

DL SERIES

SUBMERSIBLE PUMPS WITH ENTRAINED SOLIDS WASTE WATER

DL series electric pumps are available with single-channel or Vortex impeller (DLV).

Designed to handle with entrained solids wastewater, with head up to 21 m and delivery up to 120 m³/h.

APPLICATIONS

- Pumping of sewage with suspended solids and filaments.
- Emptying of sumps, septic tanks and wastewater discharge tanks.
- Draining of flooded excavations and marshy ground.
- Water display, fountains.

SPECIFICATIONS

- Squirrel cage **motor** in a dielectric non-toxic **oil cooled**, which ensures the lubrication of the ball bearings and more efficient cooling.
- **2-pole** (0.6 to 1.5 kW) and **4-pole** (1.8 to 4 kW) motors.
- **Mechanical seal** protected by **sand labyrinth**.
- Maximum immersion depth: 5 m.
- **IP 68 protection**.
- **Maximum temperature of pumped liquid:**
50°C with fully submerged pump.
25°C with partially submerged pump.
- **Passes solids up to:**
45 mm (DL 80, 90, 105, Minivortex, Vortex).
50 mm (DL 109, 125, 160, DLV 100, 115).
60 mm (DL 180, 200).
65 mm (DLV 120, 140, 160).
- Versions:
Single-phase 220-240 V 50 Hz, with built-in automatic reset overload protection and capacitor box with on/off switch.
Three-phase 220-240 or 380-415 V 50 Hz for pumps up to 4 kW.
 Overload protection to be provided by user (installed in the control box).
- Pre-assembled float available on request (single-phase versions DL...CG, DLV...CG).



TABLE OF MATERIALS

2 POLES PUMPS: DL 80, 90, 105, 109, 125; MINIVORTEX and VORTEX, DLV 100, 115

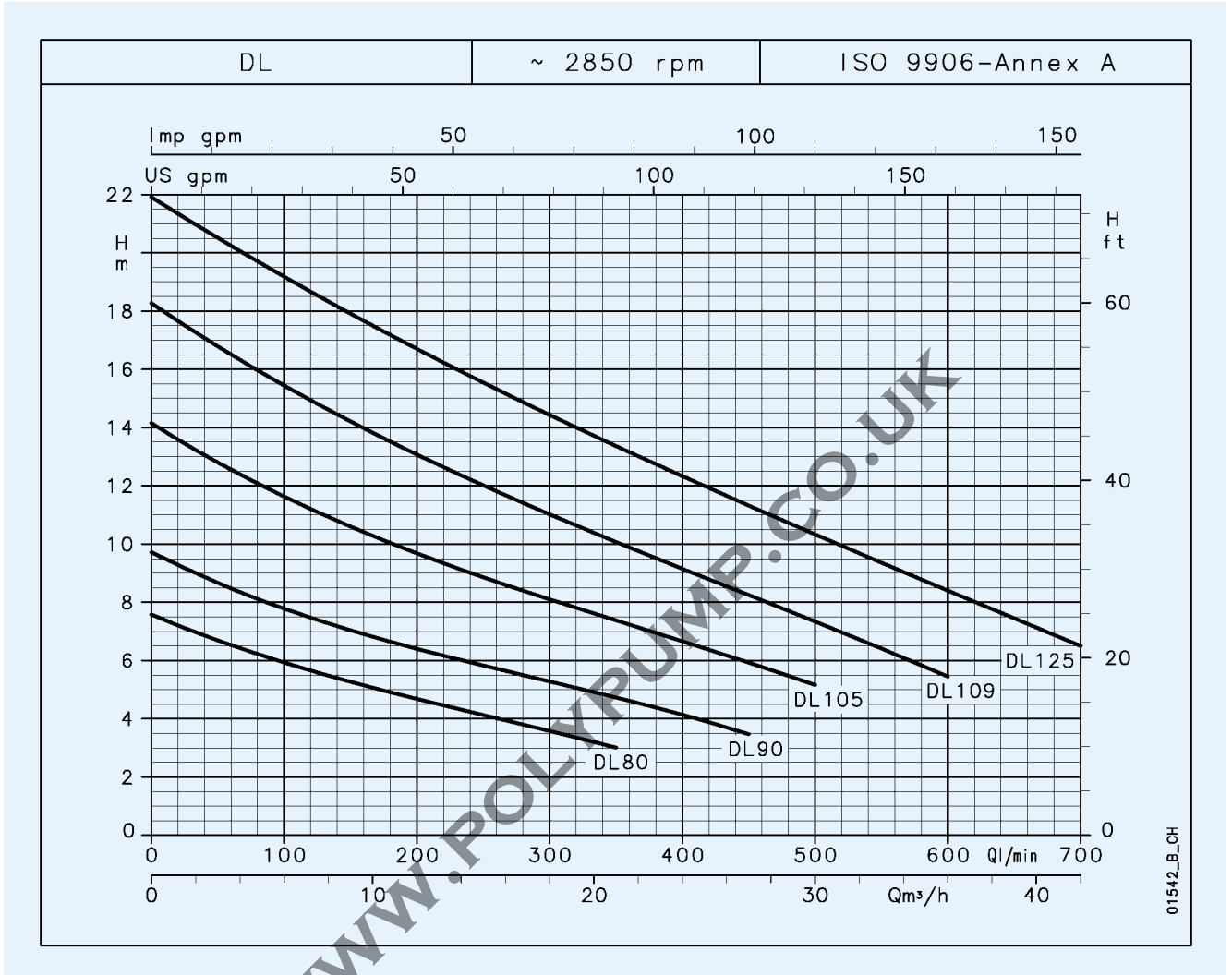
| PART | MATERIAL |
|---|---|
| Pump body | 200 UNI ISO 185 CAST IRON* |
| Impeller | STAINLESS STEEL (AISI 304 - DIN 1.4301) 200 UNI ISO 185 CAST IRON* FOR MINIVORTEX AND VORTEX |
| Suction flange, Support feet, Shaft (extension), Motor casing | STAINLESS STEEL (AISI 304 - DIN 1.4301) |
| O-Ring | NITRILE RUBBER |
| Mechanical seal | CARBON/CERAMIC/ NITRILE RUBBER |
| Delivery seal (DL 109, 125 and DLV 100, 115) | 200 UNI ISO 185 CAST IRON* |

