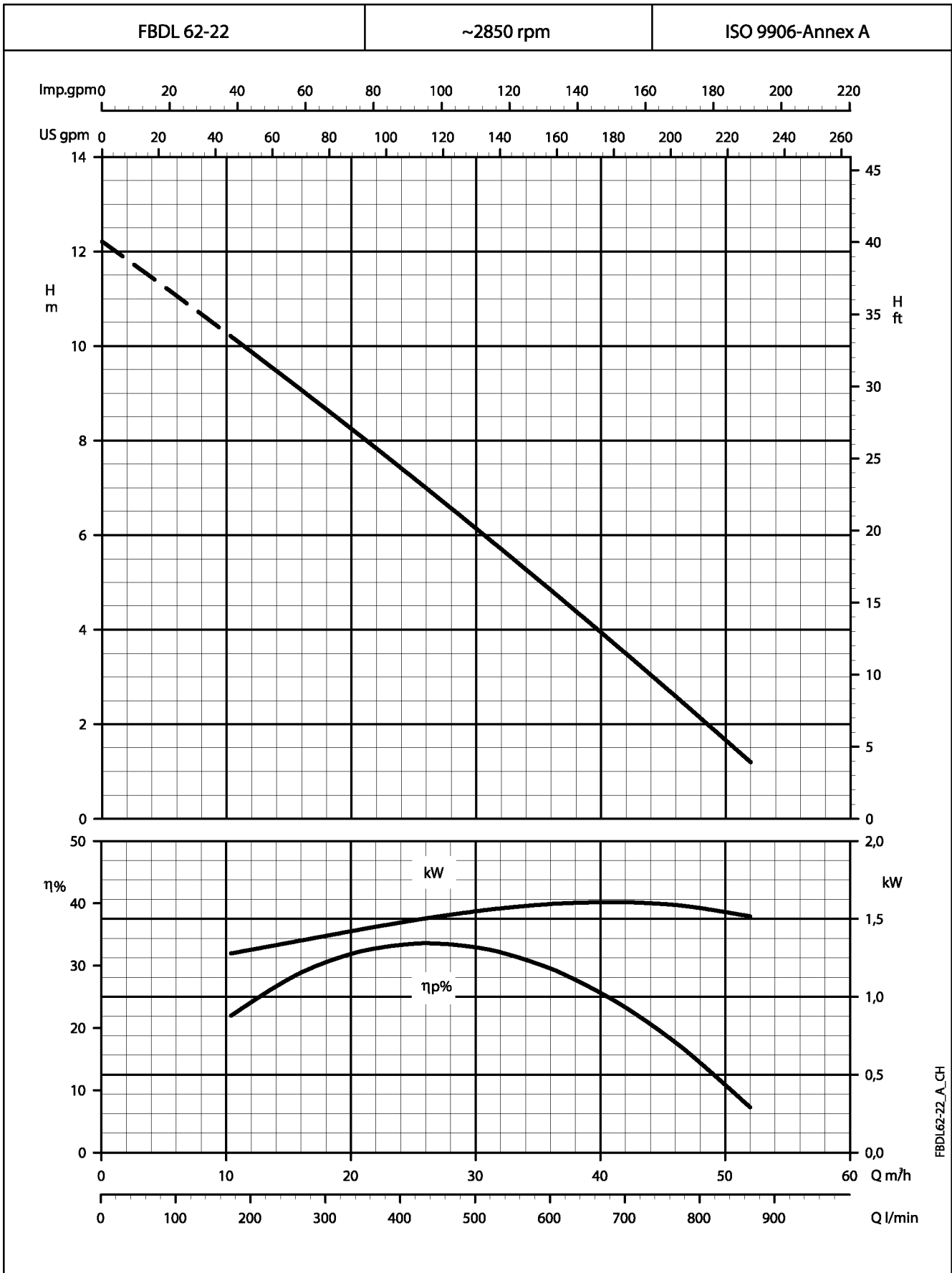
FBDLVM SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\gamma = 1 \text{ mm}^2/\text{s}$.



