**Etaline 050-050-160 GG**
ETL 050-050-160-GGSCV11 WS2AP4KFB

**Operating point 1 Dimensioning operating point**

**Operating conditions (purchaser requirements)**

| | | | |
|---|---|---|---|
| Fluid | Water | Vapour pressure determined | 0.02337 bar.a |
| Fluid variant | Clean water | | |
| Specified fluid temperature | 20 °C | Specified ambient temperature | 20 °C |
| Density Fluid handled | 998 kg/m³ | Installation altitude above sea level | 1,000 m |
| Kinematic viscosity Fluid handled | 1 mm²/s | Explosion protection Unit | Yes |
| | | Explosion protection directive Unit | ATEX |
| | | Equipment group Unit | II |
| | | Equipment category Unit | 3 |
| | | Flammable materials Unit | Gas |
| | | Explosion group Unit | B |
| | | Temperature classes Unit | T3 |

**Operating conditions (performance)**

| | | | |
|---|---|---|---|
| Flow rate | 21.46 m³/h | Maximum power input at duty point | 0.3689 kW |
| Minimum permissible flow rate | 3.257 m³/h | Maximum power input / curve | 0.3809 kW |
| Head | 3.395 m | Pump speed | 1,460 1/min |
| Shut-off head | 4.98 m | Discharge pressure-max. | 0.4874 bar |
| Efficiency Pump | 53.71 % | | |
| NPSH required | 1.15 m | | |

**Etaline 050-050-160 GG**
ETL 050-050-160-GGSCV11 WS2AP4KFB

## Design data pump

| | | | |
|---|---|---|---|
| Scope of supply Pump supplied by KSB | Pump | Mains voltage | 400 V |
| | | Mains frequency | 50 Hz |
| Pump standard | EN 733 | Minimum efficiency index MEI | 0.7 |
| Shaft axis position | Vertical | Minimum permissible fluid temperature | 0 °C |
| Pump design | Close-coupled | | |
| Pump system design | Single-pump system | Maximum permissible fluid temperature | 60 °C |
| Specification of wetted parts | Manufactured without paint wetting impairment substances | Quantity Stages, single-entry | 1 |
| Pump direction of rotation, viewed from casing side | Counterclockwise | Casing wear ring design suction-side | Flat |
| Hydraulic impeller diameter | 120 mm | Casing wear ring design discharge-side | Flat |
| Impeller type | Radial, closed, multi-channel | | |
| Free passage | 11.5 mm | Installation chamber Casing cover | Conical (A-type cover) |
| Nut lock for Impeller | No | | |
| Swirl break | No | Bearing bracket size / shaft unit | 25 |
| Support foot | No | Pump directive | CE |
| | | Explosion protection description Pump/Valve | II 2G Ex h IIC T4 Gb |
| | | Maximum allowable motor interface temperature at flange | 75 °C |
| | | Maximum available motor interface temperature at flange | 20 °C |
| | | Maximum allowable motor interface temperature at shaft | 75 °C |
| | | Maximum available motor interface temperature at shaft | 20 °C |

## Nozzle connections pump

| | | | |
|---|---|---|---|
| Nominal diameter Suction nozzle | DN 50 | Nominal diameter Discharge nozzle | DN 50 |
| Nominal pressure Suction nozzle | PN 16 | Nominal pressure Discharge nozzle | PN 16 |
| Suction nozzle position | Opposite of discharge nozzle | Discharge nozzle position | 0 deg |
| Suction nozzle design acc.to | EN1092-2 | Discharge nozzle design acc.to | EN1092-2 |
| Suction flange bolt hole pattern as per standard | EN1092-2 | Discharge flange bolt hole pattern as per standard | EN1092-2 |
| Flange facing type Inlet | Raised face (B,RF,C) | | |
| Flange facing type Outlet | Raised face (B,RF,C) | | |

**Etaline 050-050-160 GG**
ETL 050-050-160-GGSCV11 WS2AP4KFB

## Auxiliary connections pump

| | | | |
|---|---|---|---|
| 6B Fluid Drain | G 1/4<br>Drilled and plugged | 1M Pressure gauge<br>Discharge nozzle | Without<br>Without |
| 6D Fluid Filling and venting | G 1/4<br>Drilled and plugged | 1M Pressure gauge Suction nozzle | Without<br>Without |
| Connection type 24E Quench liquid inlet | Without<br>Without | | |
| Connection type 5B Venting and drain | G 1/4<br>Manual globe valve, fitted | | |

