

WASTEWATER  
SUBMERSIBLE MOTOR PUMP  
MODEL DML3  
TECHNICAL DATA BOOK 50Hz



eDYNAMiQ

Eco, Dynamic and Integrated Quality

EBARA Corporation  
EBARA DENSAN (TAIWAN) MFG. CO., LTD.

March, 2019

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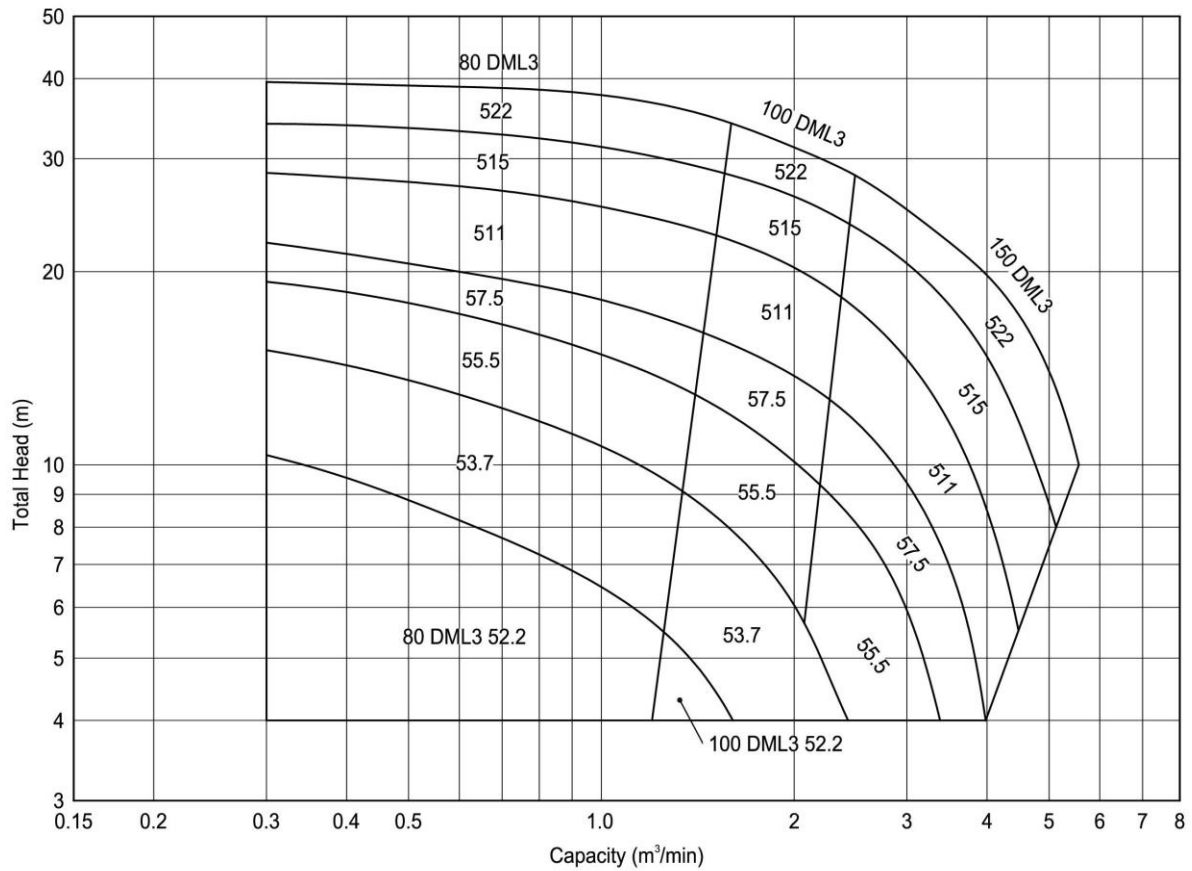
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**Specifications****50Hz**

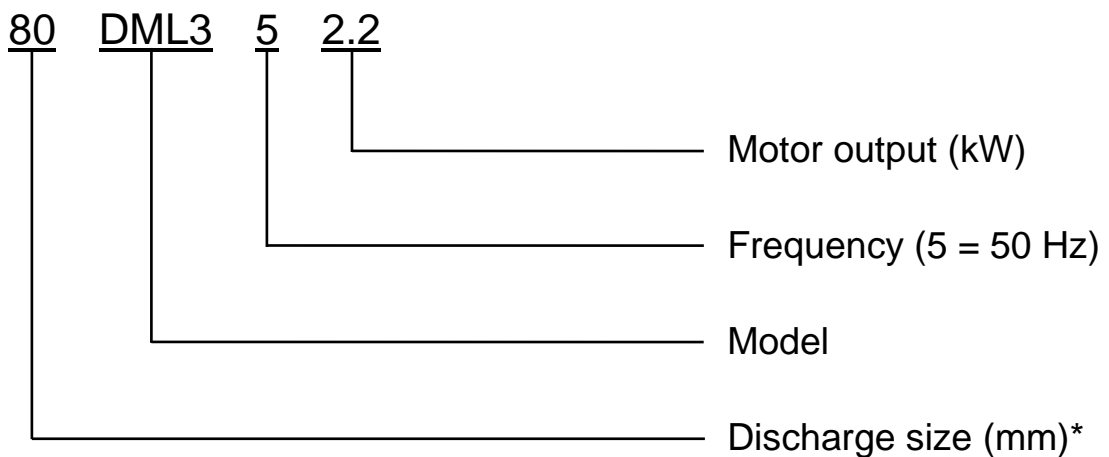
Scope	Discharge	80 — 150 mm
	Motor Power	2.2 — 22 kW (3 phase)
	Performance	Capacity : 0.3 — 5.5 m <sup>3</sup> /min Head : 4 — 39 m
Liquid	Type	Sewage
	Temperature	0 — 40°C
	Max.Diameter of Solids	76 mm
Submergence	Maximum	8 m
	Minimum	Refer to low water level (L.W.L) in dimensions.
Construction	Impeller	Non-clog single channel
	Mechanical Seal	Oil lubricated, double mechanical seal
	Bearing	Prelubricated ball bearing
	Protection	Miniature thermal protector Leakage detector (float type)
Materials	Casing	Cast iron
	Impeller	Cast iron
	Suction Cover	Cast iron
	Shaft	403 Stainless steel
	Motor Frame	Cast iron
	Fasteners	304 Stainless steel
	Mechanical Seal	Upper Face : Carbon / Ceramic Lower Face : Silicon Carbide / Silicon Carbide Lubricating Oil : Turbine Oil VG32 (SAE 10W / 20W)
Motor	Type	Air filled dry submersible, IP68, Class H insulation
	Number of poles	4 pole
	Applicable Voltages	380 / 400 / 415 Volts 3 phase 50 Hz
	Efficiency class	IE3
	Starting	DOL (up to 7.5 kW) Star-Delta (11 to 22 kW)
Cable	Length	10 m
Accessories	Flange	Standard : Discharge elbow with screwed companion flange Option : Quick Discharge Connector (QDC)

**Performance Chart**

**50Hz**



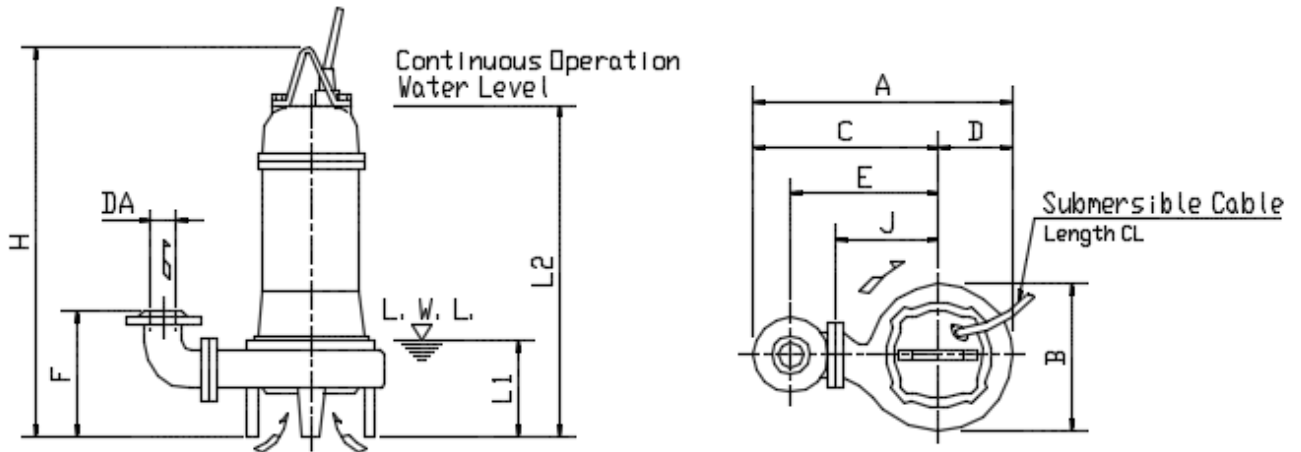
**Model code**



\*Discharge size is changed by discharge elbow.  
Therefore, pump name plate shows "80/100/150" or "80/100" for common model.

**Dimensions – DML3**

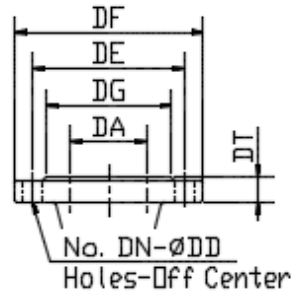
**50Hz**



Note:

- 1/. L.W.L(Low Water Level)Is limited to 10 minutes operations at low water level.
- 2/. Is limited to 30 minutes operation with water level below top of motor.

Discharge Flange  
(JIS 10kgf/cm<sup>2</sup>)



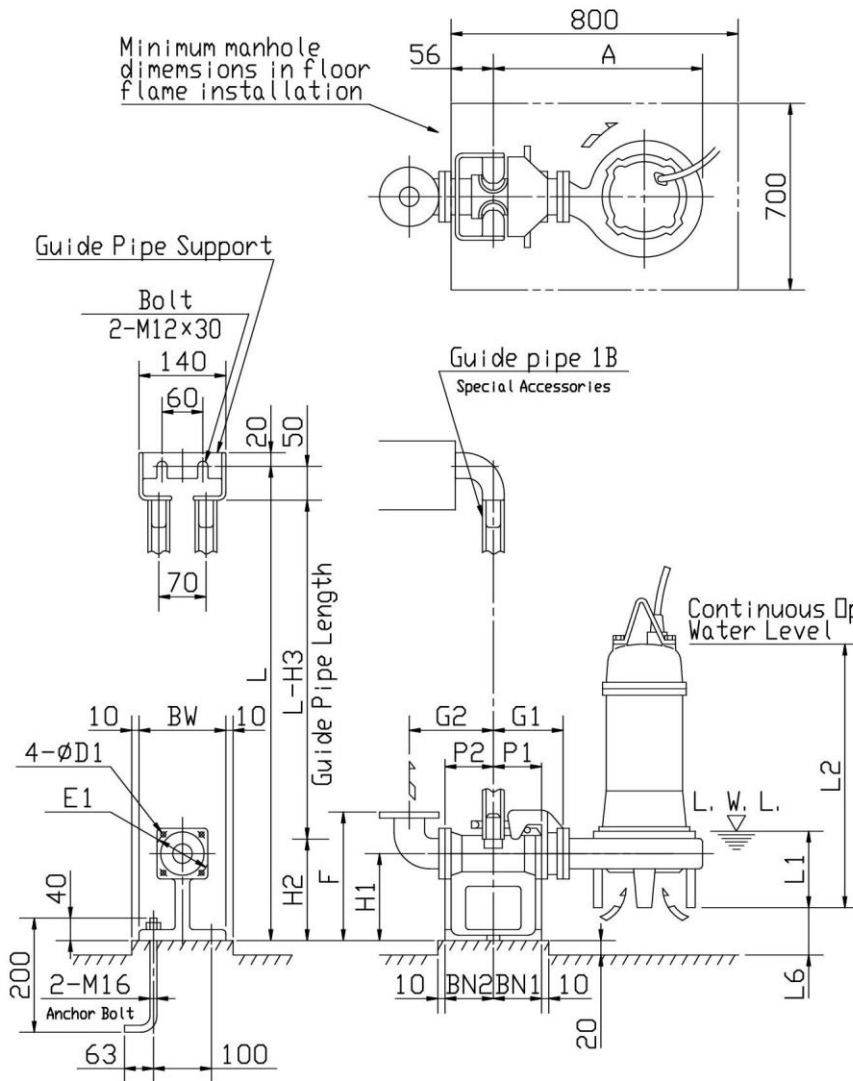
Unit : mm

DA	DE	DF	DG	DT	DN	DD
80	150	185	126	18	8	15
100	175	210	151	20	8	15
150	240	280	212	22	8	19

Size DA	Model	Output KW	A	B	C	D	E	F	H	J	L1	L2	CL	Weight
80	80 DML3 52.2	2.2	534	320	378	157	285	298	843	210	279	750	10m	97 kg
	80 DML3 53.7	3.7	534	320	378	157	285	298	843	210	279	750	10m	98 kg
	80 DML3 55.5	5.5	640	381	453	188	360	334	968	255	310	867	10m	139 kg
	80 DML3 57.5	7.5	640	381	453	188	360	334	968	255	310	867	10m	140 kg
	80 DML3 511	11	734	455	513	221	420	350	1086	315	329	926	10m	176 kg
	80 DML3 515	15	734	455	513	221	420	350	1166	315	329	1006	10m	199 kg
	80 DML3 522	22	777	497	533	245	440	363	1183	335	332	1004	10m	247 kg
100	100 DML3 52.2	2.2	577	320	420	157	315	313	843	210	279	750	10m	98 kg
	100 DML3 53.7	3.7	577	320	420	157	315	313	843	210	279	750	10m	100 kg
	100 DML3 55.5	5.5	653	381	465	188	360	334	968	255	310	867	10m	142 kg
	100 DML3 57.5	7.5	653	381	465	188	360	334	968	255	310	867	10m	142 kg
	100 DML3 511	11	746	455	525	221	420	350	1086	315	329	926	10m	179 kg
	100 DML3 515	15	746	455	525	221	420	350	1166	315	329	1006	10m	202 kg
	100 DML3 522	22	790	497	545	245	440	363	1183	335	332	1004	10m	250 kg
150	150 DML3 55.5	5.5	713	381	525	188	385	369	968	255	310	867	10m	148 kg
	150 DML3 57.5	7.5	713	381	525	188	385	369	968	255	310	867	10m	149 kg
	150 DML3 511	11	806	455	585	221	445	385	1086	315	329	926	10m	185 kg
	150 DML3 515	15	806	455	585	221	445	385	1166	315	329	1006	10m	208 kg
	150 DML3 522	22	850	497	605	245	465	398	1183	335	332	1004	10m	256 kg

Units : mm unless otherwise specified

■ **Applicable Models – DML3 with QDC(LM80)**



Note:

1/. For detailed dimensions of the pumps, refer to separate dimension data sheets.