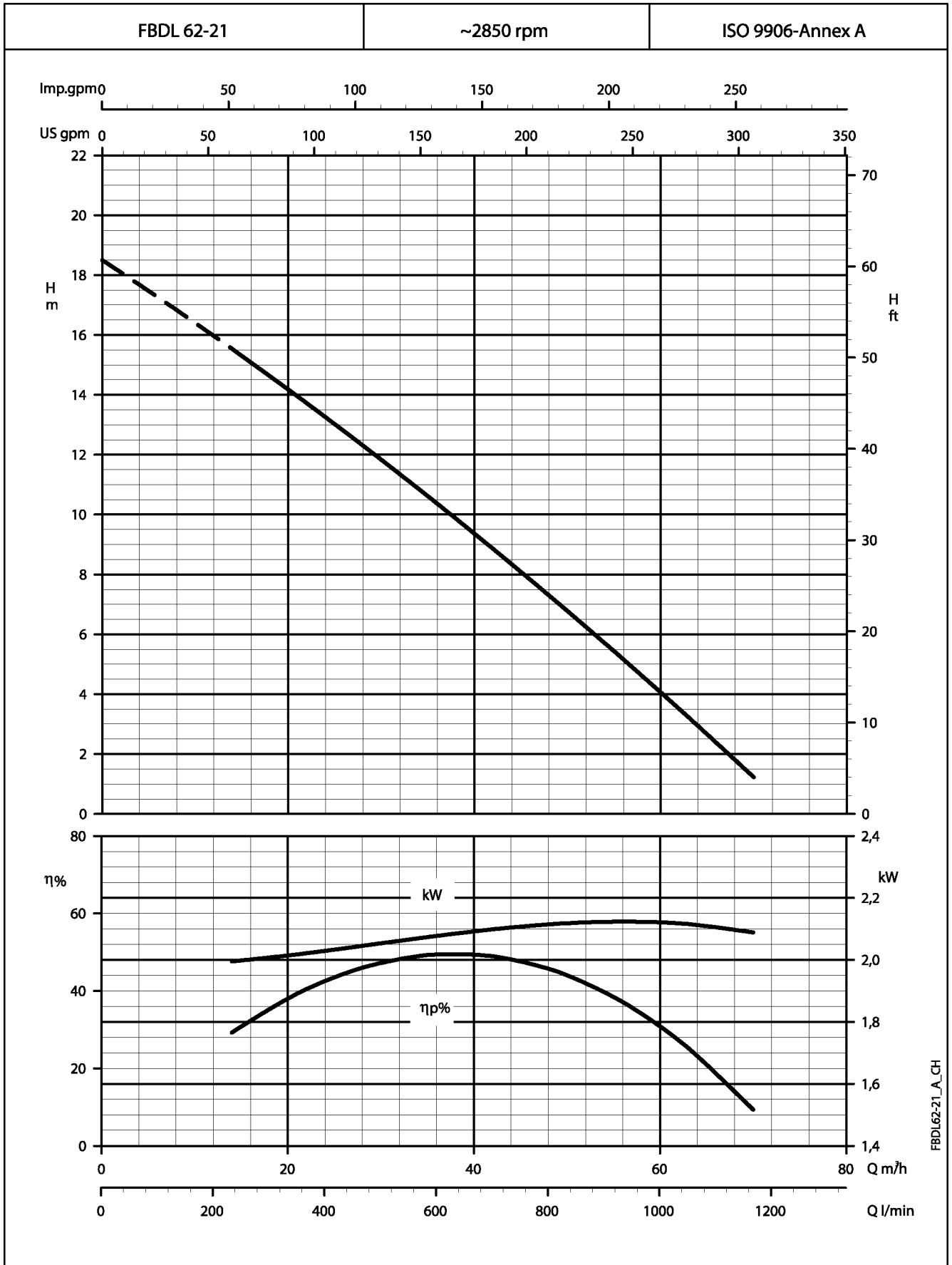
FBDL SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{s}$.



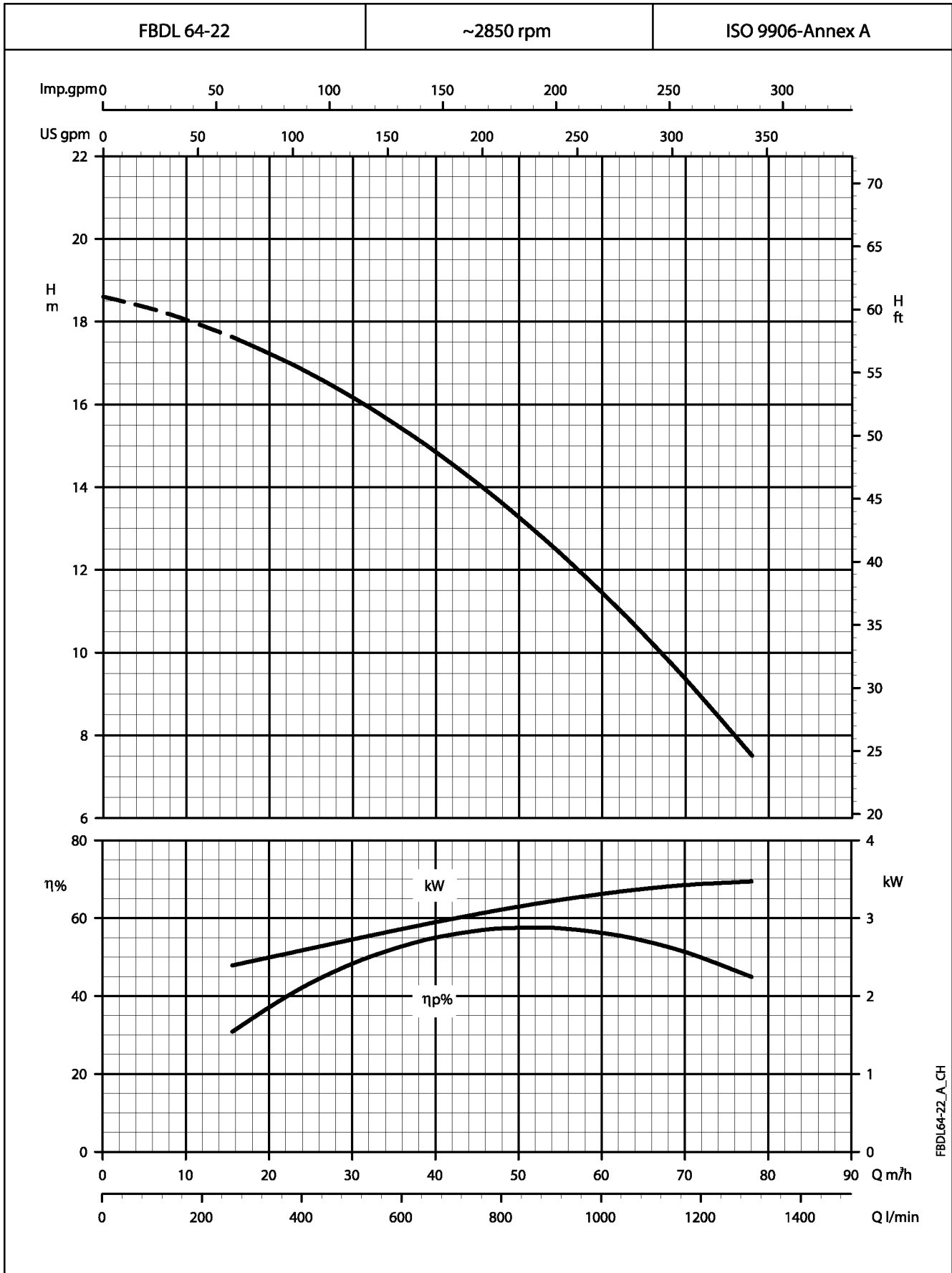
**FBDL SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz**



