

**Etanorm 080-065-160 GG**  
 ETN 080-065-160-GGSAA11 GSEEH2AHB

**Operating point 1 Dimensioning operating point**

**Operating conditions (purchaser requirements)**

|                                   |                       |                                       |              |
|-----------------------------------|-----------------------|---------------------------------------|--------------|
| Target flow rate                  | 143 m <sup>3</sup> /h | Vapour pressure determined            | 0.0234 bar.a |
| Target head                       | 30 m                  | Minimum inlet pressure required       | -0.26 bar.r  |
| Fluid                             | Water                 | Specified ambient temperature         | 20 °C        |
| Fluid variant                     | Clean water           | Installation altitude above sea level | 1,000 m      |
| Specified fluid temperature       | 20 °C                 |                                       |              |
| Density Fluid handled             | 998 kg/m <sup>3</sup> |                                       |              |
| Kinematic viscosity Fluid handled | 1 mm <sup>2</sup> /s  |                                       |              |

**Operating conditions (performance)**

|                               |                          |                                   |             |
|-------------------------------|--------------------------|-----------------------------------|-------------|
| Flow rate                     | 143.06 m <sup>3</sup> /h | Maximum power input at duty point | 14.25 kW    |
| Minimum permissible flow rate | 18.42 m <sup>3</sup> /h  | Maximum power input / curve       | 14.62 kW    |
| Head                          | 30.02 m                  | Pump speed                        | 2,948 1/min |
|                               |                          | Discharge pressure-max.           | 3.93 bar.r  |
| Shut-off head                 | 40.16 m                  |                                   |             |
| Efficiency Pump               | 81.9 %                   |                                   |             |
| NPSH required                 | 6.82 m                   |                                   |             |

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**Design data pump**

|   |  |  |                        |
|---|--|--|------------------------|
| Scope of supply Pump supplied by KSB                | Bare-shaft pump  | Mains voltage                          | 400 V                  |
| Pump standard                                       | EN 733   | Mains frequency                        | 50 Hz                  |
| Shaft axis position                                 | Horizontal   | Minimum efficiency index MEI           | 0.7                    |
| Pump design   | Long-coupled (basepl-mounted)                            | Minimum permissible fluid temperature  | 0 °C                   |
| 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                   |
| Impeller diameter D2                                | 174 mm   | Casing wear ring design discharge-side | Flat                   |
| Impeller type                                       | Radial, closed, multi-channel                            | Installation chamber Casing cover      | Conical (A-type cover) |
| Free passage  | 12.2 mm  | Bearing bracket size / shaft unit      | 25                     |
| Nut lock for Impeller                               | No   | Bearing bracket type                   | Bearing bracket        |
| Swirl break   | No   | Bearing bracket design                 | Medium                 |
|   |  | Pump bearing type, non-drive end       | Anti-friction bearing  |
|   |  | Pump bearing type, drive end           | Anti-friction bearing  |
|   |  | Lubrication type                       | Grease lubrication     |
|   |  | Bearing seal Pump                      | V-ring                 |
|   |  | Pump directive                         | CE                     |

**Nozzle connections pump**

|  |                    |  |          |
|--|--------------------|--|----------|
| Nominal diameter Suction nozzle                  | DN 80              | Nominal diameter Discharge nozzle                  | DN 65    |
| Nominal pressure Suction nozzle                  | PN 16              | Nominal pressure Discharge nozzle                  | PN 16    |
| Suction nozzle position                          | Axial              | 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) |  |          |
| Flange facing type Outlet                        | Raised face (B,RF) |  |          |

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**Auxiliary connections pump**

|                              |                              |                                       |                    |
|------------------------------|------------------------------|---------------------------------------|--------------------|
| 6B Fluid Drain               | G 3/8<br>Drilled and plugged | 1M Pressure gauge<br>Discharge nozzle | Without<br>Without |
| 6D Fluid Filling and venting | G 3/8<br>Drilled and plugged | 1M Pressure gauge Suction<br>nozzle   | Without<br>Without |
| 8B Leakage Drain             | G 1/2<br>Drilled             |                                       |                    |

**Shaft sealing**

|  |                  |                                 |              |
|--|------------------|---------------------------------|--------------|
| Shaft seal type                              | SMS A-type cover | Shaft seal code                 | Code 11      |
| Operating mode of mechanical seal (function) | API plan 03      | Shaft seal manufacturer inboard | KSB's choice |
| Determined pressure Seal chamber             | -0.03 bar.r      | Mechanical seal type inboard    | 1            |
|  |                  | Material Shaft seal inboard     | BQ1EGG-WA    |