## Shaft sealing

| | | | |
|---|---|---|---|
| Shaft seal type | SMS A-type cover, vented | Shaft seal code | Code 11 |
| Determined pressure Seal chamber | -0.27 bar | Shaft seal manufacturer inboard | KSB's choice |
| | | Mechanical seal type inboard | 1 |
| | | Material Shaft seal inboard | BQ1EGG-WA |

## Materials

| | | | |
|---|---|---|---|
| Material Volute casing (102) | EN-GJL-250/A48 CL 35B | Material Bolts/Screws Hydraulic casing (902.01) | 8.8 |
| Material Casing cover (161) | EN-GJL-250/A48 CL 35B | Material Screw plug Hydraulic casing (903.01) | ST |
| Material Shaft | C45+N | Material Static seal Screw plug Volute casing | A4/AISI 316 |
| Material Impeller (230) | EN-GJL-250/A48 CL 35B | Material Nut Impeller fastening (920.95) | (ST) |
| Material Static seal Hydraulic casing (400.10) | DPAF DW001 | Material Key | C45+C/A311 GR 1045 CLASS A |
| Material Casing wear ring suction-side | JL/LAMELLAR GRAPHITE CAST IRON | | |
| Material Casing wear ring discharge-side (502.02) | JL/LAMELLAR GRAPHITE CAST IRON | | |
| Material Shaft protecting sleeve (523) | (CRNIMO ST INT) | | |
| Material Bearing bracket | WITHOUT | | |
| Material Static seal Discharge cover | DPAF DW001 | | |
| Material Drive lantern | EN-GJL-250/A48 CL 35B | | |
| Material Support foot | WITHOUT | | |

**Etaline 050-050-160 GG**
ETL 050-050-160-GGSCV11 WS2AP4KFB

## Driver

| | | | |
|---|---|---|---|
| Electric motor | Yes | Rated speed Motor | 1,440 1/min |
| Drive concept | With electric actuator | Number of motor poles | 4 |
| Drive standard, mechanical | IEC | Rated power Motor | 0.55 kW |
| Drive standard electric | IEC | Motor power reserve determined | 49.1 % |
| Motor bearing, insulated | No | Rated voltage Motor | 400 V |
| Motor manufacturer | Siemens | Motor winding | 230 / 400 V |
| Customer supply Drive | No | Rated frequency Motor | 50Hz |
| Motor construction type | IM V1 (IM3011) IEC 60034-7 | Motor switching type | Star |
| Motor size | 80M | Rated current Motor | 1.26 A |
| Efficiency class | IE3 (Premium) | Starting current ratio Ia/In | 5.9 |
| Material motor housing | AL | Motor cos phi at nominal speed | 0.78 |
| Enclosure Motor | IP55 (TEFC) | Rated efficiency Motor | 96 % |
| Thermal class | 155 (F) nach IEC 60085 | Explosion protection directive Drive | ATEX |
| Temperature sensor motor | 3 PTC thermistors | Explosion protection description Drive | II 3G Ex ec IIC T3 |
| Terminal box position of motor (looking at the motor shaft) | 360 Grad | Temperature class Drive | T3 |
| Operation on a frequency inverter permitted | No | Maximum allowable motor interface temperature at flange | 75 °C |
| Sound pressure level Motor | 67 dBa | Maximum available motor interface temperature at flange | 20 °C |
| Type series Motor manufacturer | 1MB1 | Maximum allowable motor interface temperature at shaft | 75 °C |
| | | Maximum available motor interface temperature at shaft | 20 °C |
| | | Directive Drive | VIK |

## Coating

## Aggregate

| | |
|---|---|
| Surface preparation | Free from dirt, grease, rust |
| Properties Primer coat | Hydro dip primer, water-dilutable |
| Thickness Primer coat | 60 µm |
| Properties Top coat | Polyco/acrylate polym w-based |
| Thickness Top coat | 50 µm |
| Colour Top coat | RAL2002 Pastel Orange |

**Etaline 050-050-160 GG**
ETL 050-050-160-GGSCV11 WS2AP4KFB

### Packaging

| | |
|---|---|
| Suitable for transport | Truck transport |
| Suitable for storage | Indoor storage |
| Packaging category | KSB's choice (A0) |