These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\gamma = 1 \text{ mm}^2/\text{s}$.



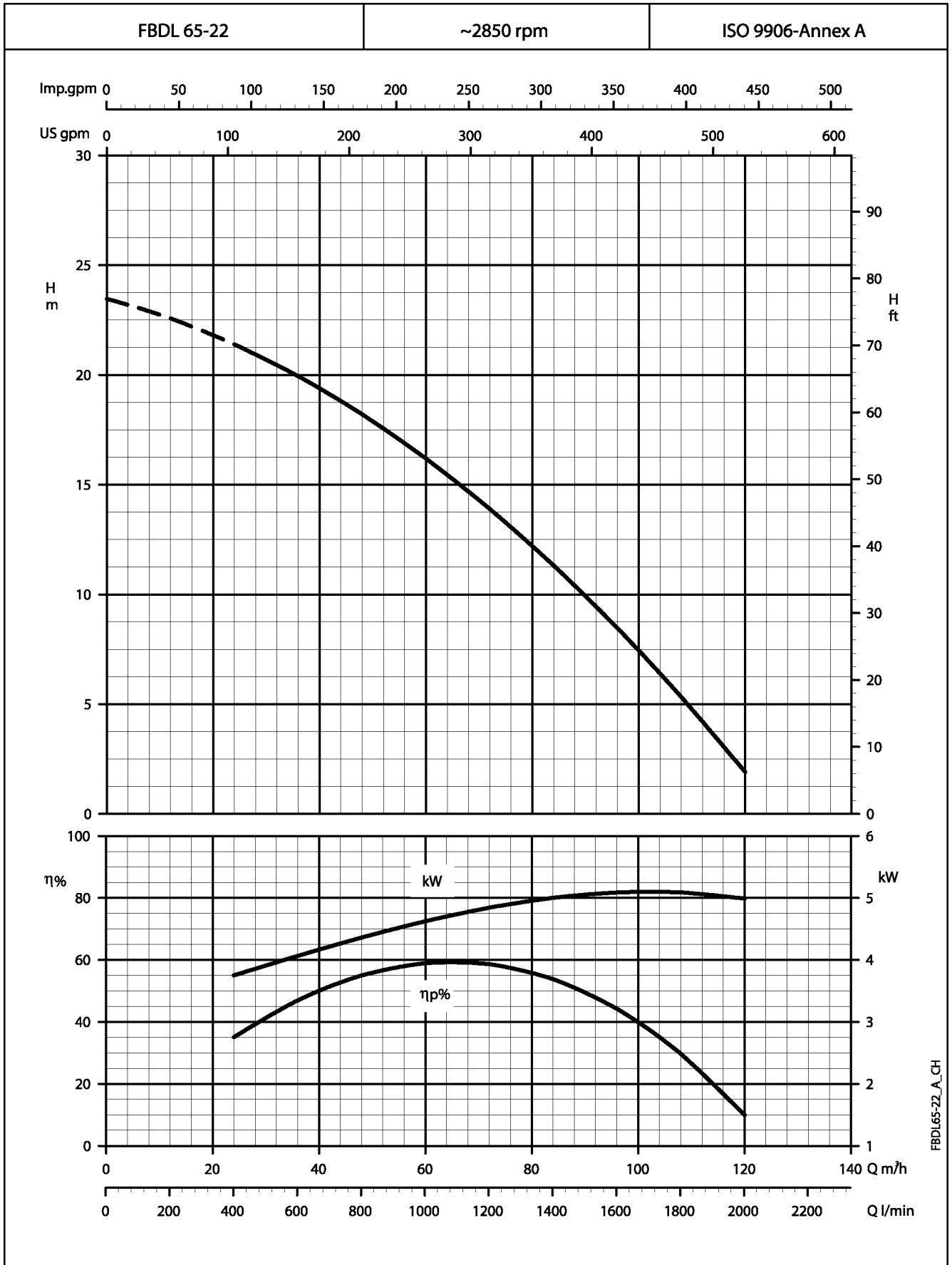
FBDL SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