2/. The discharge bend and companion flange supplied with the pump are used with the QDC.

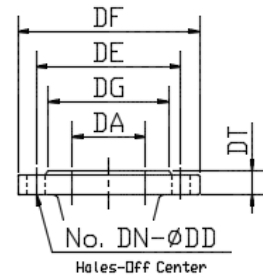
3/. The weight in dimension tables refers only to the weight of the QDC.

4/. Standard accessories supplied with QDC include:-

- Connector body with foundation bolts.
- Guide pipe support
- Sliding Glide
- Adaptor Flange

Guide Pipe is not supplied.

**Discharge Flange**  
(JIS 10kgf/cm<sup>2</sup>)



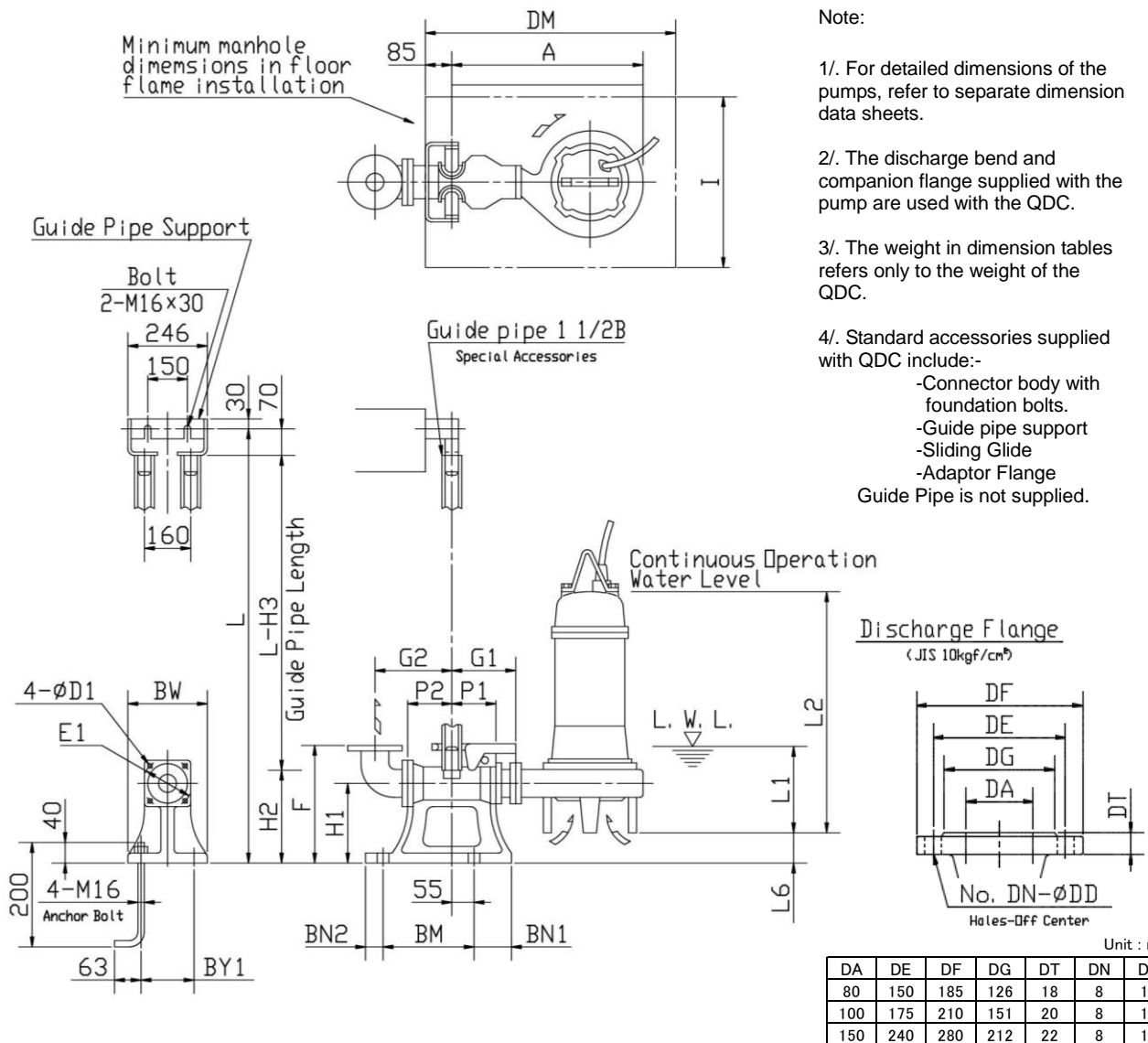
Unit : mm

DA	DE	DF	DG	DT	DN	DD
80	150	185	126	18	8	15

Unit : mm

Size DA	QDC Model	Pump model	Quick discharge connector														Weight kg		
			A	P1	P2	G1	G2	F	H1	H2	H3	L1	L2	L6	BN1	BN2		D1	E1
80	LM80	80 DML3 52.2	492	75	90	125	165	285	175	230	280	279	750	7	75	90	15	155	17
		80 DML3 53.7	492	75	90	125	165	285	175	230	280	279	750	7	75	90	15	155	17

**■ Applicable Models – DML3 with QDC(LL80,LL100)**



Unit : mm

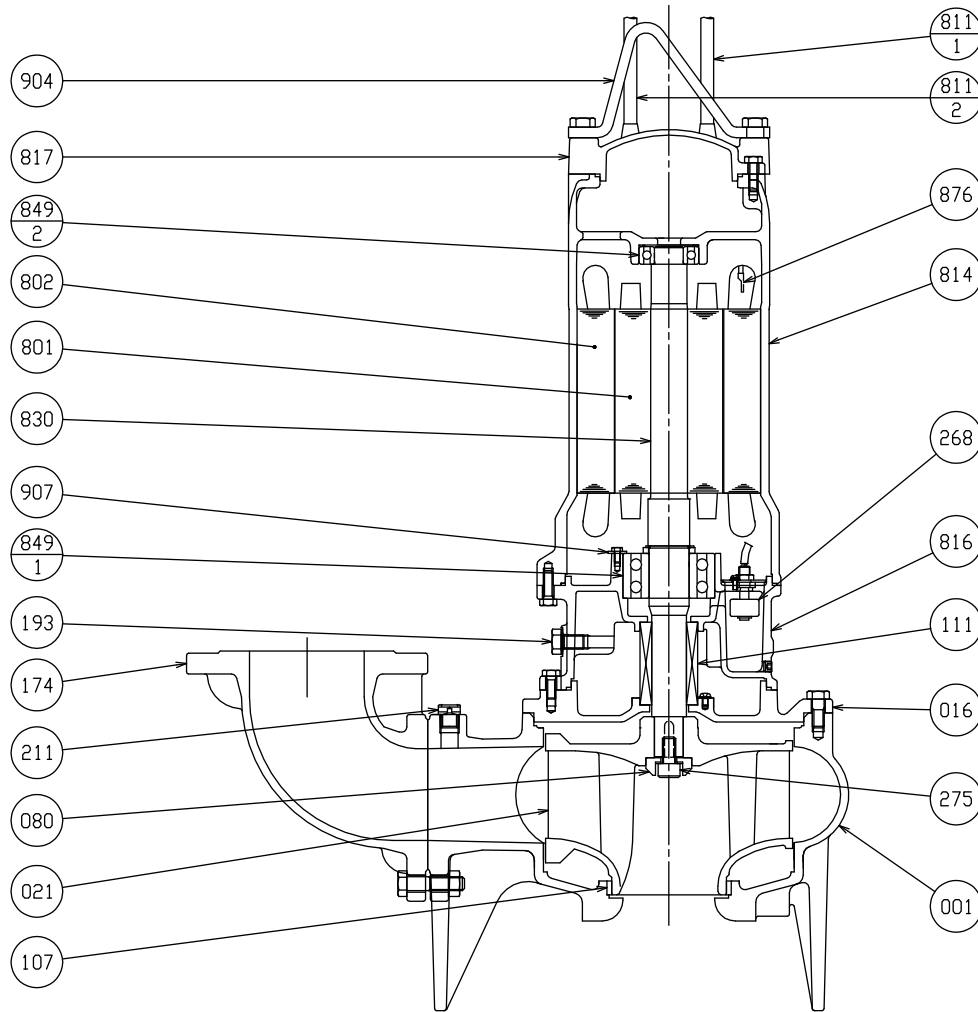
DA	DE	DF	DG	DT	DN	DD
80	150	185	126	18	8	15
100	175	210	151	20	8	15
150	240	280	212	22	8	19

Unit : mm

Size DA	QDC model	Pump model	Quick discharge connector																			Weight kg		
			A	P1	P2	G1	G2	F	H1	H2	H3	L1	L2	L6	BN1	BN2	BM	BY1	BW	DM	I		D1	E1
80	LL100	80 DML3 55.5	628	105	105	185	210	365	240	265	335	310	867	31	100	40	220	180	230	800	700	19	175	46
		80 DML3 57.5	628	105	105	185	210	365	240	265	335	310	867	31	100	40	220	180	230	800	700	19	175	46
		80 DML3 511	721	105	105	185	210	365	240	265	335	329	926	15	100	40	220	180	230	1000	700	19	175	46
		80 DML3 515	721	105	105	185	210	365	240	265	335	329	1006	15	100	40	220	180	230	1000	700	19	175	46
		80 DML3 522	765	105	105	185	210	365	240	265	335	332	1004	12	100	40	220	180	230	1000	700	19	175	46
100	LL80	100 DML3 52.2	552	105	120	185	225	365	240	255	325	279	750	52	100	40	220	180	230	800	700	15	155	44
		100 DML3 53.7	552	105	120	185	225	365	240	255	325	279	750	52	100	40	220	180	230	800	700	15	155	44
	LL100	100 DML3 55.5	628	105	105	185	210	365	240	265	335	310	867	31	100	40	220	180	230	800	700	19	175	46
		100 DML3 57.5	628	105	105	185	210	365	240	265	335	310	867	31	100	40	220	180	230	800	700	19	175	46
		100 DML3 511	721	105	105	185	210	365	240	265	335	329	926	15	100	40	220	180	230	1000	700	19	175	46
		100 DML3 515	721	105	105	185	210	365	240	265	335	329	1006	15	100	40	220	180	230	1000	700	19	175	46
100 DML3 522	765	105	105	185	210	365	240	265	335	332	1004	12	100	40	220	180	230	1000	700	19	175	46		
150	LL100	150 DML3 55.5	628	105	105	185	235	400	240	265	335	310	867	31	100	40	220	180	230	800	700	19	175	46
		150 DML3 57.5	628	105	105	185	235	400	240	265	335	310	867	31	100	40	220	180	230	800	700	19	175	46
		150 DML3 511	721	105	105	185	235	400	240	265	335	329	926	15	100	40	220	180	230	1000	700	19	175	46
		150 DML3 515	721	105	105	185	235	400	240	265	335	329	1006	15	100	40	220	180	230	1000	700	19	175	46
		150 DML3 522	765	105	105	185	235	400	240	265	335	332	1004	12	100	40	220	180	230	1000	700	19	175	46