4 POLES PUMPS: DL 160, 180, 200 and DLV 120, 140, 150

| PART | MATERIAL |
|--|--|
| Pump body, Impeller, Motor-pump support | 200 UNI ISO 185 CAST IRON* |
| Shaft | STAINLESS STEEL (AISI 420 - DIN 1.4021) |
| Motor casing, Motor cover, Handle tie rod with bracket, Base | STAINLESS STEEL (AISI 304 - DIN 1.4301) |
| Mechanical seal | TUNGSTENE CARBIDE/ TUNGSTENE CARBIDE/ FPM |
| O-Ring | NITRILE RUBBER |

* Cast iron coated with polybutadiene varnish by electrophoresis at 180°C.

DL SERIES (SINGLE-CHANNEL IMPELLER) OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



| PUMP TYPE | RATED POWER | | Q = DELIVERY | | | | | | | | | | | | | |
|-----------|-------------|---------------------------------------|--------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|--|
| | | | l/min | 0 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | |
| | | | m³/h | 0 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 36 | 42 | |
| | | H = TOTAL HEAD METERS COLUMN OF WATER | | | | | | | | | | | | | | |
| DL(M) 80 | 0.6 | 0.8 | 7.6 | 5.9 | 5.3 | 4.7 | 4.1 | 3.6 | 3.0 | | | | | | | |
| DL(M) 90 | 0.6 | 0.8 | 9.7 | 7.8 | 7.0 | 6.4 | 5.8 | 5.3 | 4.7 | 4.1 | 3.5 | | | | | |
| DL 105 | 1.1 | 1.5 | 14.1 | 11.6 | 10.6 | 9.7 | 8.9 | 8.1 | 7.4 | 6.7 | 5.9 | 5.2 | | | | |
| DL(M) 109 | 1.1 | 1.5 | 18.3 | 15.4 | 14.2 | 13.1 | 12.0 | 11.0 | 10.1 | 9.2 | 8.2 | 7.3 | 5.4 | | | |
| DL 125 | 1.5 | 2 | 21.9 | 19.2 | 17.9 | 16.7 | 15.5 | 14.4 | 13.4 | 12.3 | 11.3 | 10.3 | 8.4 | 6.5 | | |

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

dl-2p50_a_th

| PUMP TYPE | INPUT POWER* | INPUT CURRENT* | CAPACITOR |
|--------------|--------------|----------------|-------------------------------|
| SINGLE-PHASE | | 220-240 V | |
| | kW | A | $\mu\text{F} / 450 \text{ V}$ |
| 80 | 0.79 | 3.91 | 25 |
| 90 | 0.89 | 4.27 | 25 |
| - | - | - | - |
| 109 | 1.55 | 6.87 | 35 |
| - | - | - | - |