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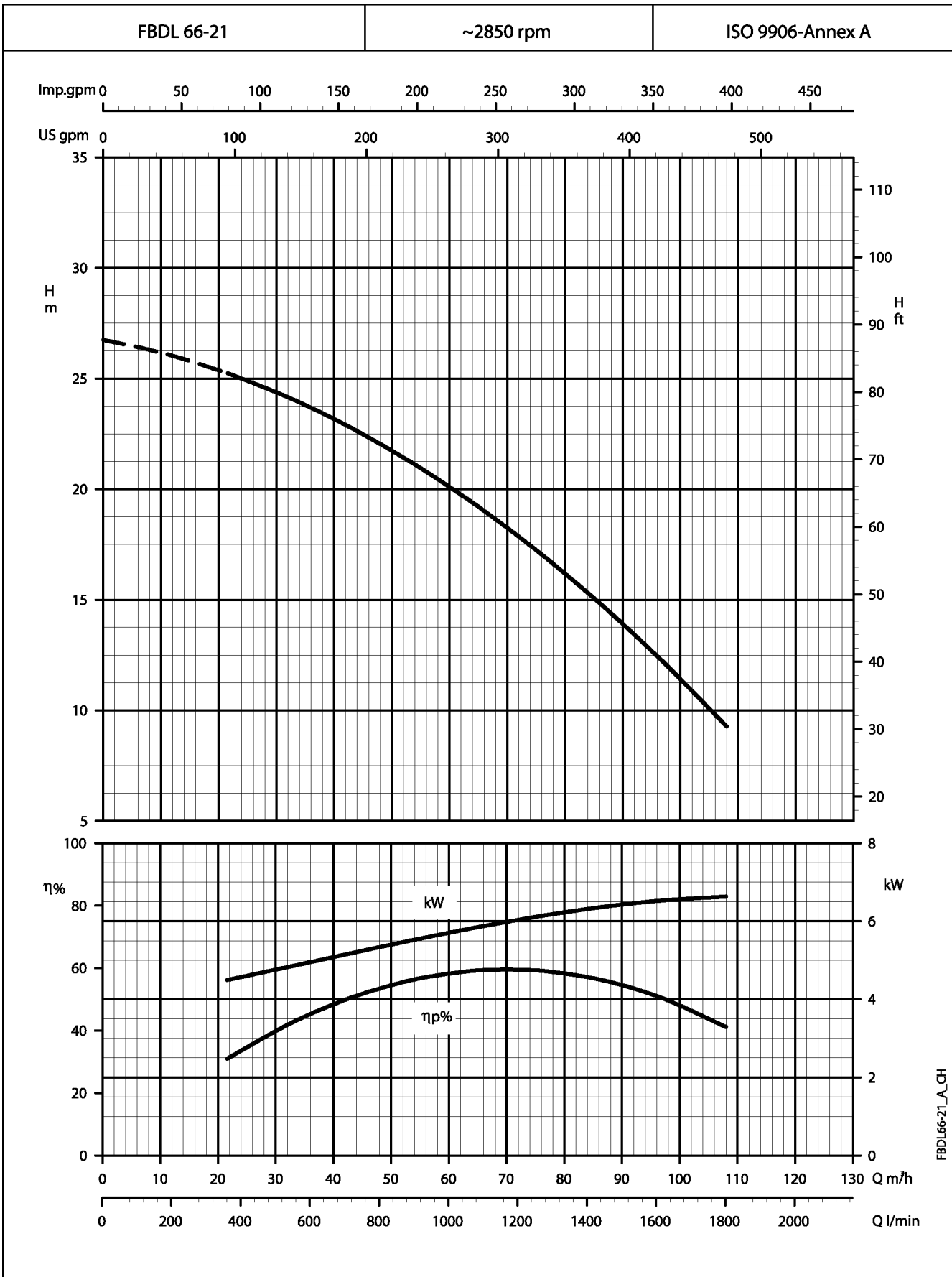
FBDL SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