**Sectional View – 80(100) DML3 (2.2~3.7kW)**

**50Hz**



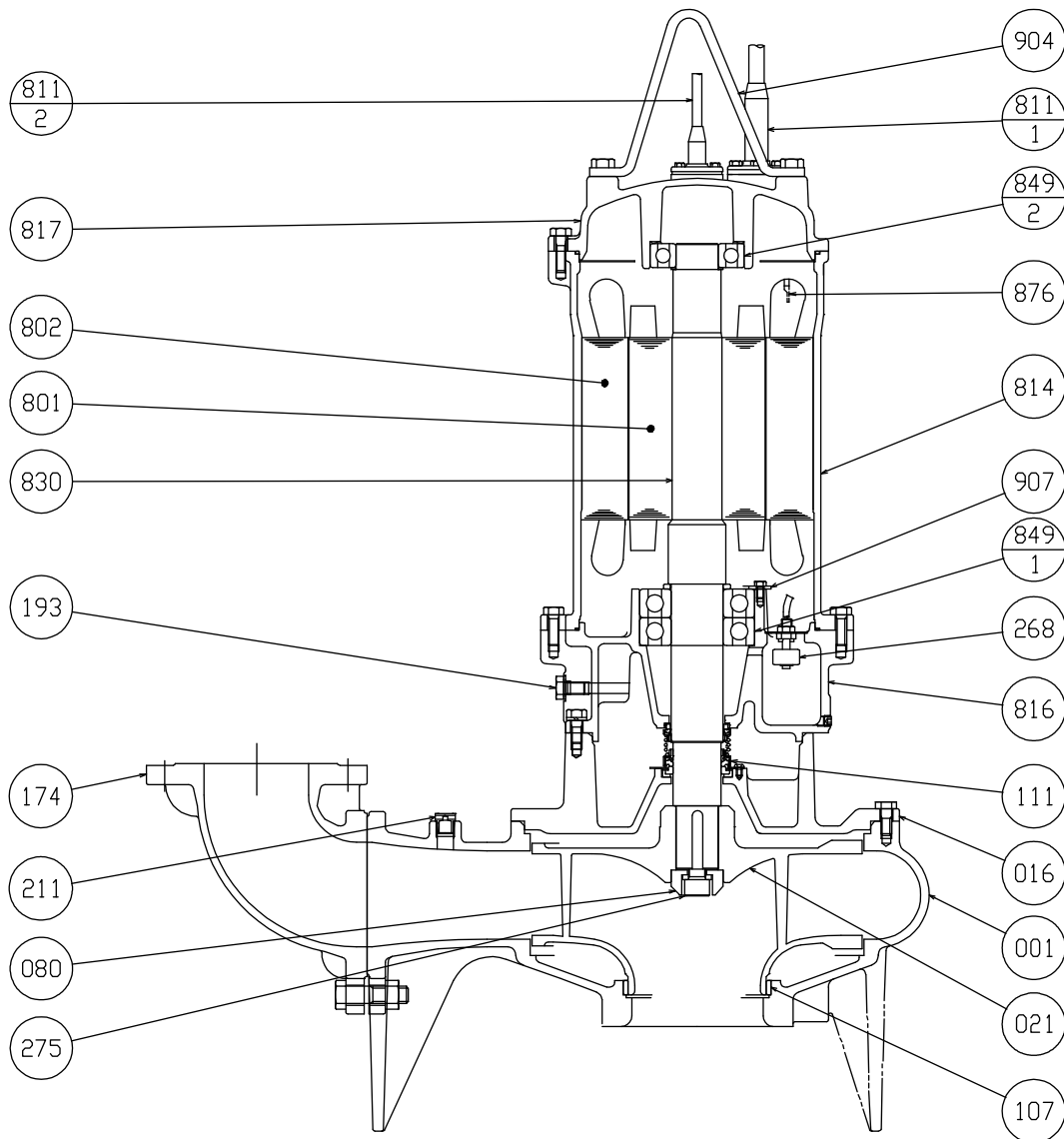
Item Number	Part Name	Material		Qty per unit
001	Pump Casing	FC200	Cast iron	1
016	Mechanical Seal Cover	FC200	Cast iron	1
021	Impeller	FC200	Cast iron	1
080	Bushing	SS	Steel	1
107	Wearing Ring	BC	Bronze	1
111	Mechanical Seal			1
174	Discharge Bend	FC200	Cast iron	1
193	Oil Plug	NBR / SUS304		1 set
211	Air Vent Valve	C3604	Brass	1
268	Leakage Detector			1
275	Impeller Bolt	SUS304	Stainless Steel	1
801	Rotor			1

Item Number	Part Name	Material		Qty per unit
802	Stator			1
811-1	Submersible Cable (Power)			1
811-2	Submersible Cable (Signal)			1
814	Motor Frame	FC200	Cast iron	1
816	Power Side Bracket	FC200	Cast iron	1
830	Shaft	SUS403	Stainless Steel	1
842	Head Cover	FC200	Cast iron	1
849-1	Ball Bearing			1
849-2	Ball Bearing			1
876	Thermal Protector			2
904	Lifting Hanger	SS	Steel	1
907	Bearing Cover	SPCC	Steel	3



**Sectional View – 80(100)(150) DML3 (5.5~7.5kW)**

**50Hz**

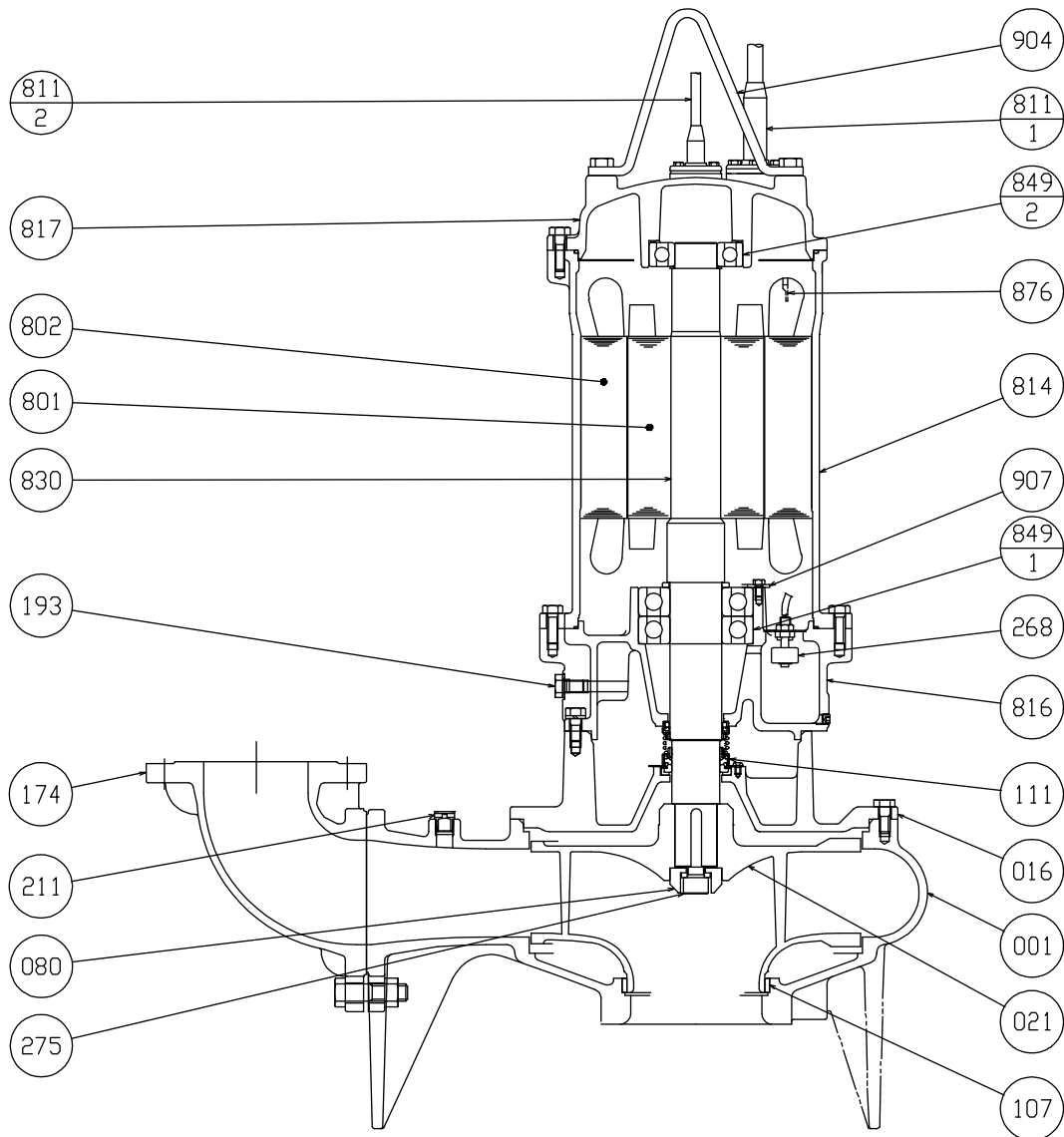


Item Number	Part Name	Material		Qty per unit
001	Pump Casing	FC200	Cast iron	1
016	Mechanical Seal Cover	FC200	Cast iron	1
021	Impeller	FC200	Cast iron	1
080	Bushing	SS	Steel	1
107	Wearing Ring	BC	Bronze	1
111	Mechanical Seal			1
174	Discharge Bend	FC200	Cast iron	1
193	Oil Plug	NBR / SUS304		1 set
211	Air Vent Valve	C3604	Brass	1
268	Leakage Detector			1
275	Impeller Bolt	SUS304	Stainless Steel	1
801	Rotor			1

Item Number	Part Name	Material		Qty per unit
802	Stator			1
811-1	Submersible Cable (Power)			1
811-2	Submersible Cable (Signal)			1
814	Motor Frame	FC200	Cast iron	1
816	Power Side Braket	FC200	Cast iron	1
817	Opposite Side Braket	FC200	Cast iron	1
830	Shaft	SUS403	Stainless Steel	1
849-1	Ball Bearing			1
849-2	Ball Bearing			1
876	Thermal Protector			2
904	Lifting Hanger	SS	Steel	1
907	Bearing Cover	SPCC	Steel	1

**Sectional View – 80(100)(150) DML3 (11~15kW)**

**50Hz**

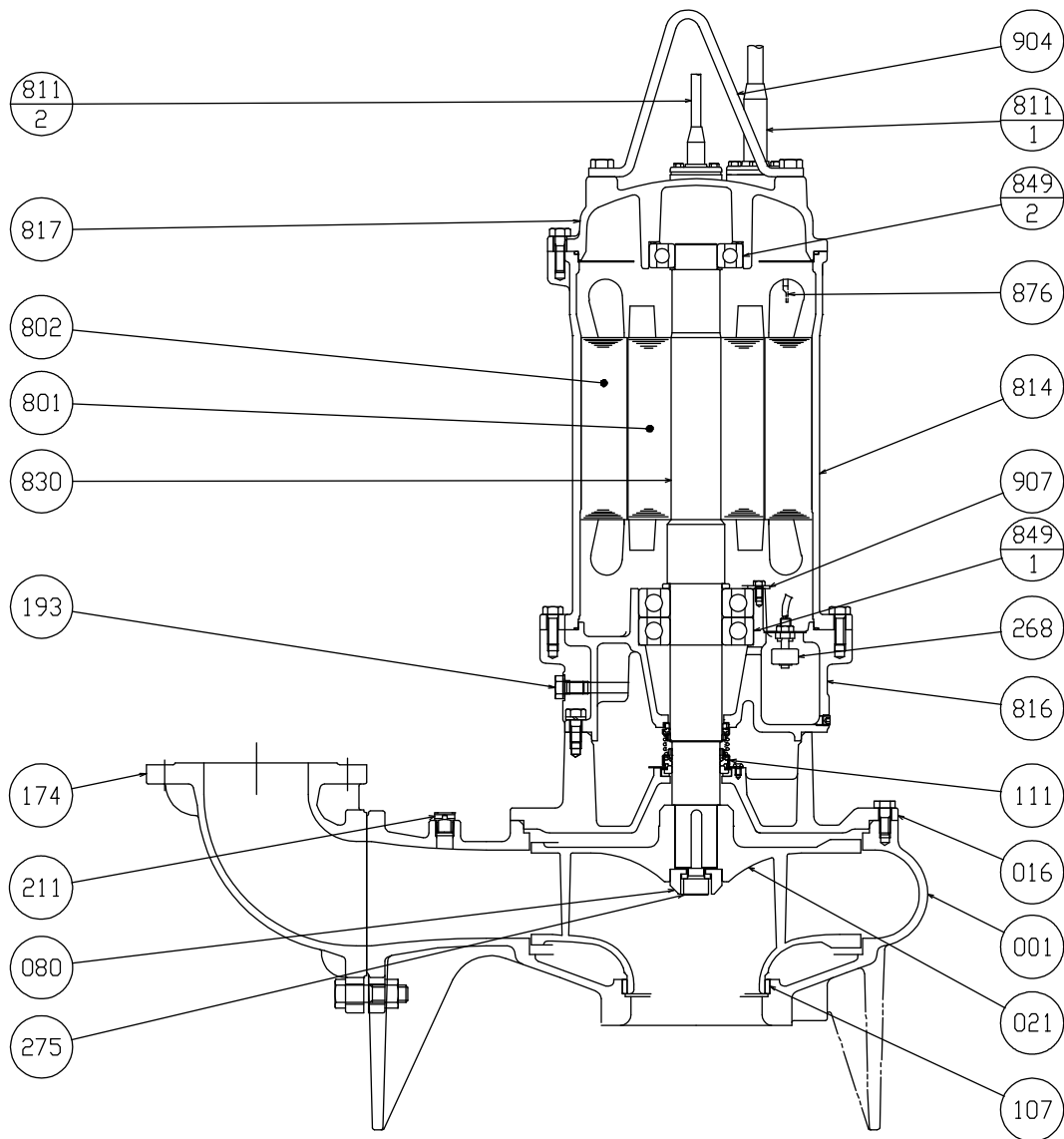


Item Number	Part Name	Material		Qty per unit
001	Pump Casing	FC200	Cast iron	1
016	Mechanical Seal Cover	FC200	Cast iron	1
021	Impeller	FC200	Cast iron	1
080	Bushing	SS	Steel	1
107	Wearing Ring	BC	Bronze	1
111	Mechanical Seal			1
174	Discharge Bend	FC200	Cast iron	1
193	Oil Plug	NBR / SUS304		1 set
211	Air Vent Valve	C3604	Brass	1
268	Leakage Detector			1
275	Impeller Bolt	SUS304	Stainless Steel	1
801	Rotor			1

Item Number	Part Name	Material		Qty per unit
802	Stator			1
811-1	Submersible Cable (Power)			2
811-2	Submersible Cable (Signal)			1
814	Motor Frame	FC200	Cast iron	1
816	Power Side Braket	FC200	Cast iron	1
817	Opposite Side Braket	FC200	Cast iron	1
830	Shaft	SUS403	Stainless Steel	1
849-1	Ball Bearing			1
849-2	Ball Bearing			1
876	Thermal Protector			2
904	Lifting Hanger	SS	Steel	1
907	Bearing Cover	SPCC	Steel	1