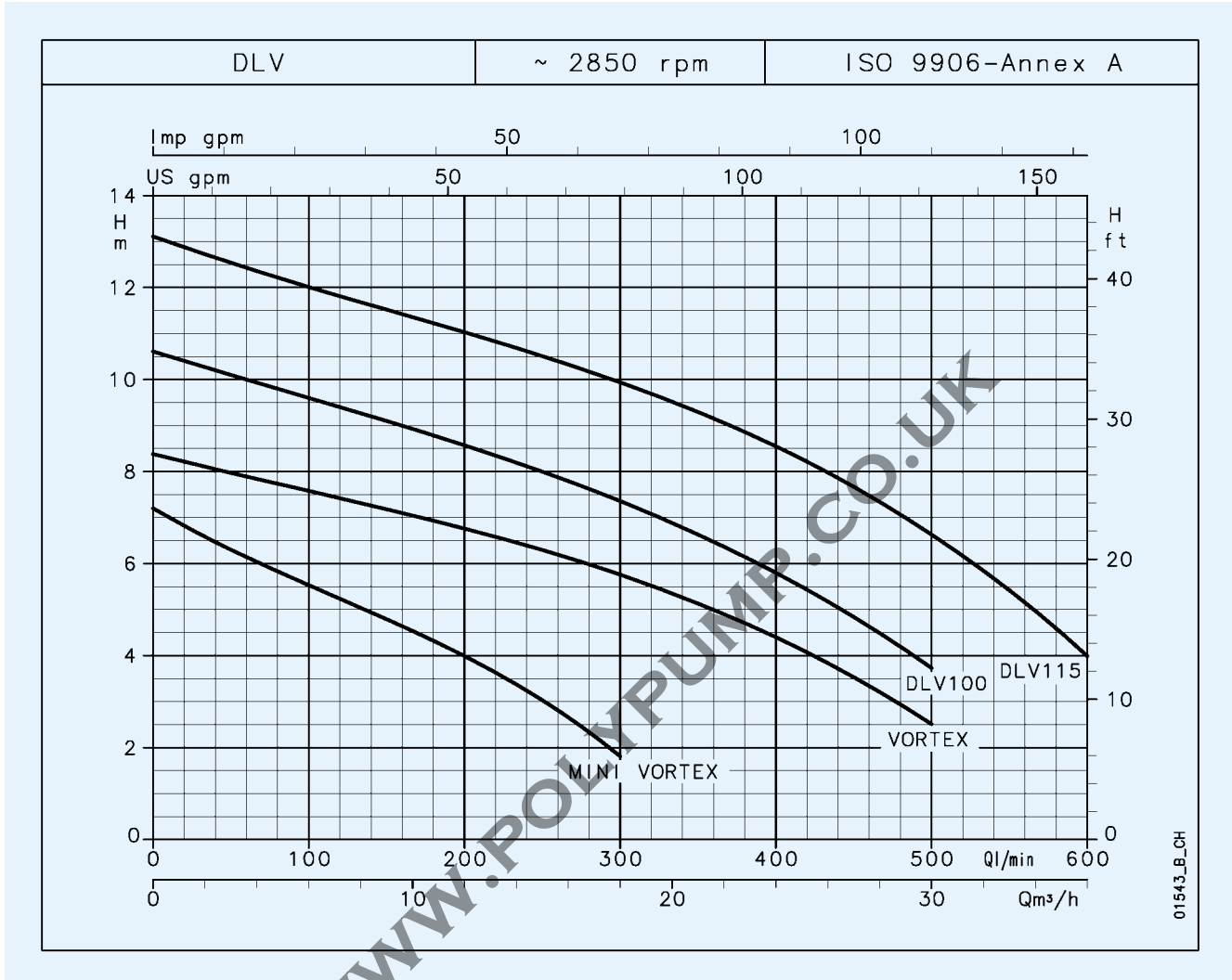
| PUMP TYPE | INPUT POWER* | INPUT CURRENT* | INPUT CURRENT* |
|-------------|--------------|----------------|----------------|
| THREE-PHASE | | 220-240 V | 380-415 V |
| | kW | A | A |
| 80 | 0.8 | - | 2.09 |
| 90 | 0.92 | 3.81 | 2.2 |
| 105 | 1.43 | 4.66 | 2.69 |
| 109 | 1.54 | 5.44 | 3.14 |
| 125 | 2.14 | 6.58 | 3.8 |

* Maximum value in specified range

dl-2p50_a_te

DL

DLV SERIES (VORTEX IMPELLER) OPERATING CHARACTERISTICS AT 2850 rpm 50 Hz



| PUMP TYPE | RATED POWER | | Q = DELIVERY | | | | | | | | | | | | |
|----------------|-------------|-----|---------------------------------------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| | | | l/min | 0 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 |
| | | | m³/h | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 36 |
| | | | H = TOTAL HEAD METERS COLUMN OF WATER | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| MINI VORTEX(M) | 0.6 | 0.8 | 7.2 | 6.3 | 5.5 | 4.8 | 4.0 | 3.0 | 1.8 | | | | | | |
| VORTEX | 1.1 | 1.5 | 8.4 | 8.0 | 7.6 | 7.2 | 6.8 | 6.3 | 5.8 | 5.1 | 4.4 | 3.5 | 2.5 | | |
| DLV(M) 100 | 1.1 | 1.5 | 10.6 | 10.1 | 9.6 | 9.1 | 8.6 | 8.0 | 7.4 | 6.6 | 5.8 | 4.8 | 3.7 | | |
| DLV 115 | 1.5 | 2 | 13.1 | 12.5 | 12.0 | 11.5 | 11.0 | 10.5 | 9.9 | 9.3 | 8.5 | 7.7 | 6.6 | 4.0 | |

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

dlv-2p50_a_th

| PUMP TYPE | INPUT POWER* | INPUT CURRENT* | CAPACITOR |
|---------------|--------------|----------------|-------------------------------|
| SINGLE-PHASE | | 220-240 V | |
| | kw | A | $\mu\text{F} / 450 \text{ V}$ |
| MINI VORTEX M | 1.05 | 4.82 | 25 |
| - | - | - | - |
| DLVM100 | 1.64 | 7.30 | 35 |
| - | - | - | - |