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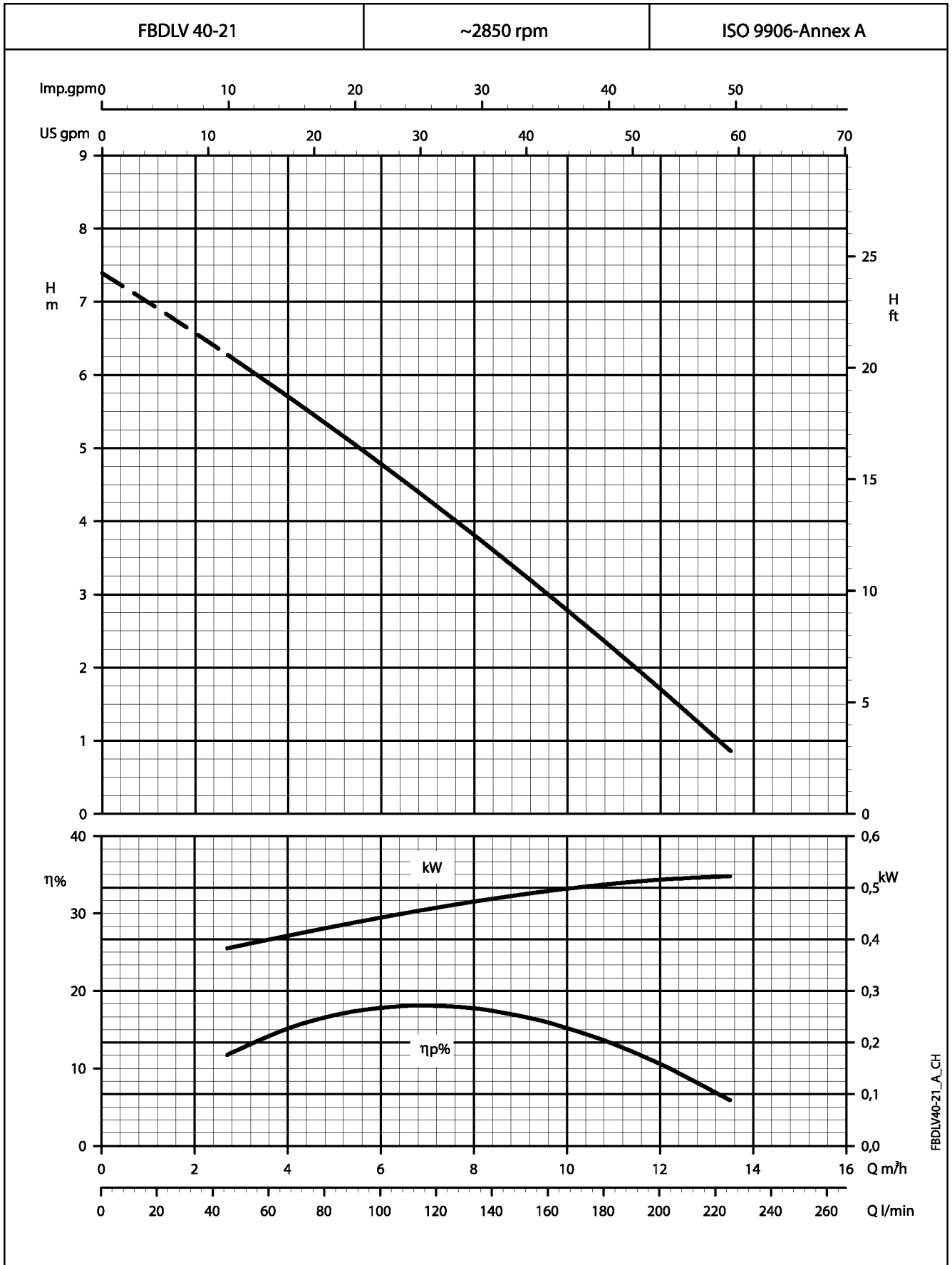
FBDL SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\gamma = 1 \text{ mm}^2/\text{s}$.