**Materials**

|  |                                |   |                            |
|--|--------------------------------|---|----------------------------|
| Material Volute casing                   | EN-GJL-250/A48 CL 35B          | Material Bolts/Screws                         | 8.8                        |
| Material Casing cover                    | EN-GJL-250/A48 CL 35B          | Hydraulic casing                              |                            |
| Material Shaft                           | C45+N                          | Material Screw plug Hydraulic casing          | ST                         |
| Material Impeller                        | EN-GJL-250/A48 CL 35B          | Material Static seal Screw plug Volute casing | A4/AISI 316                |
| Material Casing wear ring suction-side   | JL/LAMELLAR GRAPHITE CAST IRON | Material Nut Impeller fastening (ST)          |                            |
| Material Casing wear ring discharge-side | JL/LAMELLAR GRAPHITE CAST IRON | Material Key                                  | C45+C/A311 GR 1045 CLASS A |
| Material Shaft protecting sleeve         | (CRNIMO ST INT)                |   |                            |
| Material Bearing bracket                 | EN-GJL-250/A48 CL 35B          |   |                            |
| Material Static seal Discharge cover     | DPAF DW001                     |   |                            |

**Driver**

|                            |                            |                       |             |
|----------------------------|----------------------------|-----------------------|-------------|
| Electric motor             | No                         | Rated speed Motor     | 2,945 1/min |
| Drive concept              | With electric actuator     | Number of motor poles | 2           |
| Drive standard, mechanical | IEC                        | Rated power Motor     | 15 kW       |
| Drive standard electric    | IEC                        |                       |             |
| Motor construction type    | IM B3 (IM1001) IEC 60034-7 |                       |             |
| Motor size                 | 160M                       |                       |             |



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**Coating**

**Aggregate**

Surface preparation  
Properties Primer coat  
Thickness Primer coat  
Properties Top coat  
Thickness Top coat  
Colour Top coat

Free from dirt, grease, rust  
Hydro dip primer, water-dilutable  
60 µm  
Acrylate dispersion water-thin  
40 µm  
RAL5002 Ultramarine Blue

**Packaging**

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

**Nameplates**

**Product properties**

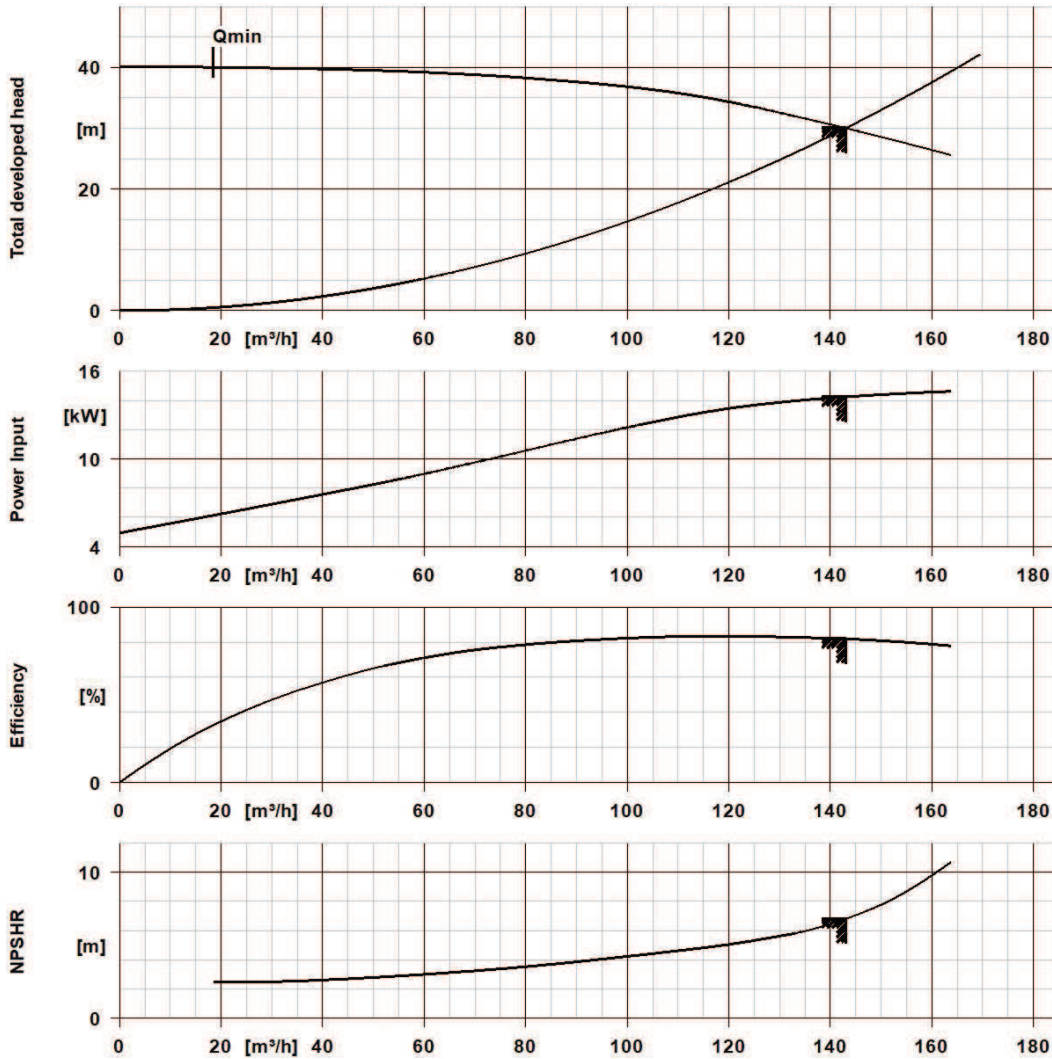
Specification of wetted parts  
Standard Test of specification of wetted parts  
Certificate Check of specification of wetted parts