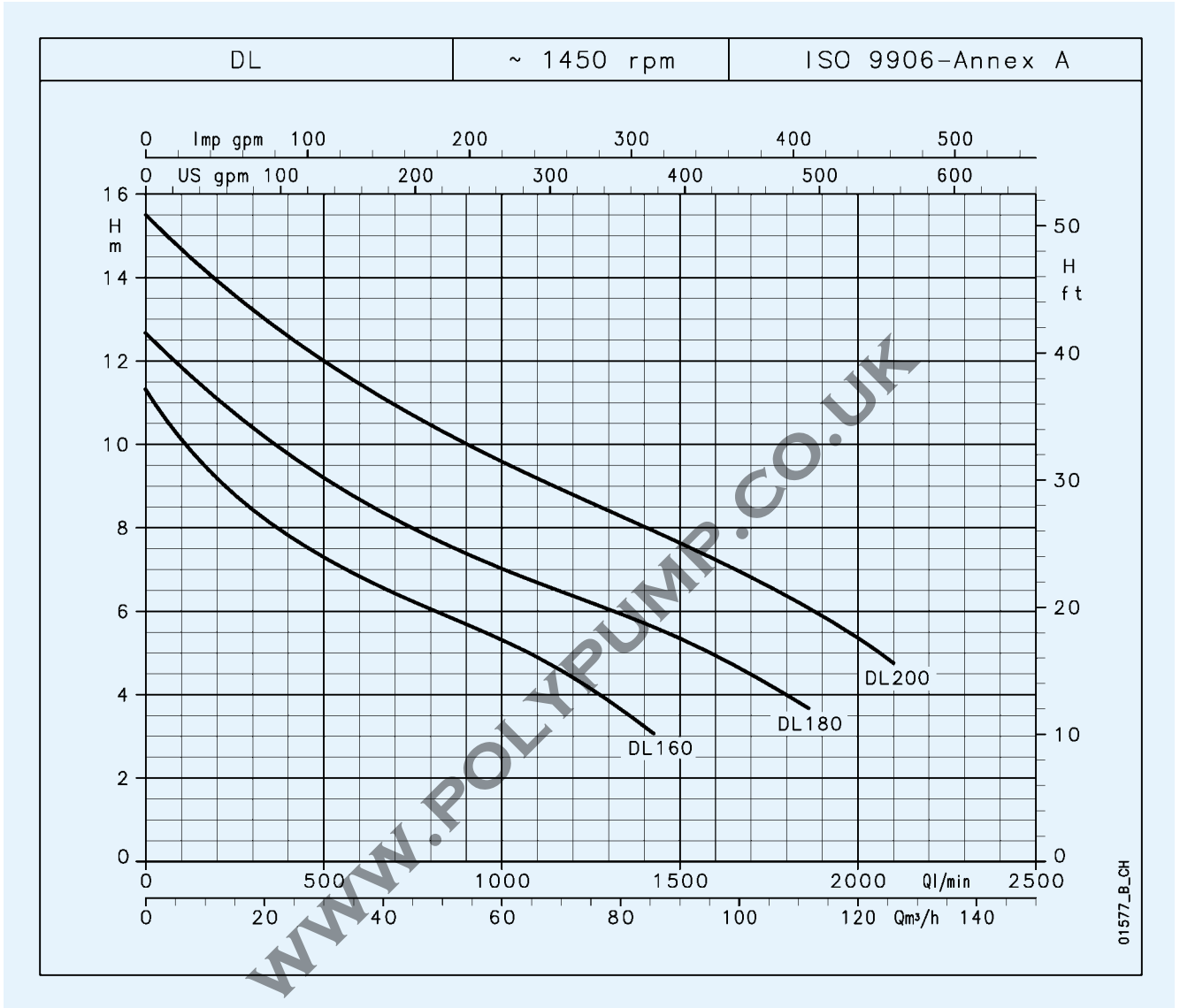
| PUMP TYPE | INPUT POWER* | INPUT CURRENT* | INPUT CURRENT* |
|-------------|--------------|----------------|----------------|
| THREE-PHASE | | 220-240 V | 380-415 V |
| | kw | A | A |
| MINI VORTEX | 1.10 | - | 2.36 |
| VORTEX | 1.66 | 5.11 | 2.95 |
| DLV 100 | 1.65 | 5.63 | 3.25 |
| DLV 115 | 2.25 | 6.81 | 3.93 |

* Maximum value in specified range

dlv-2p50_a_te



**SERIE DL (SINGLE-CHANNEL IMPELLER)
OPERATING CHARACTERISTICS AT 1450 rpm 50 Hz**



| PUMP TYPE | RATED POWER | | Q = DELIVERY | | | | | | | | |
|-----------|-------------|------|---------------------------------------|------|------|-----|------|------|------|------|------|
| | | | l/min | 0 | 500 | 750 | 1000 | 1250 | 1400 | 1750 | 2000 |
| | | | m³/h | 0 | 30 | 45 | 60 | 75 | 84 | 105 | 120 |
| | kW | HP | H = TOTAL HEAD METERS COLUMN OF WATER | | | | | | | | |
| DL 160 | 1.85 | 2.5 | 11.3 | 7.3 | 6.3 | 5.3 | 4.0 | | | | |
| DL 180 | 2.75 | 3.75 | 12.7 | 9.2 | 8.0 | 7.0 | 6.2 | 5.7 | 4.2 | | |
| DL 200 | 4 | 5.5 | 15.5 | 12.0 | 10.7 | 9.6 | 8.6 | 8.0 | 6.2 | 5.3 | |

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

dl4-4p50_a_th

| PUMP TYPE | INPUT POWER* | INPUT CURRENT* | CAPACITOR |
|--------------|--------------|----------------|-------------------------------|
| SINGLE-PHASE | | 220-240 V | |
| | kW | A | $\mu\text{F} / 450 \text{ V}$ |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