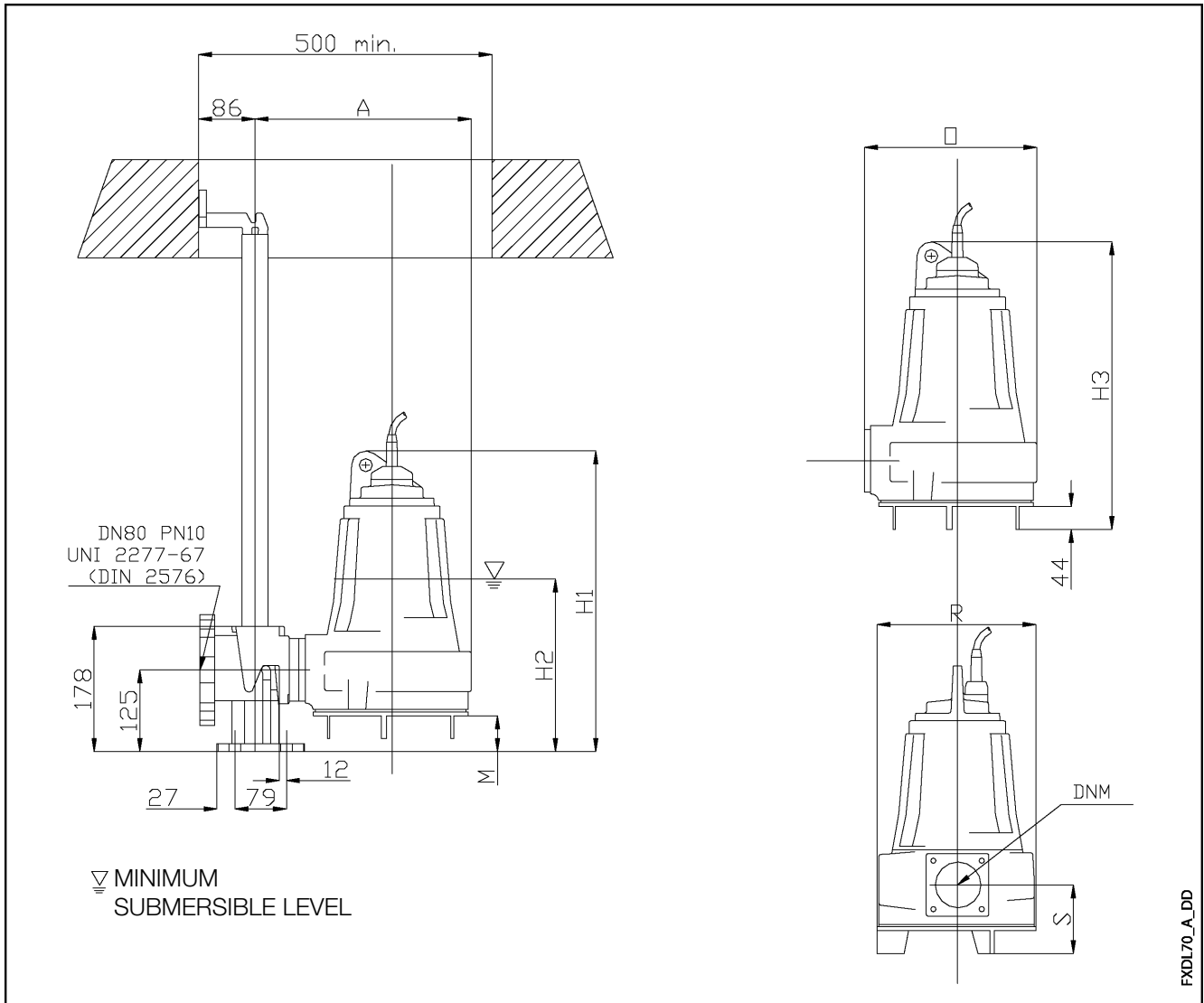


FBDLV SERIES
OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



These performances are valid for liquids with density $\rho = 1.0 \text{ kg/dm}^3$ and kinematic viscosity $\gamma = 1 \text{ mm}^2/\text{s}$.

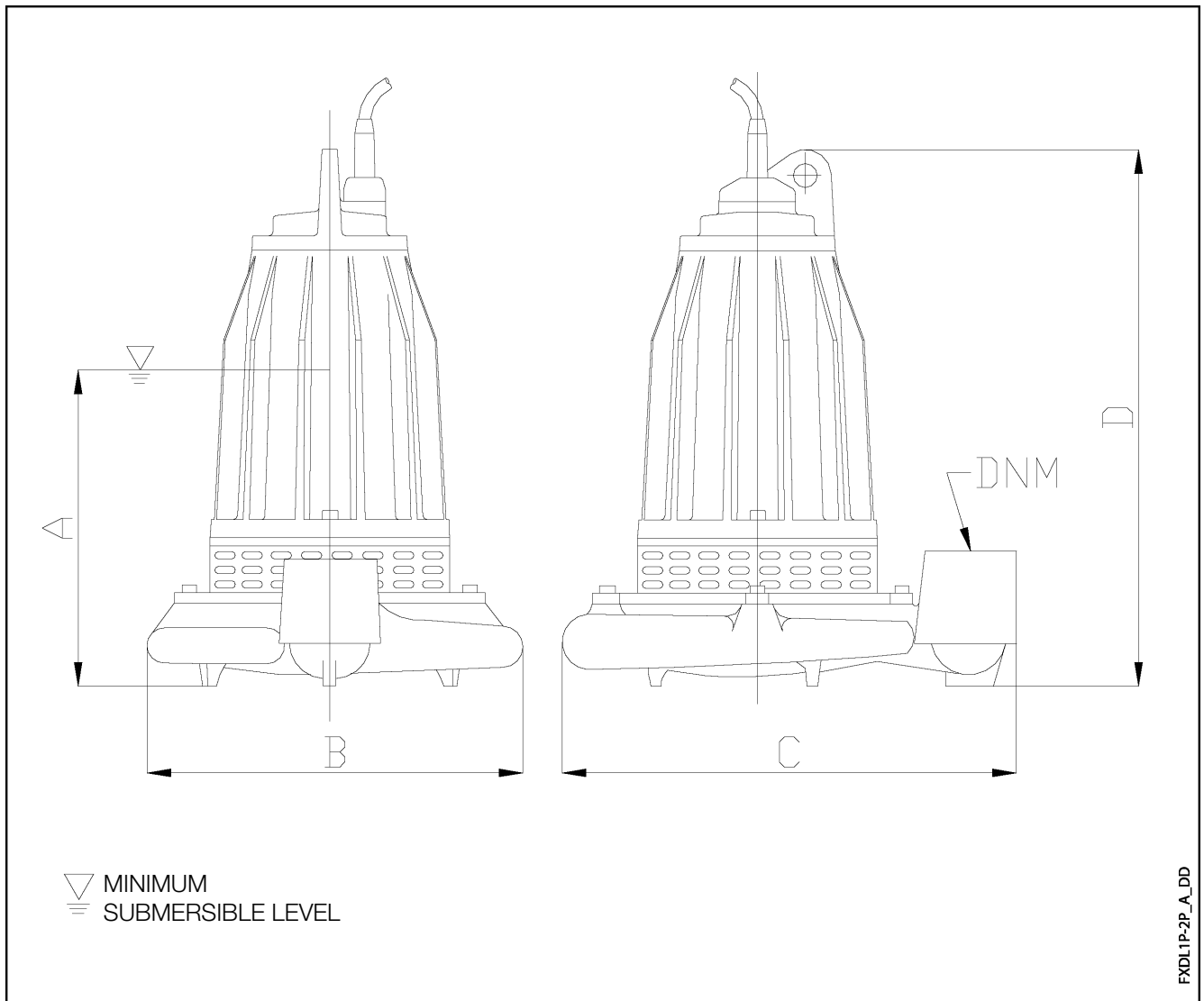
DIMENSIONS AND WEIGHTS, FXDL 70 SERIES



PUMP TYPE	DIMENSIONS (mm)									DNM mm	WEIGHT kg
	A	M	O	R	S	H1	H2	H3			
FXDL 62-22	332	55	279	243	105	460	265	440	70	40	
FXDL 62-21	400	44	348	269	125	472	340	472	70	51	
FXDL 64-22	400	44	348	269	125	472	340	472	70	51	
FXDL 65-22	400	44	348	269	125	570	331	570	70	70	
FXDL 66-21	400	44	348	269	125	570	331	570	70	70	