**Sectional View – 80(100)(150) DML3 522**

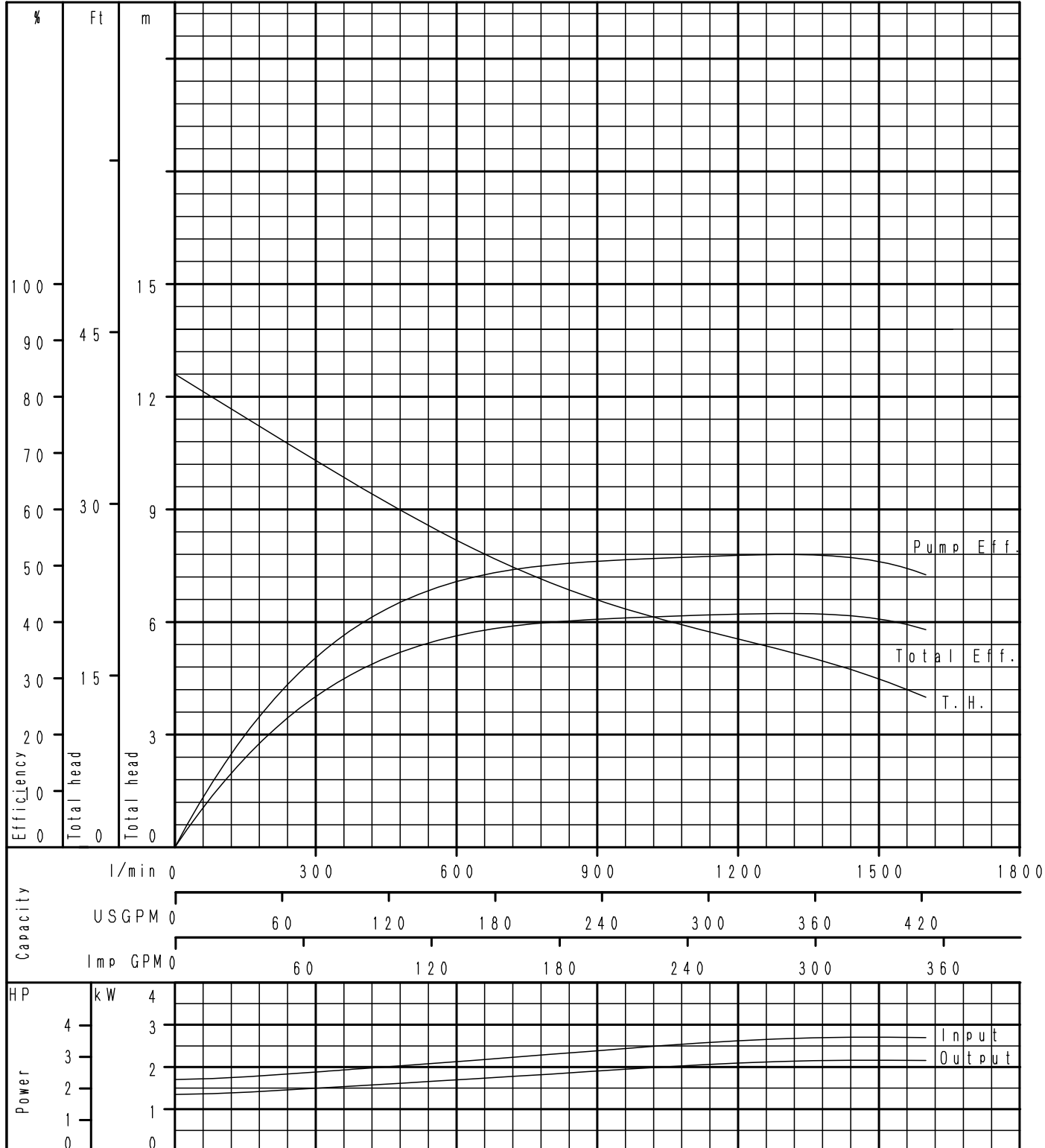
**50Hz**



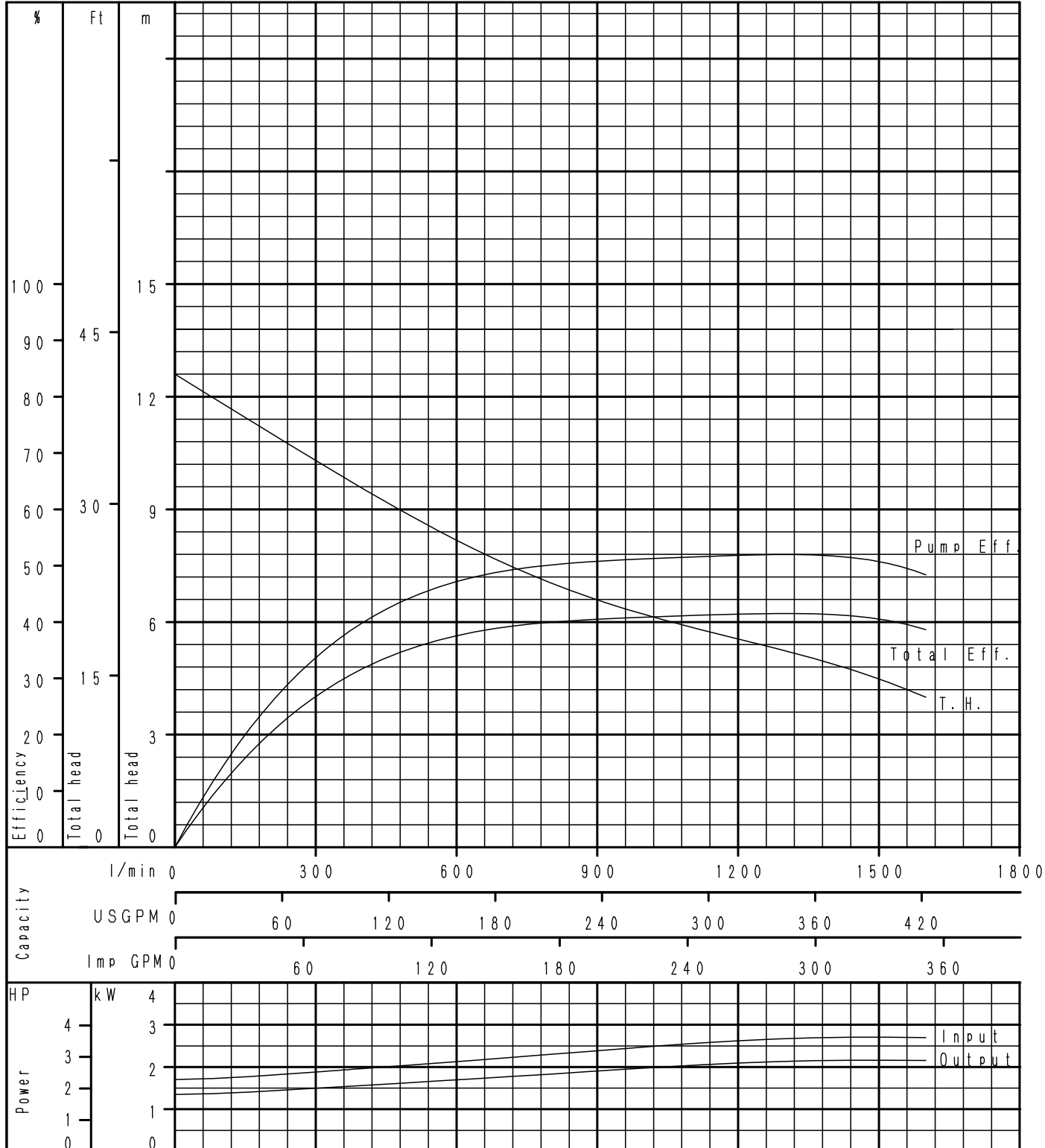
Item Number	Part Name	Material		Qty per unit
001	Pump Casing	FC200	Cast iron	1
016	Mechanical Seal Cover	FC200	Cast iron	1
021	Impeller	FCD400	Cast iron	1
080	Bushing	SS	Steel	1
107	Wearing Ring	BC	Bronze	1
111	Mechanical Seal			1
174	Discharge Bend	FC200	Cast iron	1
193	Oil Plug	NBR / SUS304		1 set
211	Air Vent Valve	C3604	Brass	1
268	Leakage Detector			1
275	Impeller Bolt	SUS304	Stainless Steel	1
801	Rotor			1

Item Number	Part Name	Material		Qty per unit
802	Stator			1
811-1	Submersible Cable (Power)			2
811-2	Submersible Cable (Signal)			1
814	Motor Frame	FC200	Cast iron	1
816	Power Side Braket	FC200	Cast iron	1
817	Opposite Side Braket	FC200	Cast iron	1
830	Shaft	SUS403	Stainless Steel	1
849-1	Ball Bearing			1
849-2	Ball Bearing			1
876	Thermal Protector			2
904	Lifting Hanger	SS	Steel	1
907	Bearing Cover	SPCC	Steel	1

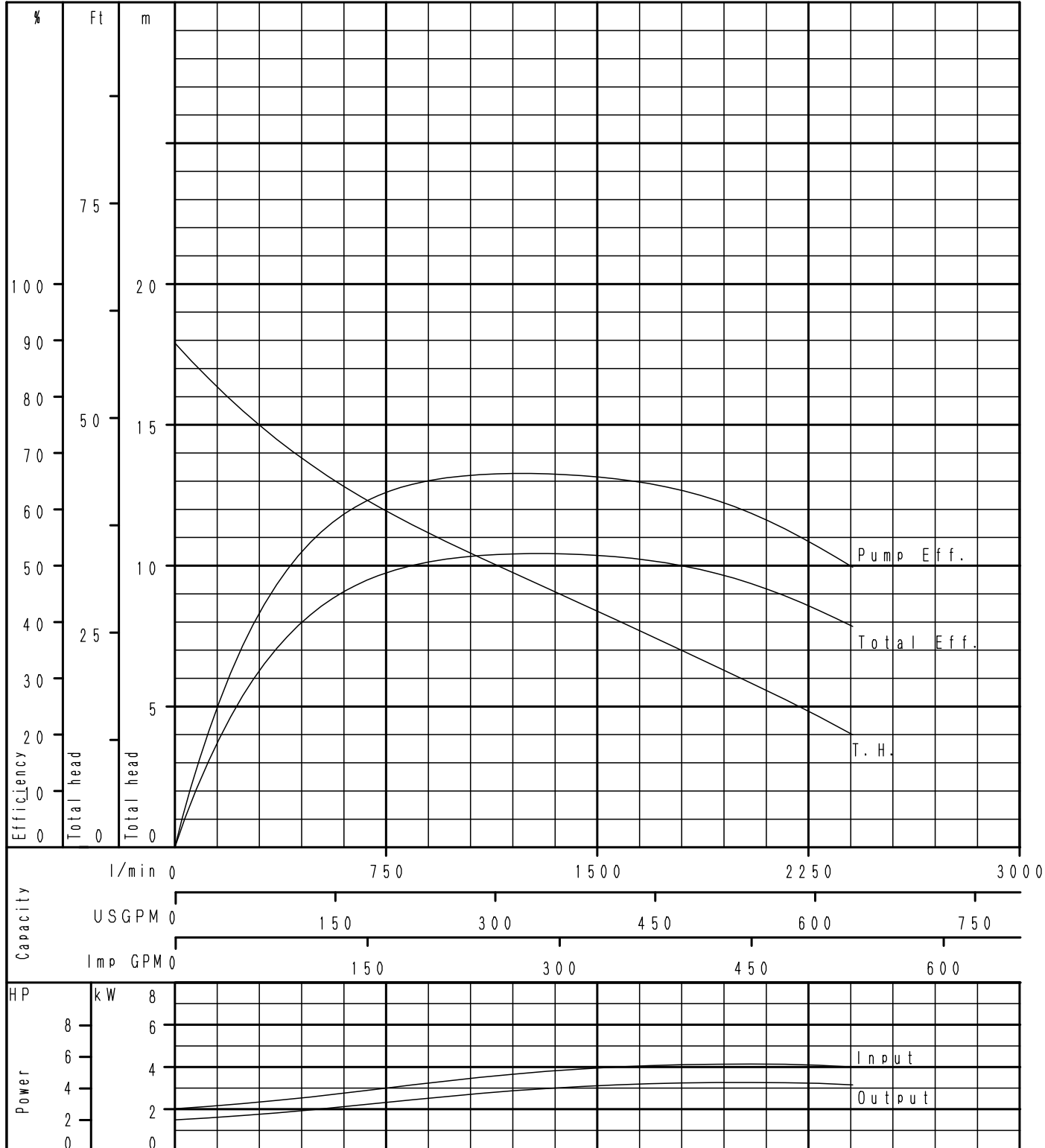
80DML352.2	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s



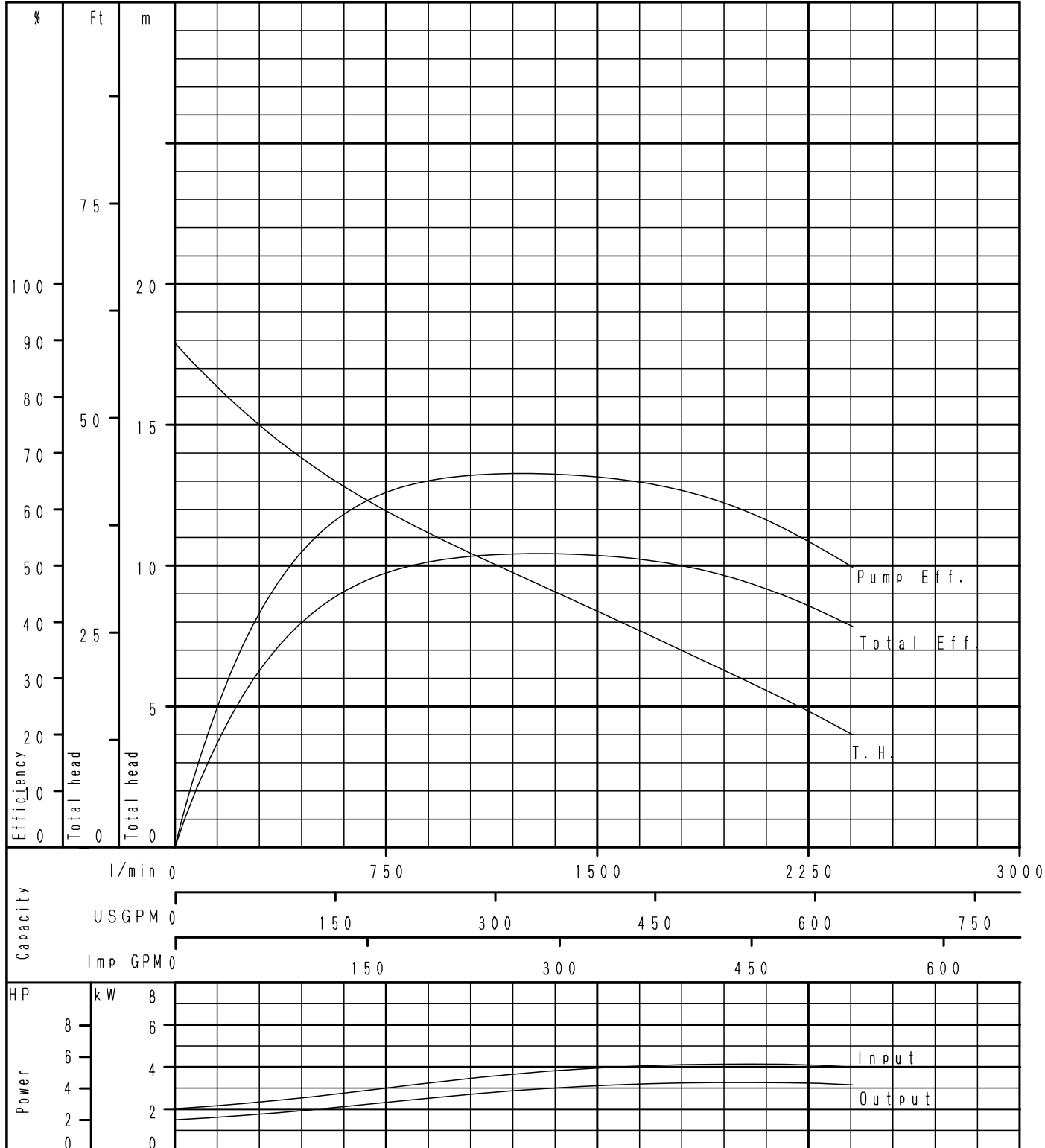
100DML352.2	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s