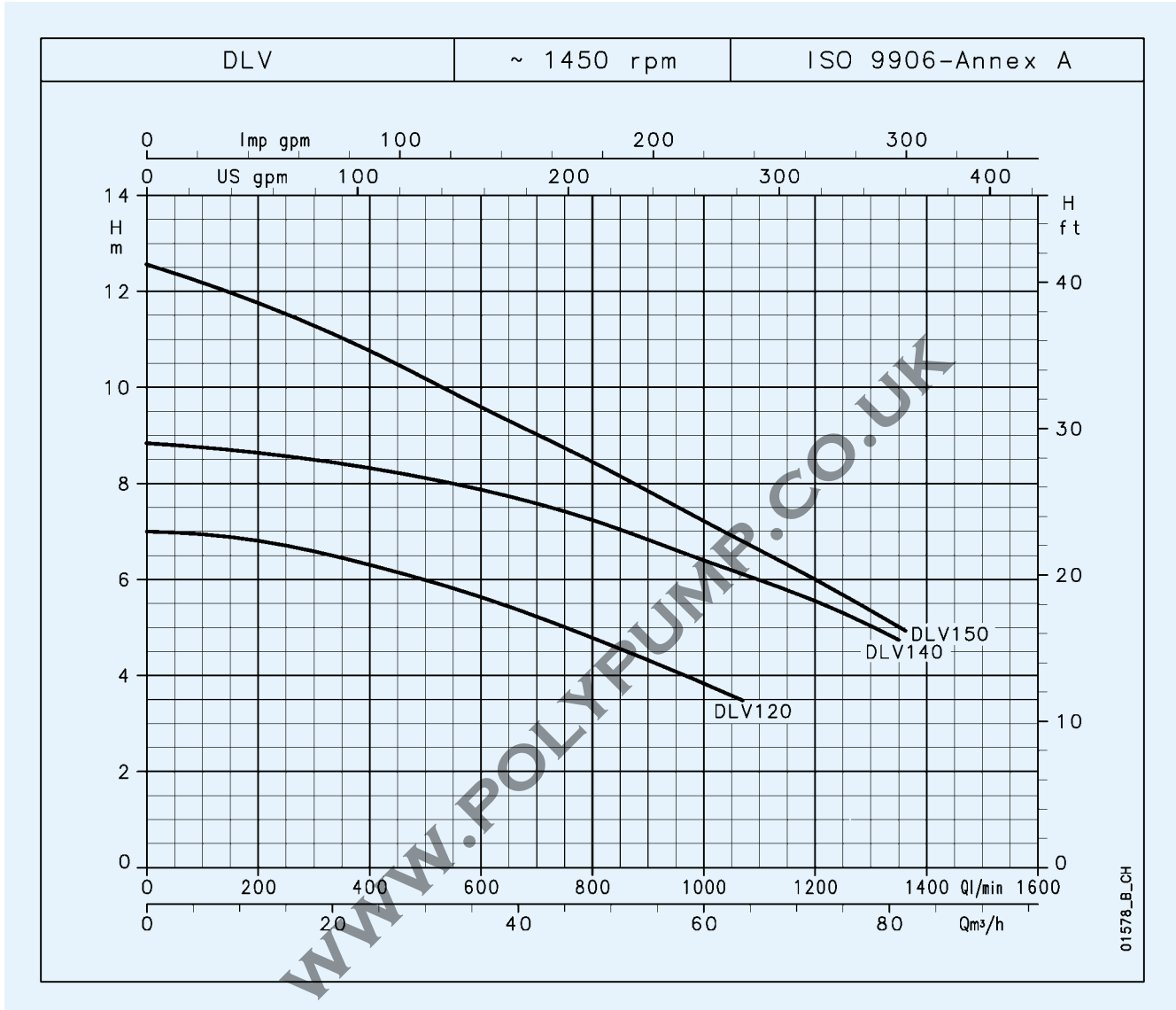
| PUMP TYPE | INPUT POWER* | INPUT CURRENT* | INPUT CURRENT* |
|-------------|--------------|----------------|----------------|
| THREE-PHASE | | 220-240 V | 380-415 V |
| | kW | A | A |
| DL160 | 2.1 | 6 | 3.5 |
| DL180 | 3.2 | 10 | 5.8 |
| DL200 | 4.7 | 15 | 8.7 |

* Maximum value in specified range

dl4-4p50_a_te

DL

DLV SERIES (VORTEX IMPELLER) OPERATING CHARACTERISTICS AT 1450 rpm 50 Hz



| PUMP TYPE | RATED POWER | | Q = DELIVERY | | | | | | | |
|-----------|-------------|------|---------------------------------------|------|------|------|------|------|------|------|
| | | | l/min | 500 | 750 | 1000 | 1250 | 1400 | 1750 | 2000 |
| | | | m ³ /h | 30 | 45 | 60 | 75 | 84 | 105 | 120 |
| | kW | HP | H = TOTAL HEAD METERS COLUMN OF WATER | | | | | | | |
| DLV 120 | 1.85 | 2.5 | 7.0 | 6.7 | 6.0 | 5.0 | 3.8 | | | |
| DLV 140 | 2.75 | 3.75 | 8.8 | 8.6 | 8.1 | 7.4 | 6.4 | 6.0 | 5.3 | 4.7 |
| DLV 150 | 4 | 5.5 | 12.5 | 11.5 | 10.2 | 8.7 | 7.2 | 6.6 | 5.7 | 5.0 |