FXDL70_A_TD

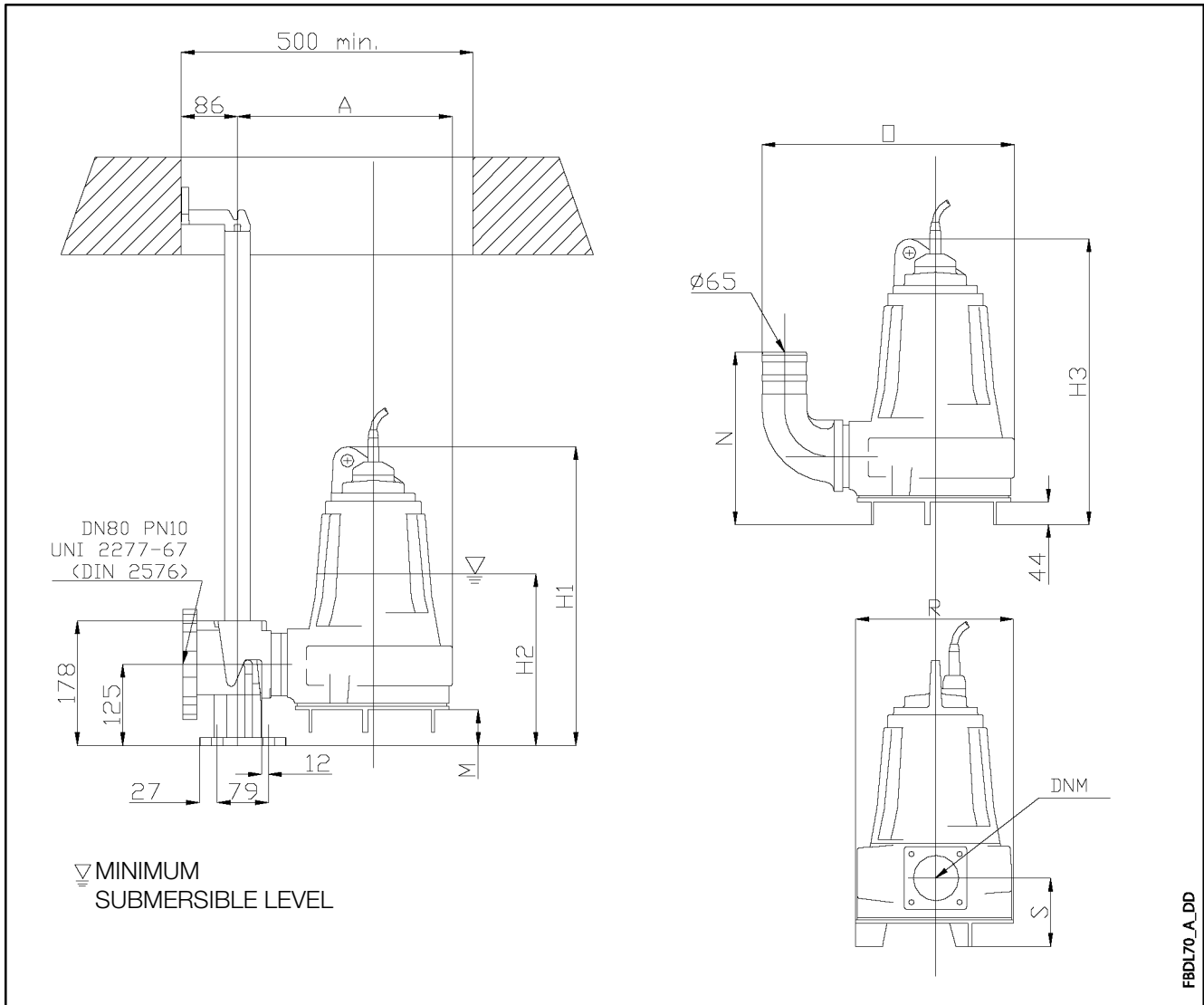
DIMENSIONS AND WEIGHTS, FXDL Rp 1 1/2, Rp 2 SERIES



PUMP TYPE	DIMENSIONS (mm)				DNM	WEIGHT kg
	A	B	C	D		
FXDLV 41-21	249	212	240	422	Rp 1 1/2	30
FXDL 41-21	255	212	240	422	Rp 1 1/2	30
FXDL 53-22	264	279	345	440	Rp 2	45
FXDL 56-23	303	290	350	543	Rp 2	92
FXDL 56-22	303	290	350	543	Rp 2	92
FXDL 56-21	303	290	350	543	Rp 2	92