80DML353.7	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s



100DML353.7	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

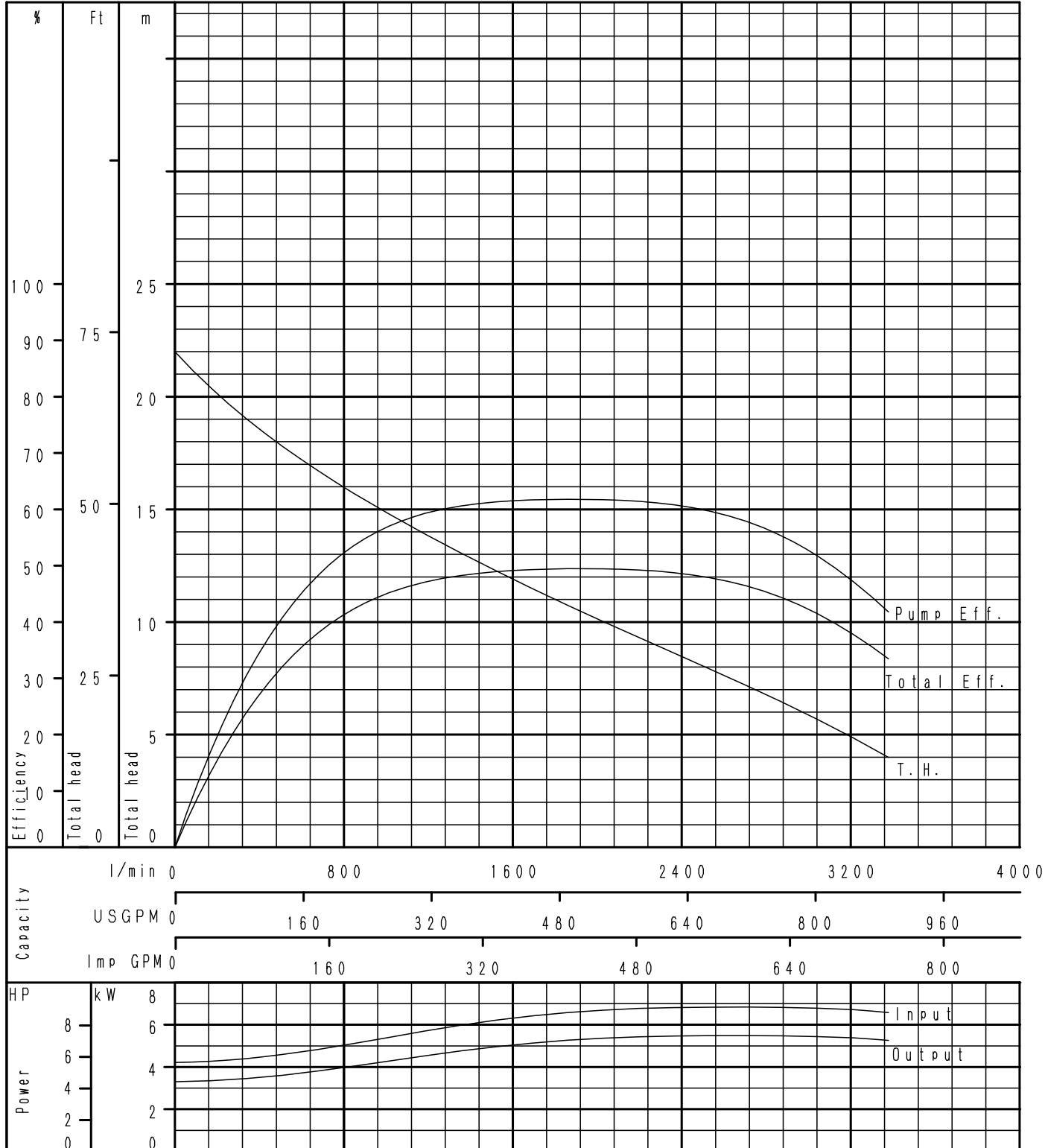


Performance Curve

4 Poles

50Hz

80DML355.5	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s



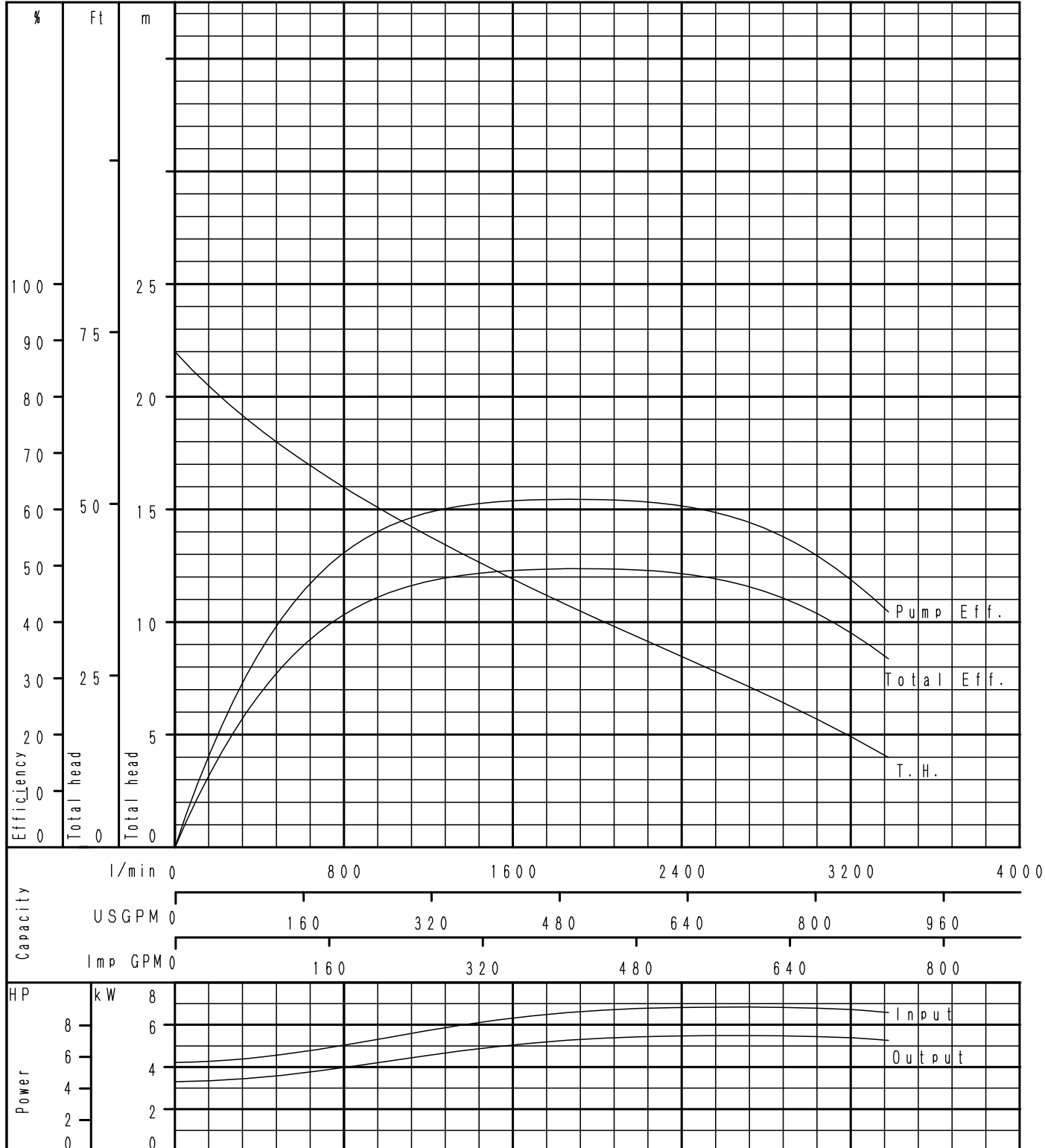


Performance Curve

4 Poles

50Hz

100DML355.5	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

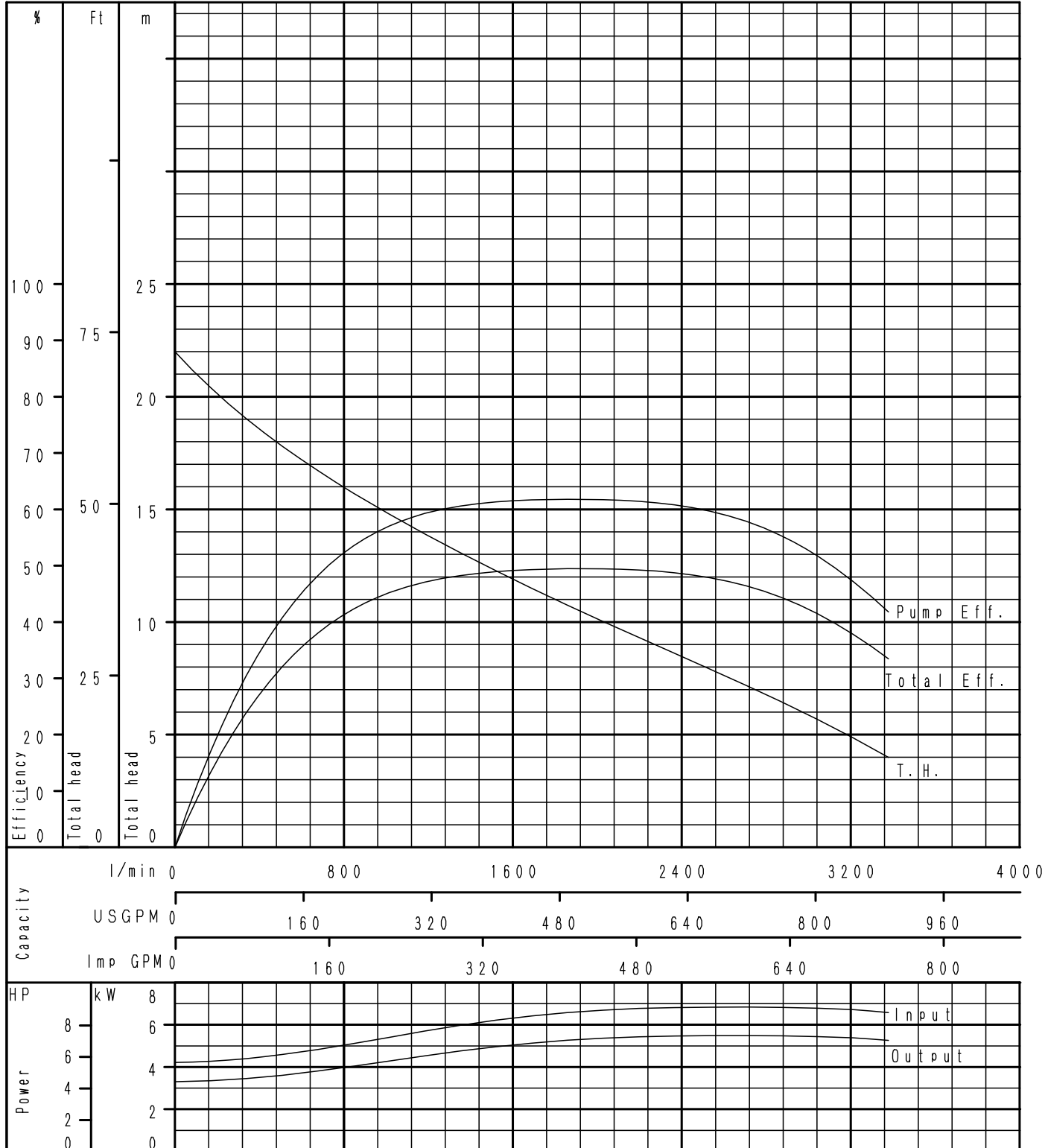


Performance Curve

4 Poles

50Hz

150DML355.5	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