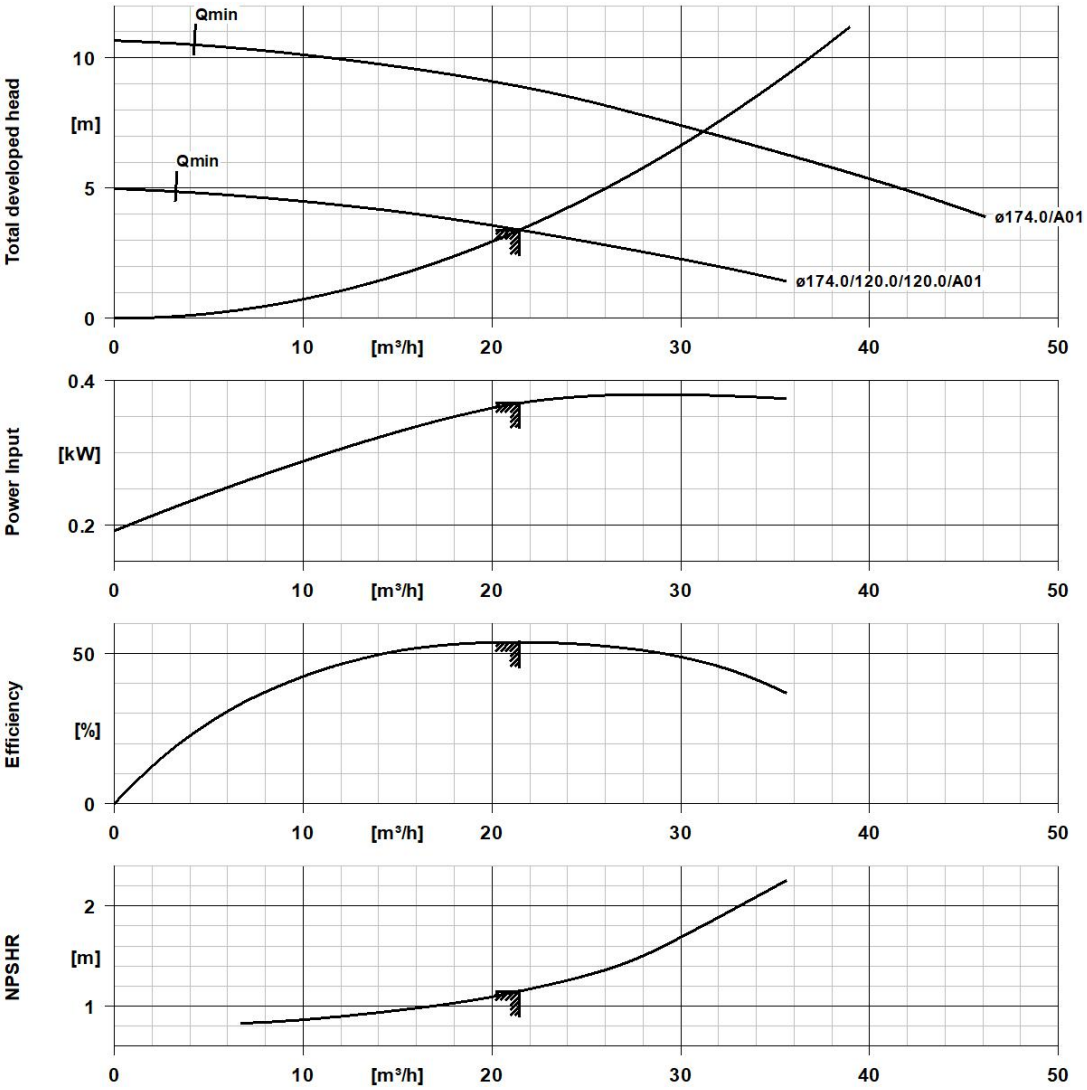
### Nameplates

| | |
|---|---|
| Duplicate name plate | No |

# Performance Curve (Pump)



**Etaline 050-050-160 GG**
ETL 050-050-160-GGSCV11 WS2AP4KFB



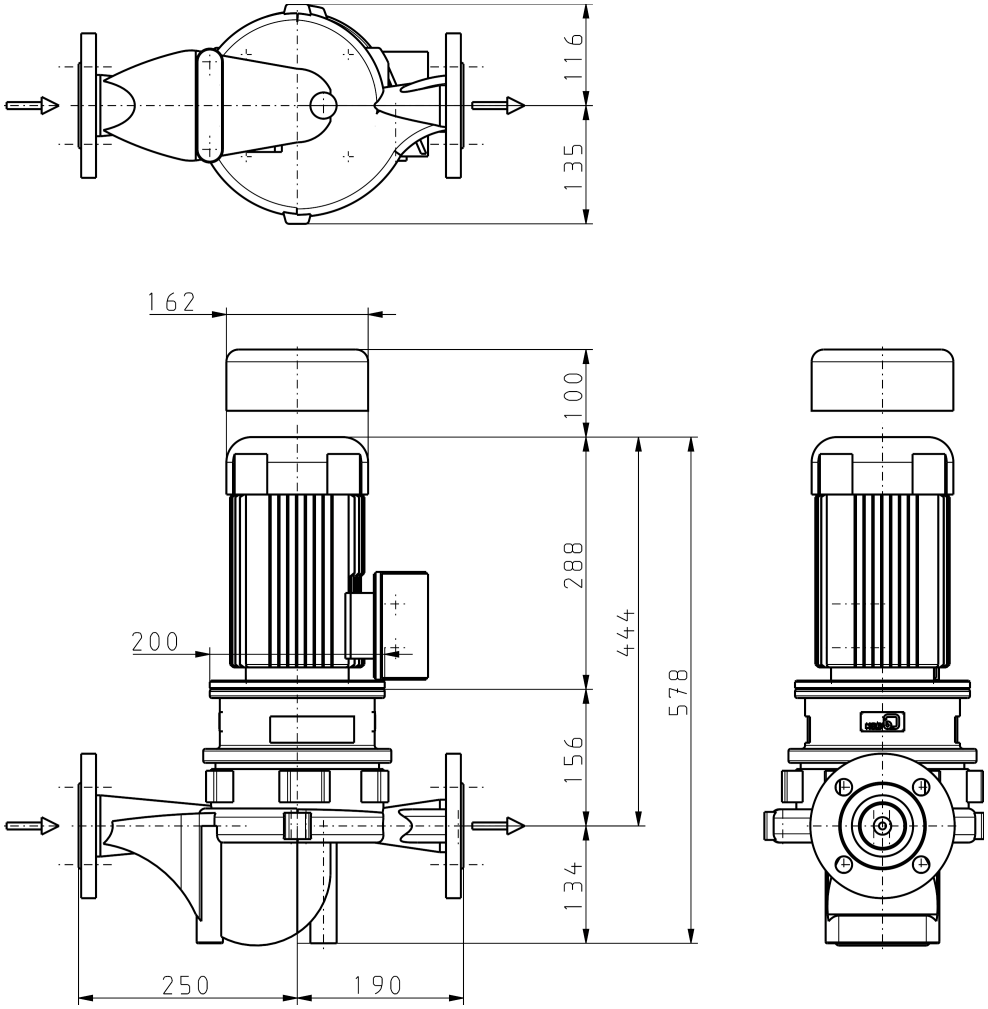

## Curve Data

| | | | |
|---|---|---|---|
| Pump speed | 1,460 1/min | Efficiency Pump | 53.7 % |
| Density Fluid handled | 998 kg/m³ | Minimum efficiency index MEI | 0.7 |
| Kinematic viscosity Fluid handled | 1 mm²/s | Maximum power input at duty point | 0.37 kW |
| | | NPSH required | 1.15 m |
| Flow rate | 21.5 m³/h | Hydraulic impeller diameter | 120 mm |
| Head | 3.39 m | Hydraulic calculation according to standard/ class | EN ISO 9906 class 3B |

# Installation plan



**Etaline 050-050-160 GG**
ETL 050-050-160-GGSCV11 WS2AP4KFB




Drawing is not to scale.

Dimensions are given in mm

## Motor

| | |
|---|---|
| Motor manufacturer | Siemens |
| Motor size | 80M |
| Rated power Motor | 0.55 kW |
| Number of motor poles | 4 |
| Rated speed Motor | 1,440 1/min |
| Terminal box position of motor (looking at the motor shaft) | 360 Grad |

## Connections

| | |
|---|---|
| Nominal diameter Suction nozzle | DN 50 |
| Suction flange bolt hole pattern as per standard | EN1092-2 |
| Nominal diameter Discharge nozzle | DN 50 |
| Discharge flange bolt hole pattern as per standard | EN1092-2 |
| Nominal pressure Suction nozzle | PN 16 |
| Nominal pressure Discharge nozzle | PN 16 |

## Net weight

| | |
|---|---|
| Total weight Pump | 30.4 kg |
| Total weight Drive | 11 kg |
| Total weight Pump set | 41.4 kg |

**Etaline 050-050-160 GG**
ETL 050-050-160-GGSCV11 WS2AP4KFB

**Connect pipelines stress-free**

**Plan for additional connections see extra drawing**

Dimensional tolerances for shaft axis height: DIN 747
Dimensions without tolerances, middle tolerances to: ISO 2768-m
Connection dimensions for pumps: EN735
Dimensions without tolerances - welded parts: ISO 13920-B
Dimensions without tolerances - gray cast iron parts: ISO 8062-CT9