Manufactured without paint wetting impairment substances  
KSB documentation  
Without

# Performance Curve (Pump)



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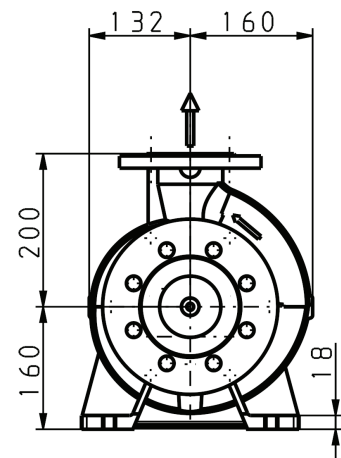
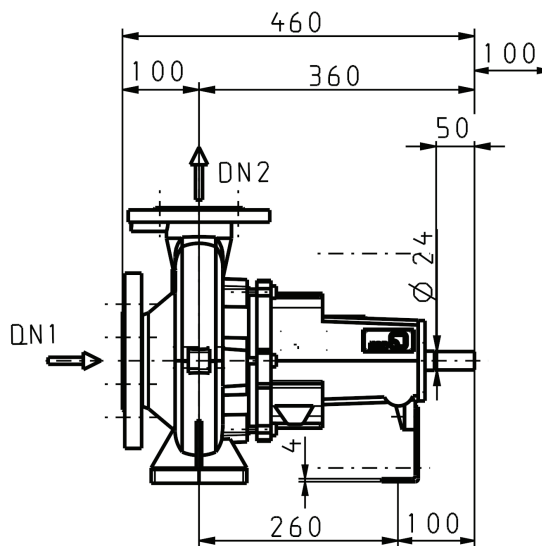
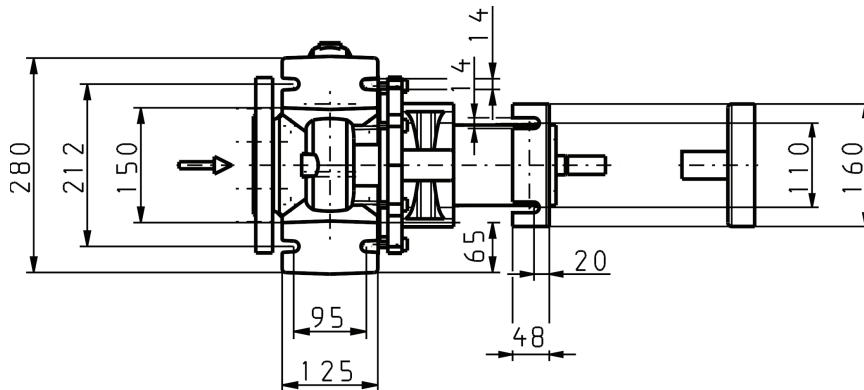


### Curve Data

|                                   |                          |   |                      |
|-----------------------------------|--------------------------|---|----------------------|
| Pump speed                        | 2,948 1/min              | Efficiency Pump                                   | 81.9 %               |
| Density Fluid handled             | 998 kg/m <sup>3</sup>    | Minimum efficiency index MEI                      | 0.7                  |
| Kinematic viscosity Fluid handled | 1 mm <sup>2</sup> /s     | Maximum power input at duty point                 | 14.25 kW             |
| Flow rate                         | 143.06 m <sup>3</sup> /h | NPSH required                                     | 6.82 m               |
| Head                              | 30.02 m                  | Hydraulic impeller diameter                       | 173.5 mm             |
|                                   |                          | Hydraulic calculation according to standard/class | EN ISO 9906 Class 3B |

According to EN ISO 9906, §4.4.2 (pump input power below 10 kW)

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Drawing is not to scale.

Dimensions are given in mm

**Motor**

Rated power Motor 15 kW  
 Rated speed Motor 2,945 1/min

**Connections**

Nominal diameter Suction nozzle DN 80  
 Suction flange bolt hole pattern as per standard EN1092-2  
 Nominal diameter Discharge nozzle DN 65  
 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 46.9 kg



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**Connect pipelines stress-free**

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

**Plan for additional connections see extra drawing**