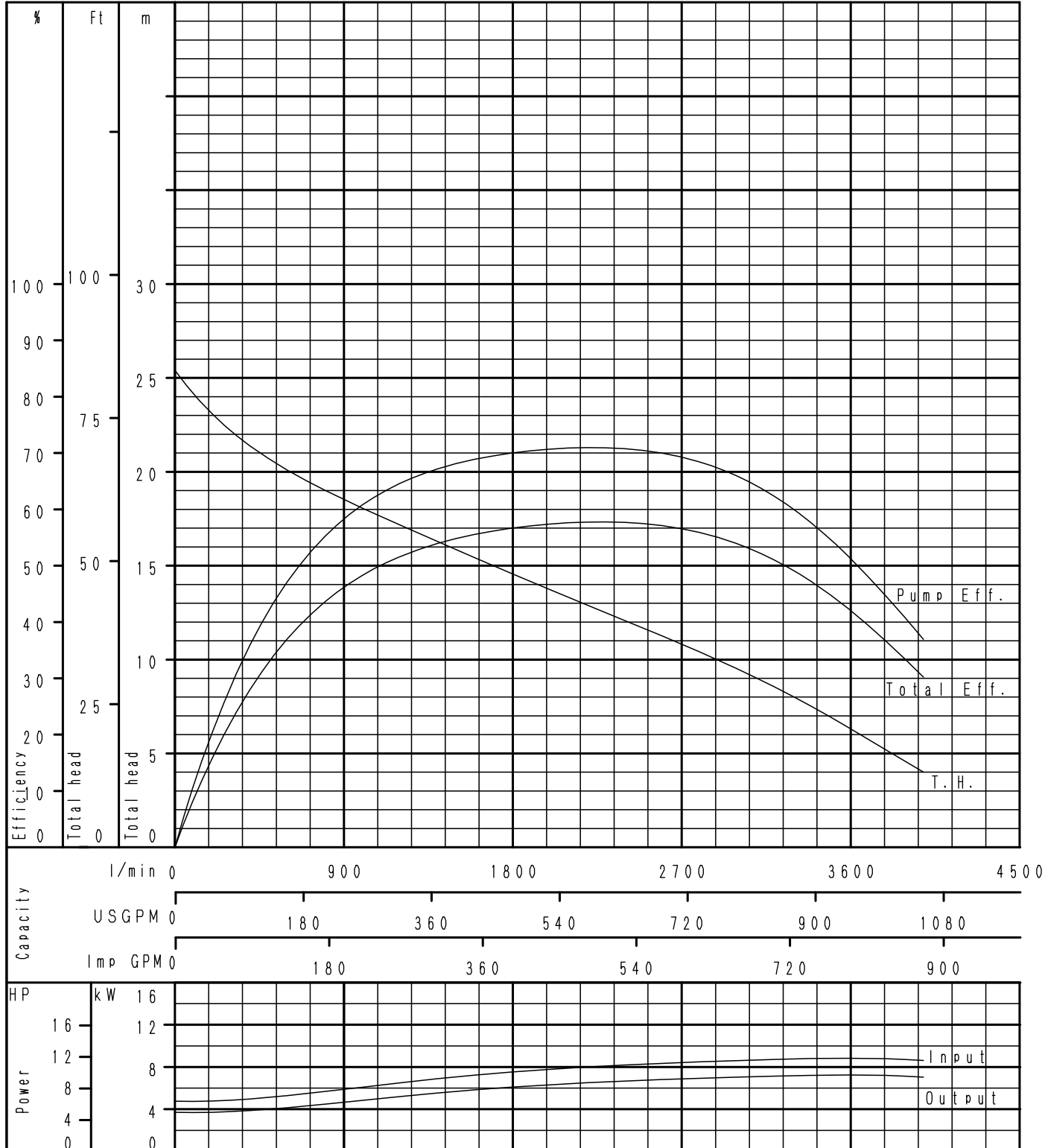


Performance Curve

4 Poles

50Hz

80DML357.5	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

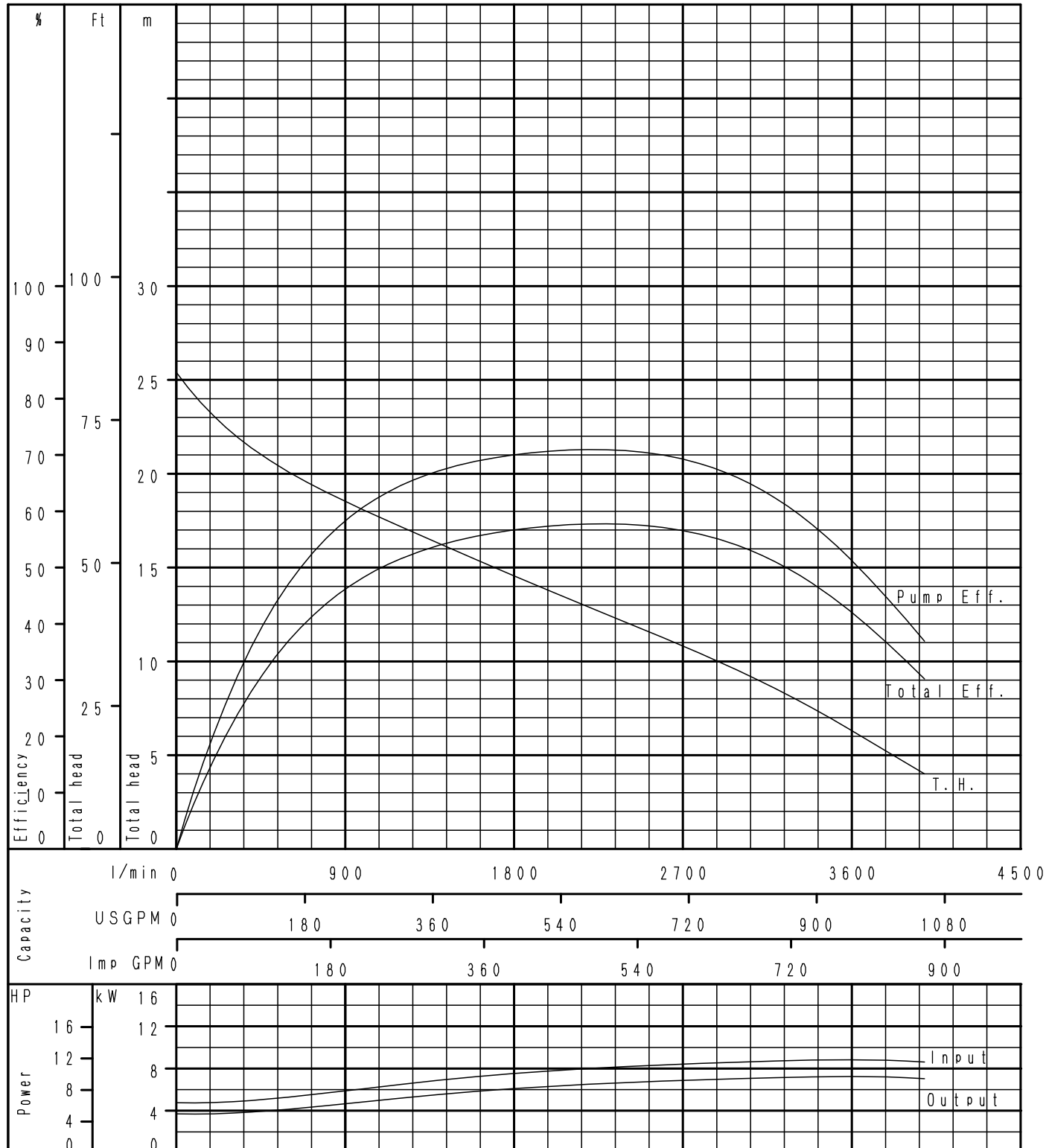


Performance Curve

4 Poles

50Hz

100DML357.5	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

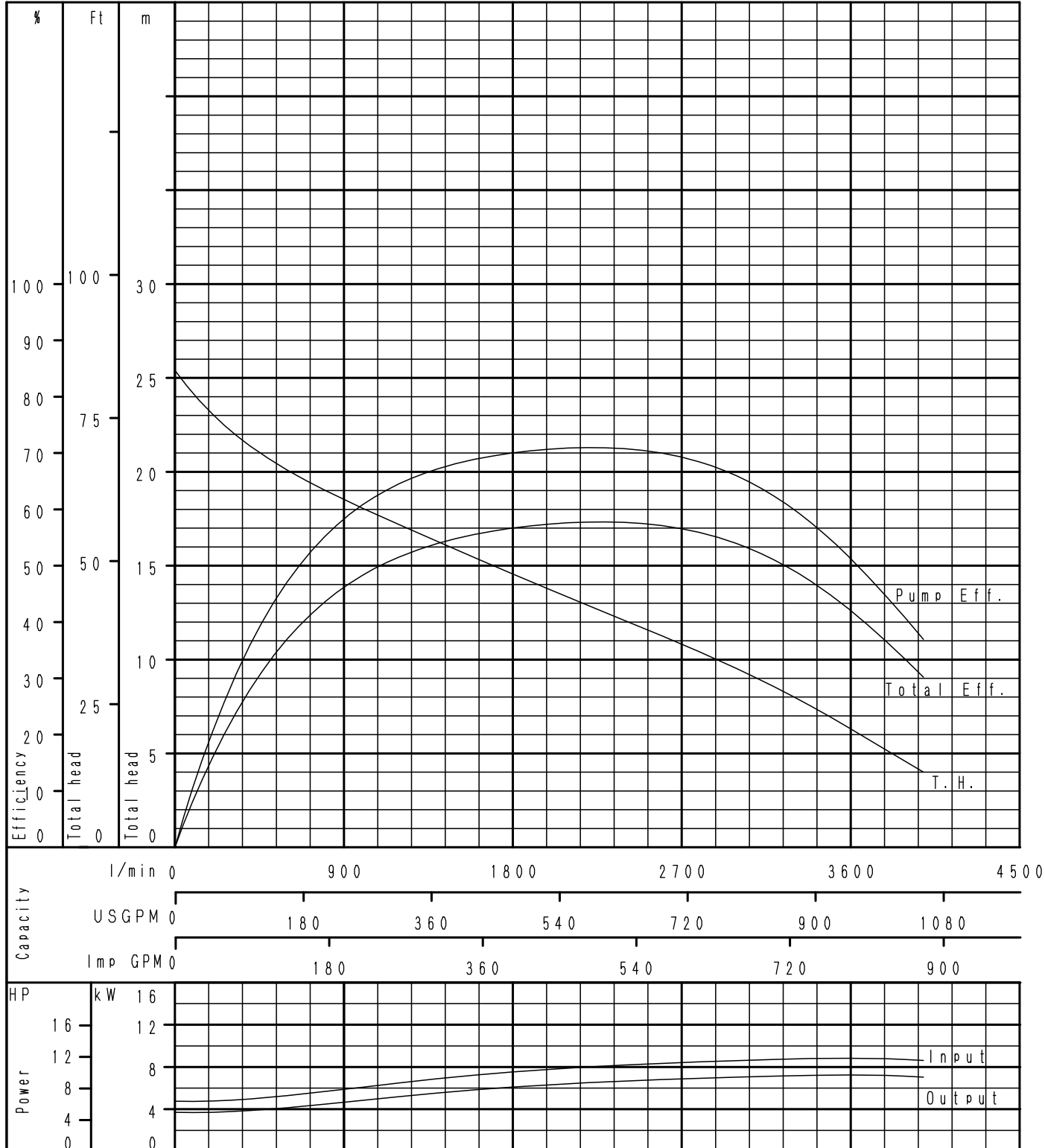


Performance Curve

4 Poles

50Hz

150DML357.5	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

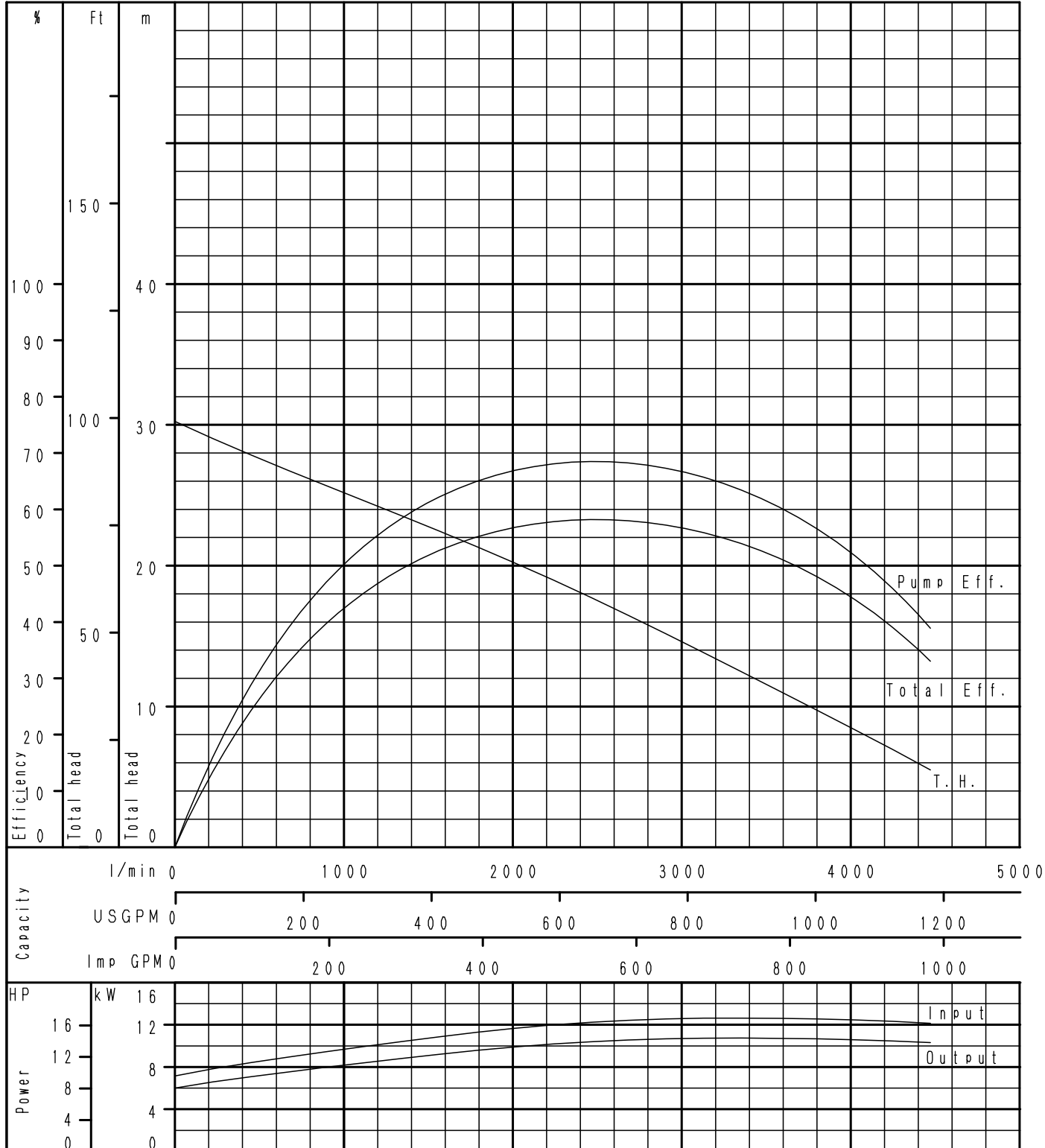


Performance Curve

4 Poles

50Hz

80DML3511	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