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

dlv-4p50_a_th

| PUMP TYPE | INPUT POWER* | INPUT CURRENT* | CAPACITOR |
|--------------|--------------|----------------|-------------------------------|
| SINGLE-PHASE | | 220-240 V | |
| | kW | A | $\mu\text{F} / 450 \text{ V}$ |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

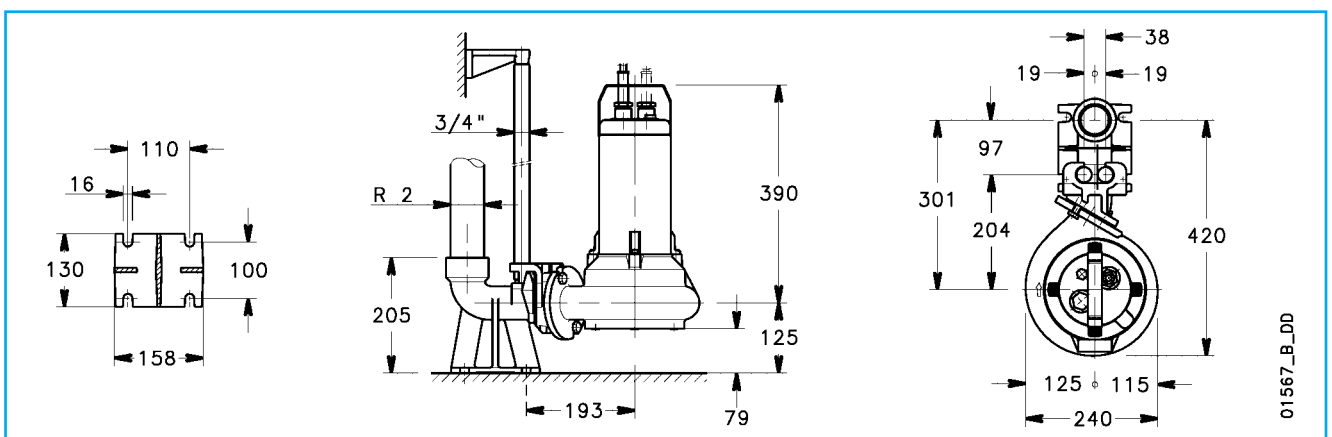