FXDL1P-2P_B_TD

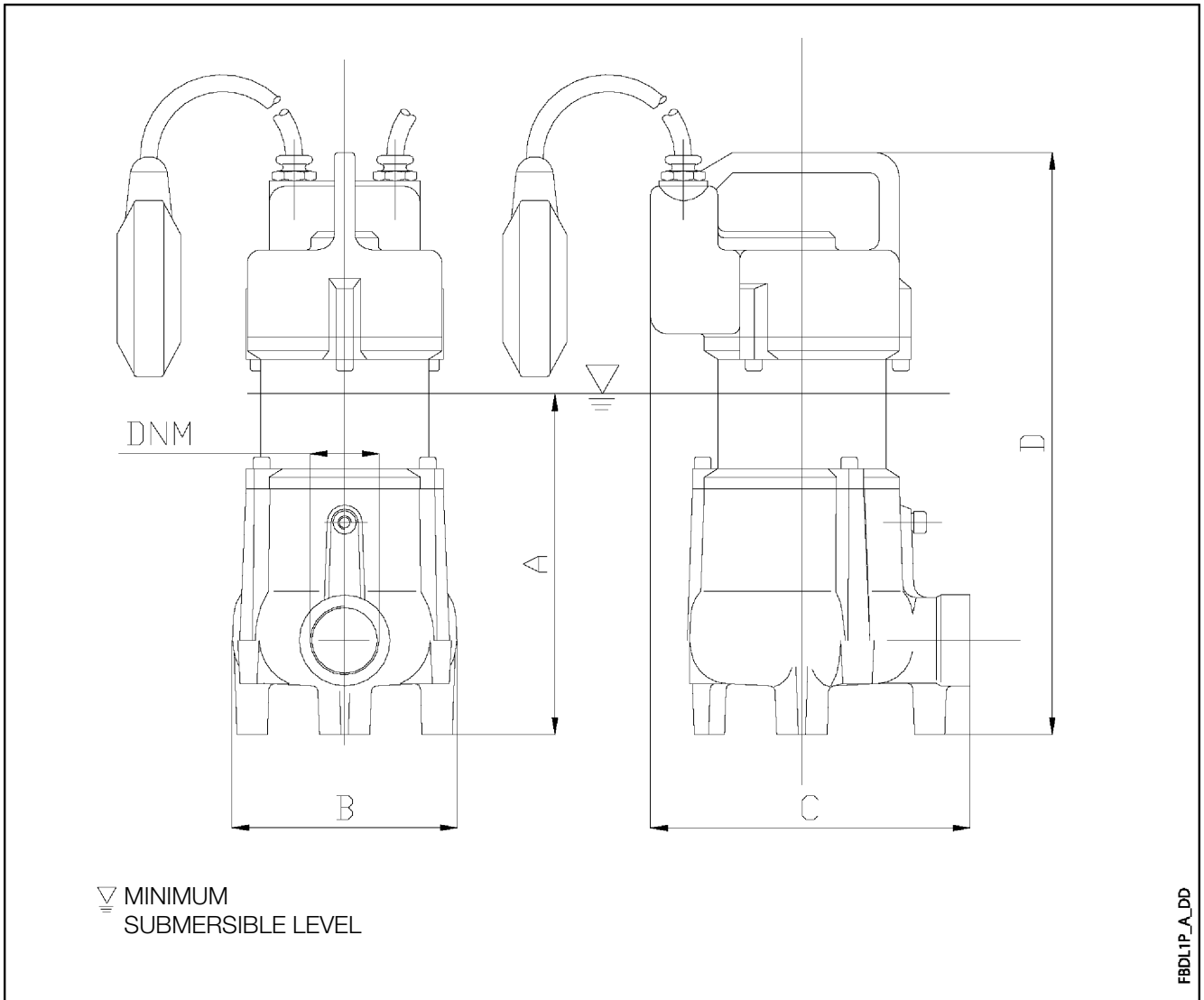
DIMENSIONS AND WEIGHTS, FBDL 70 SERIES



PUMP TYPE	DIMENSIONS (mm)									DNM	WEIGHT kg
	A	M	N	O	R	S	H1	H2	H3		
FBDLM 62-22	332	64	265	388	243	105	460	265	440	70	39
FBDL 62-22	332	64	265	388	243	105	460	265	440	70	39
FBDL 62-21	400	44	285	467	269	125	494	340	494	70	55
FBDL 64-22	400	44	285	467	269	125	494	340	494	70	55
FBDL 65-22	400	44	257	448	242	125	570	331	570	70	79
FBDL 66-21	400	44	257	448	242	125	570	331	570	70	79

FBDL70_A_TD

DIMENSIONS AND WEIGHTS, FBDL Rp 1" 1/4 SERIES



PUMP TYPE	DIMENSIONS (mm)				DNM	WEIGHT kg
	A	B	C	D		
FBDLVM 40-21	203	134	190	346	Rp 1 1/4	16
FBDLV 40-21	203	134	190	346	Rp 1 1/4	16

FBDL1P_B_TD

**PUMP SECTION
FXDL-FBDL SERIES**

FXDL-FBDL

Shafts: in contact with liquid made of AISI 316L stainless steel.

Oil chamber: the oil lubricates and cools the seals and emulsifies any water leaks. The pump is equipped with two mechanical seals for perfect insulation between the electric motor and the pumped liquid. Upper seal: ceramic/graphite. Lower seal: silicon carbide/silicon carbide.

Motor: three-phase asynchronous 2 poles, insulation class F (155°C) for the FBDL series, and H (170°C) for the FXDL series. Dry, cooled by the surrounding liquid.

The radial bearings are sized for minimum 10,000 hours of operation.

Impeller.