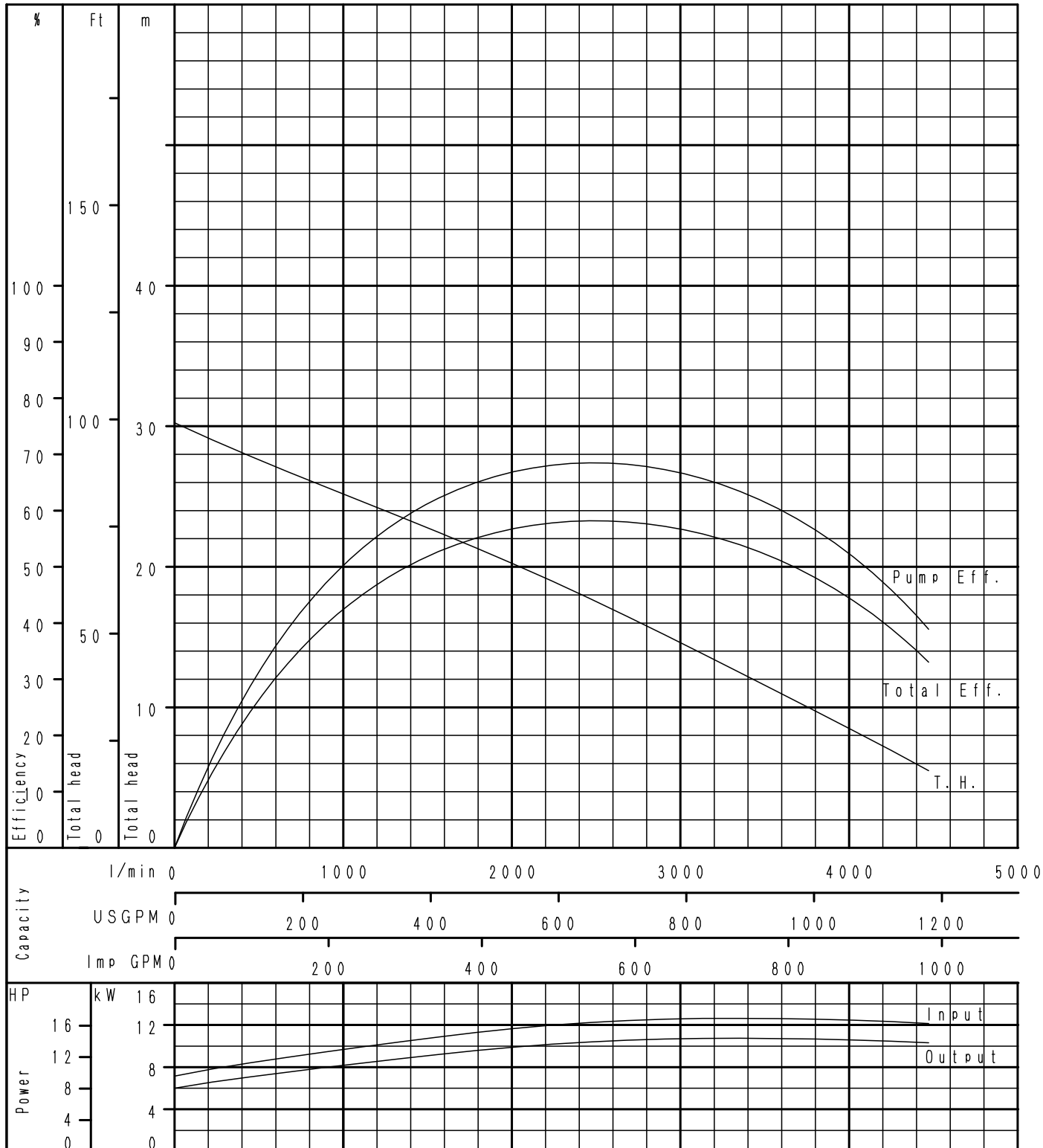


Performance Curve

4 Poles

50Hz

100DML3511	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

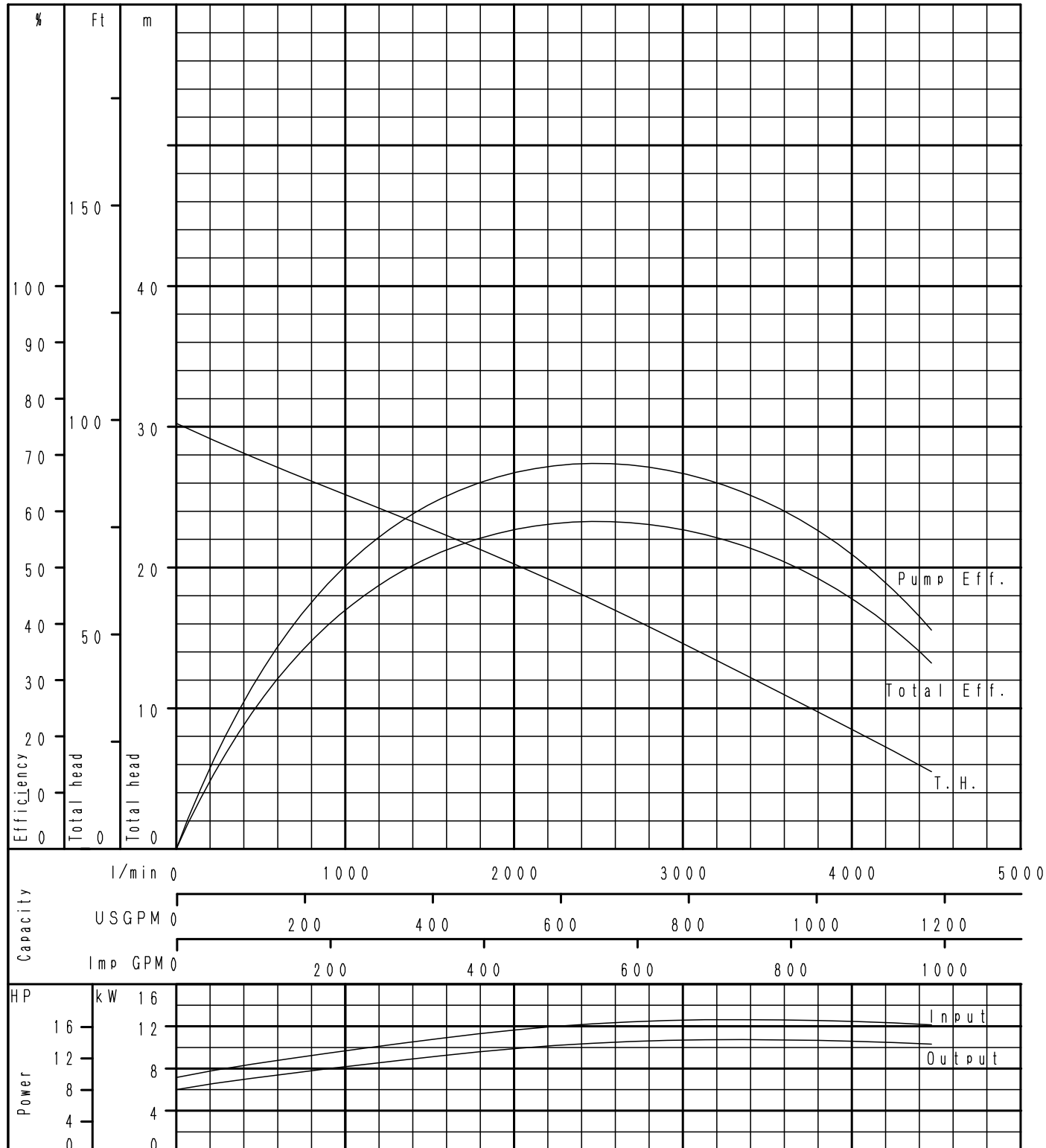


Performance Curve

4 Poles

50Hz

150DML3511	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s



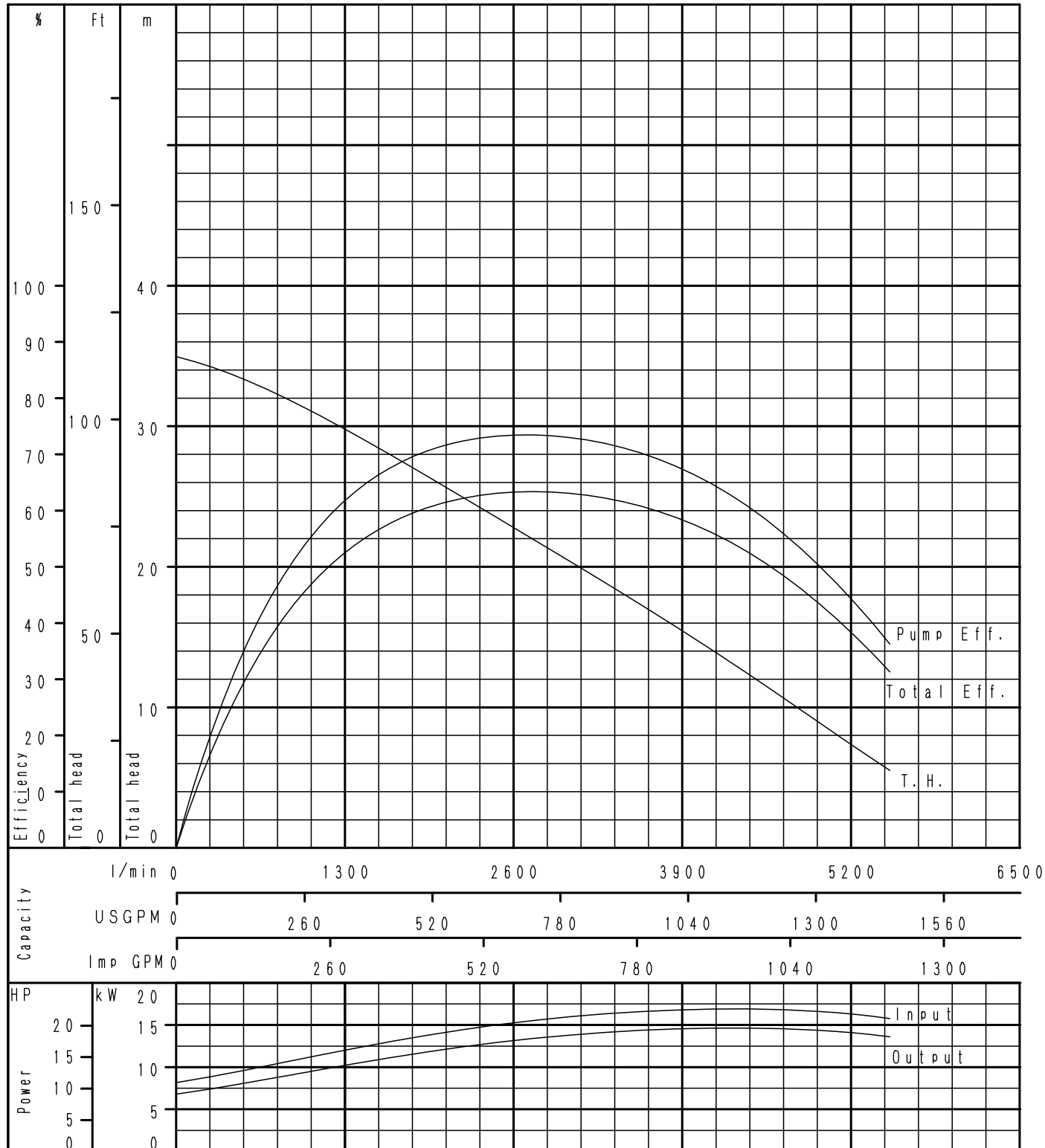


Performance Curve

4 Poles

50Hz

80DML3515	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

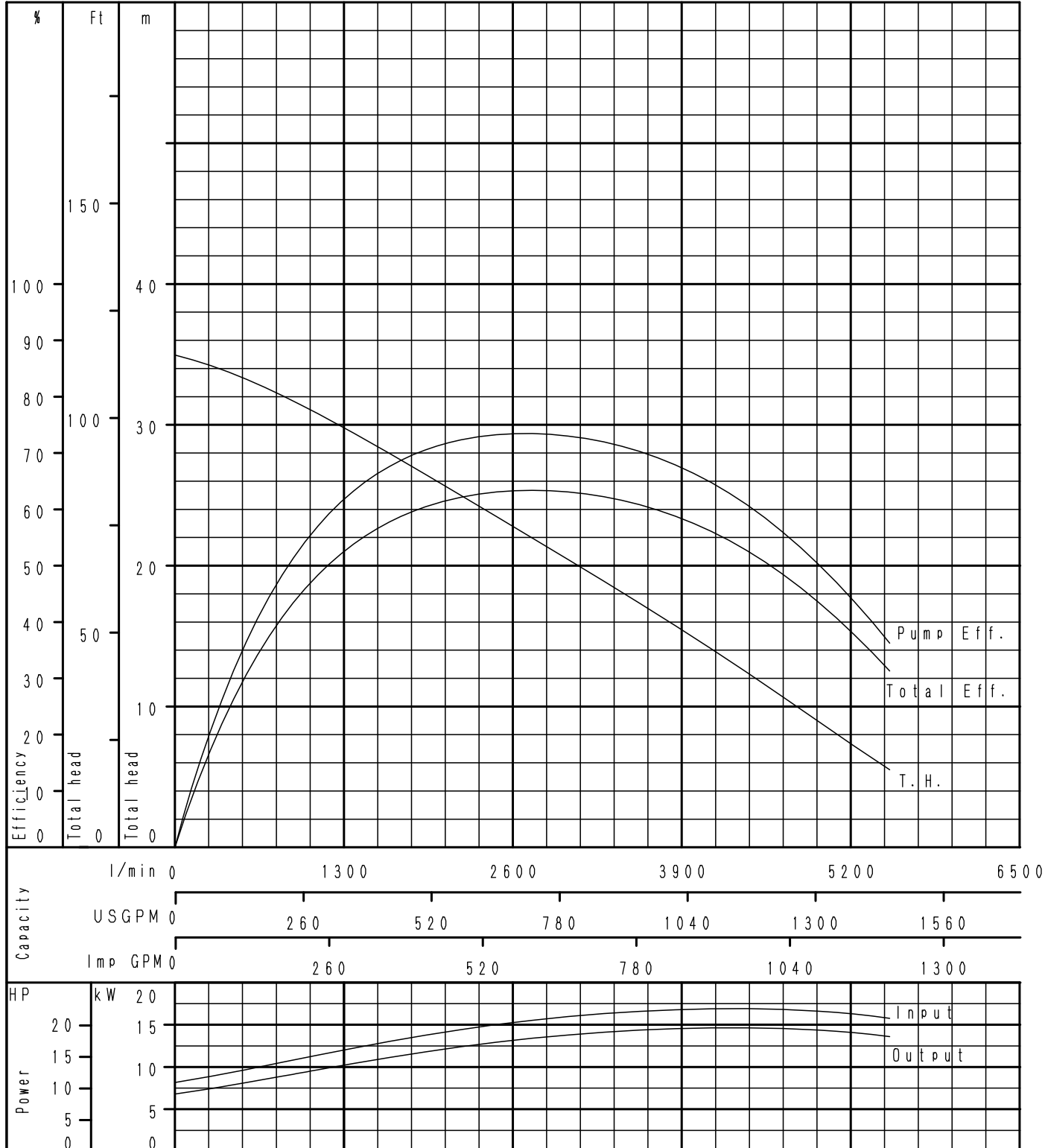


Performance Curve

4 Poles

50Hz

100DML3515	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