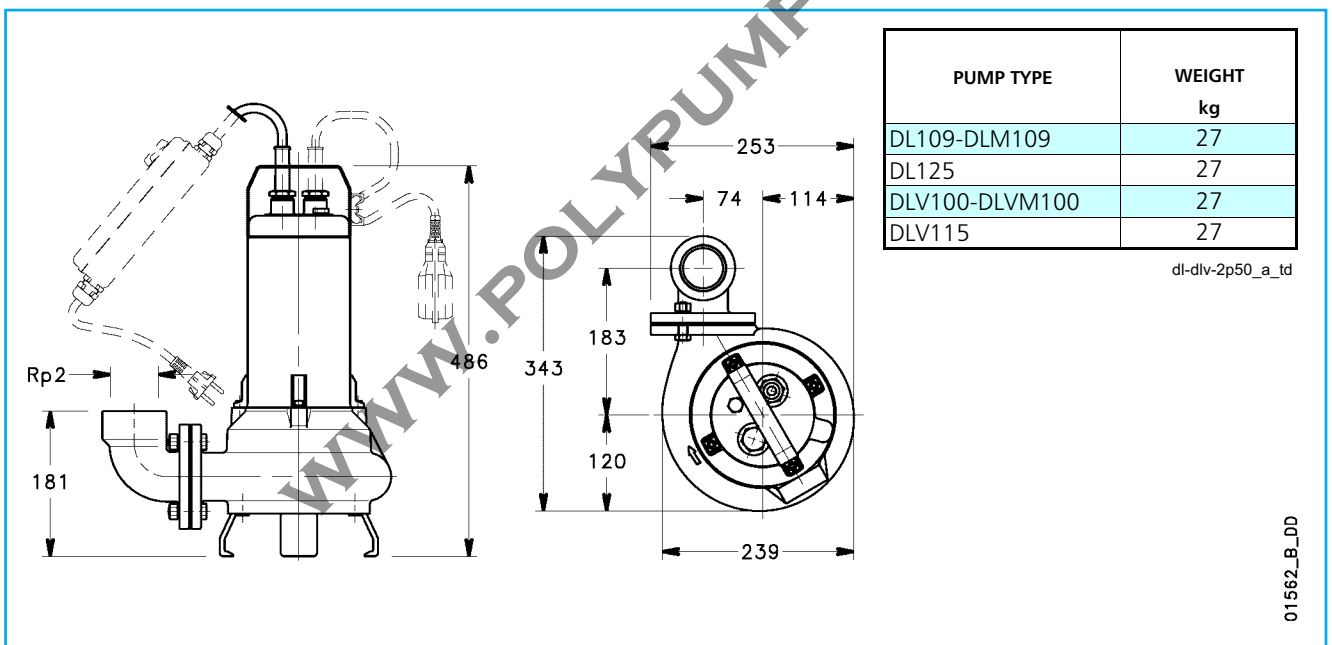
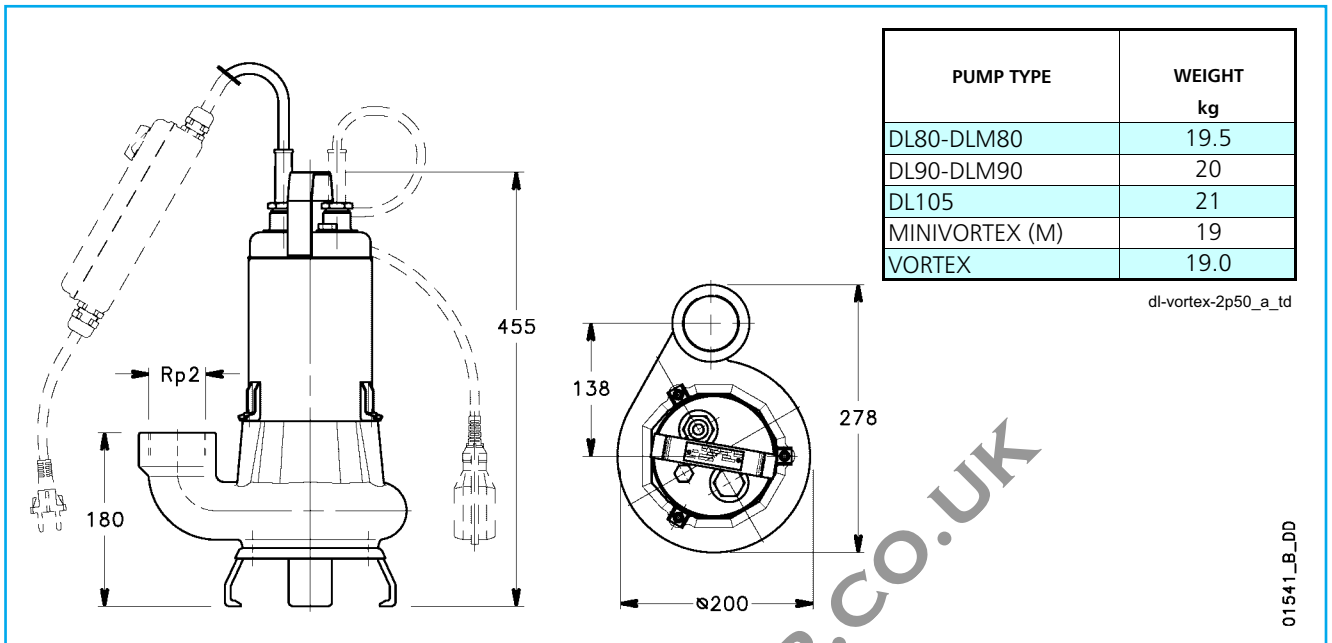
| PUMP TYPE | INPUT POWER* | INPUT CURRENT* | INPUT CURRENT* |
|-------------|--------------|----------------|----------------|
| THREE-PHASE | | 220-240 V | 380-415 V |
| | kW | A | A |
| DLV120 | 2.3 | 7.8 | 4.5 |
| DLV140 | 3.4 | 11.2 | 6.5 |
| DLV150 | 4.9 | 16.5 | 9.5 |