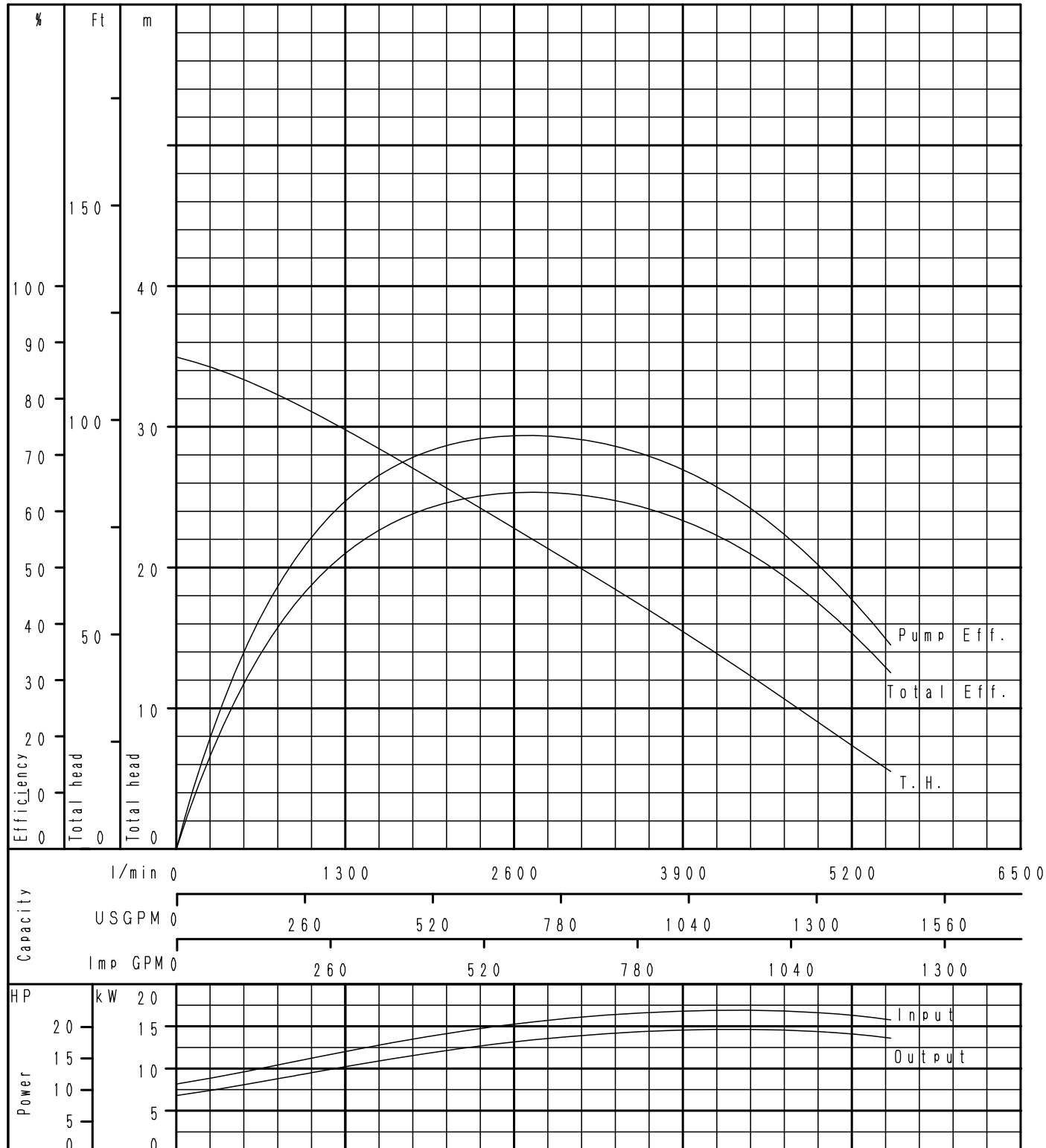


Performance Curve

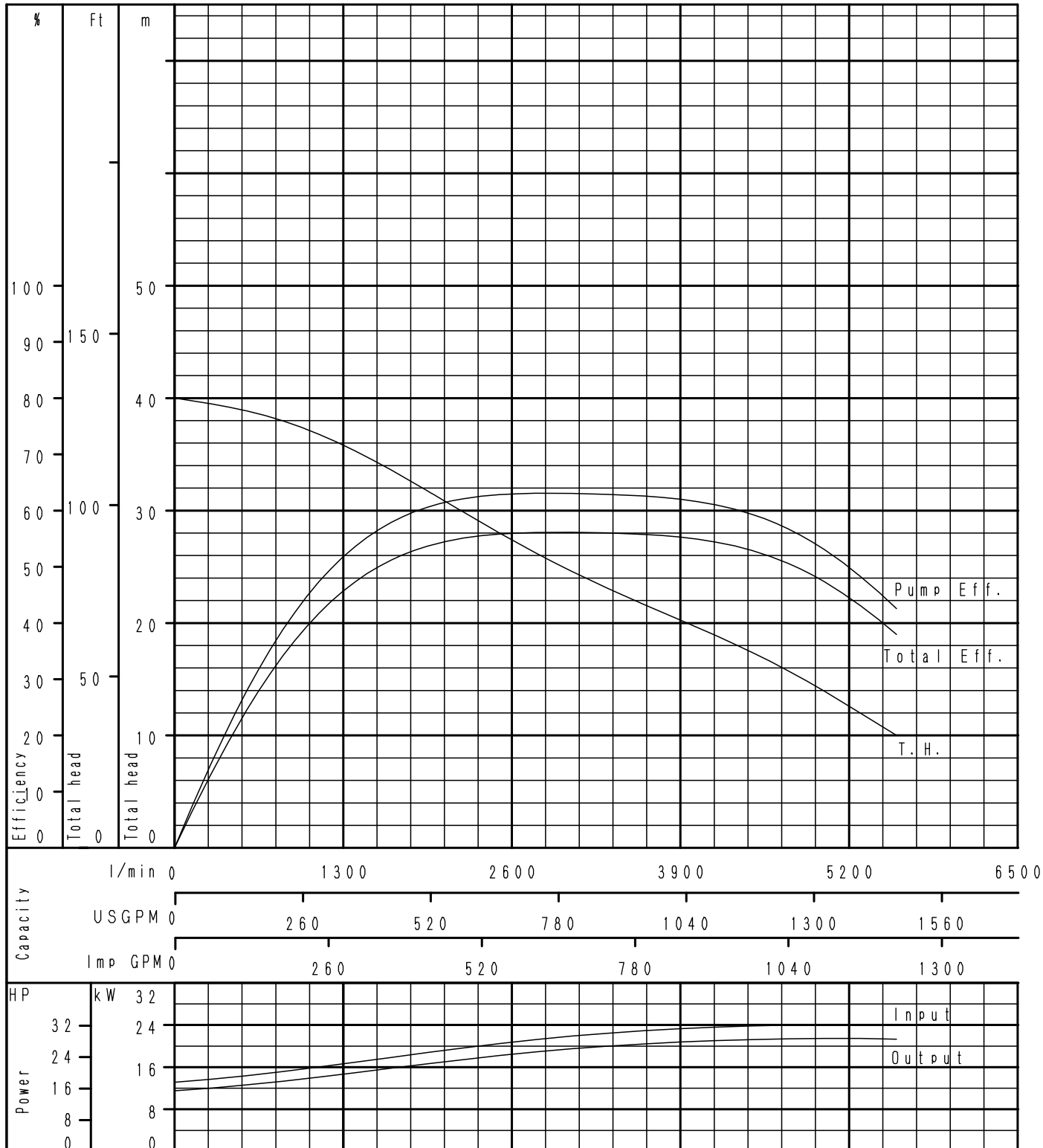
4 Poles

50Hz

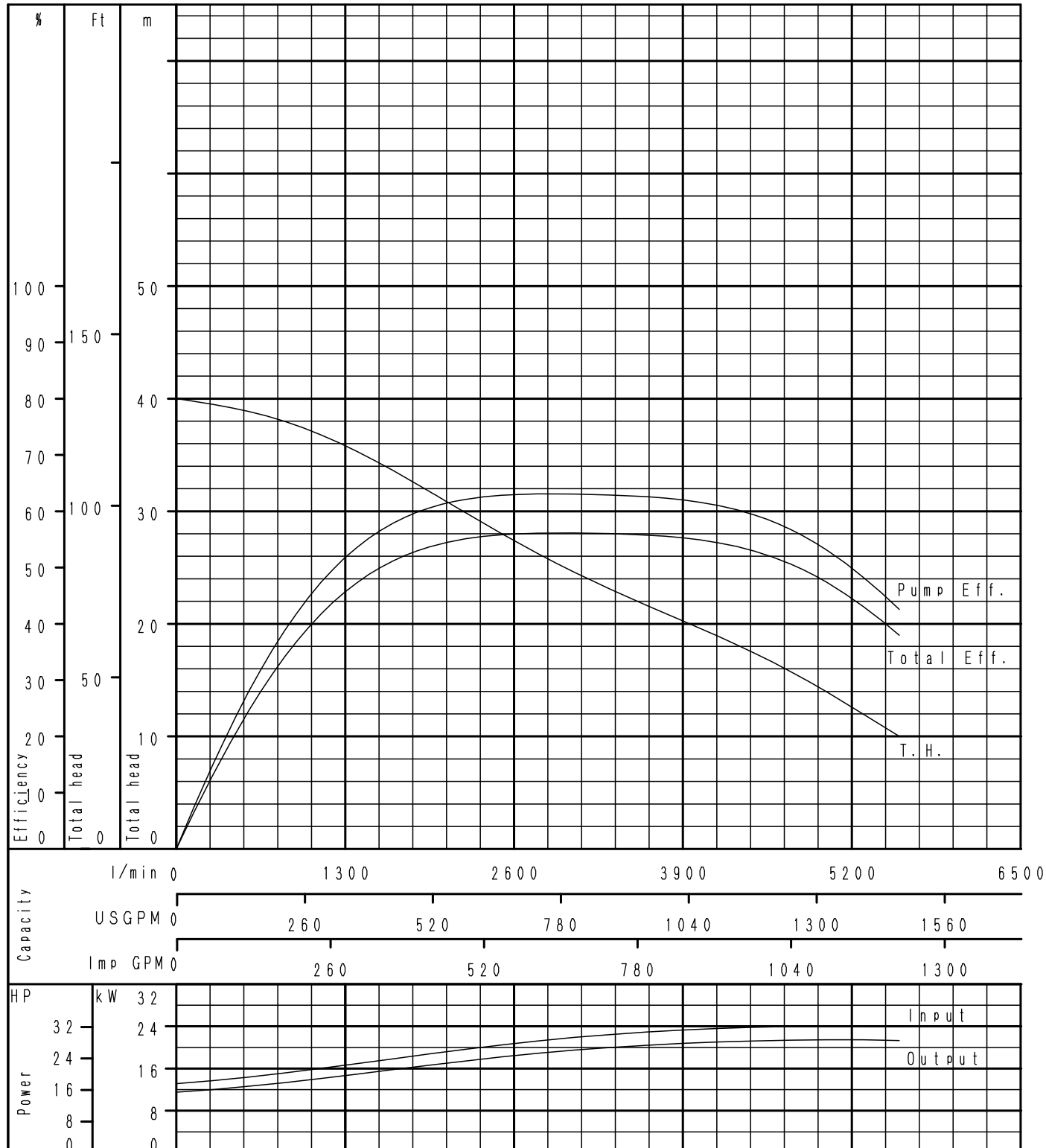
150DML3515	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s



80DML3522	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s



100DML3522	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s



150DML3522	According to ISO testing code 9906 Grade 3B
50 Hz (Synchronous Speed 1500 min <sup>-1</sup> )	Density=1kg/dm <sup>3</sup> Viscosity=1mm <sup>2</sup> /s