* Maximum value in specified range

dlv-4p50_a_te

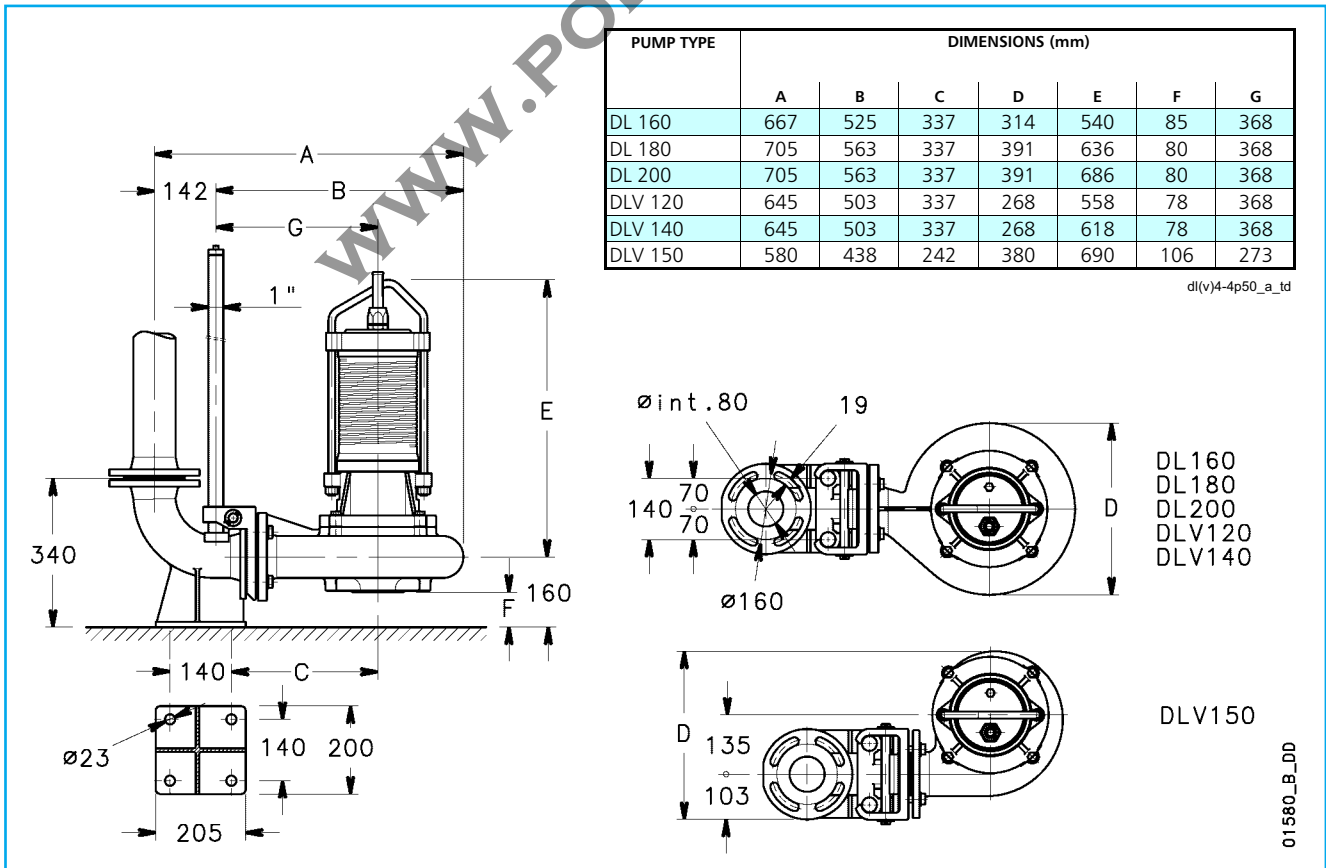
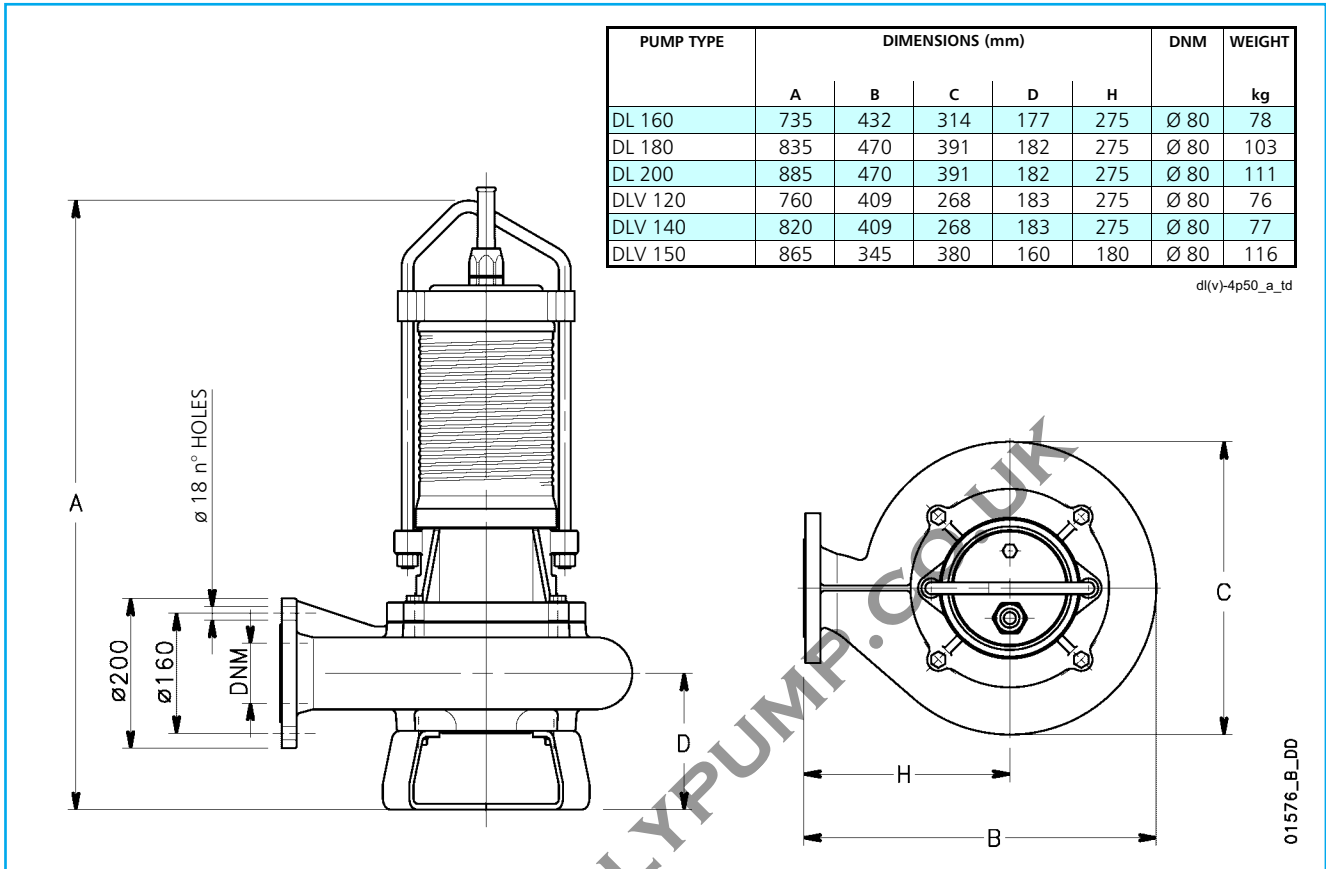


2 POLES DL(V) SERIES DIMENSIONS AND WEIGHTS



DL

4 POLES DL(V) SERIES DIMENSIONS AND WEIGHTS



DL