

PedeleX™

300W and 3 kg gearless E-Bike Motor

1. General

The PedeleX™ Motor is a gearless synchronous motor based on the patented wheel-motor technology – Magnaforce.

The Magnaforce technology:

uses advanced materials, allowing fabrication of low-weight gearless wheel motors.



The Motor Weight:

of the 300 Watt motor is only 3 kg, which is 1.5-2 kg lighter than an equivalent E-bike gearless motor. The low-weight of the motor allows reduction of the E-bike weight by 1.5 kg. This reduction in weight can then be used to increase the battery size, thereby extending the riding distance, for a given overall bike weight.

PedeleX™ - 1 provides 100W/kg - the HIGHEST TORQUE DENSITY on the market

The Motor Efficiency:

is high. The typical motor-support range for the Pedelec is 50% – 200% of 8 Nm, or 4 – 16 Nm. In this support range, the average motor efficiency is equal to 87%. This is higher than the market-value for gearless-drives and is significantly higher than that for geared motors.

The Motor Geometry:

The width of the motor is only 34 mm, leaving sufficient space in the bike for additional components (brake, cables, etc.). The outside diameter is only 214 mm.

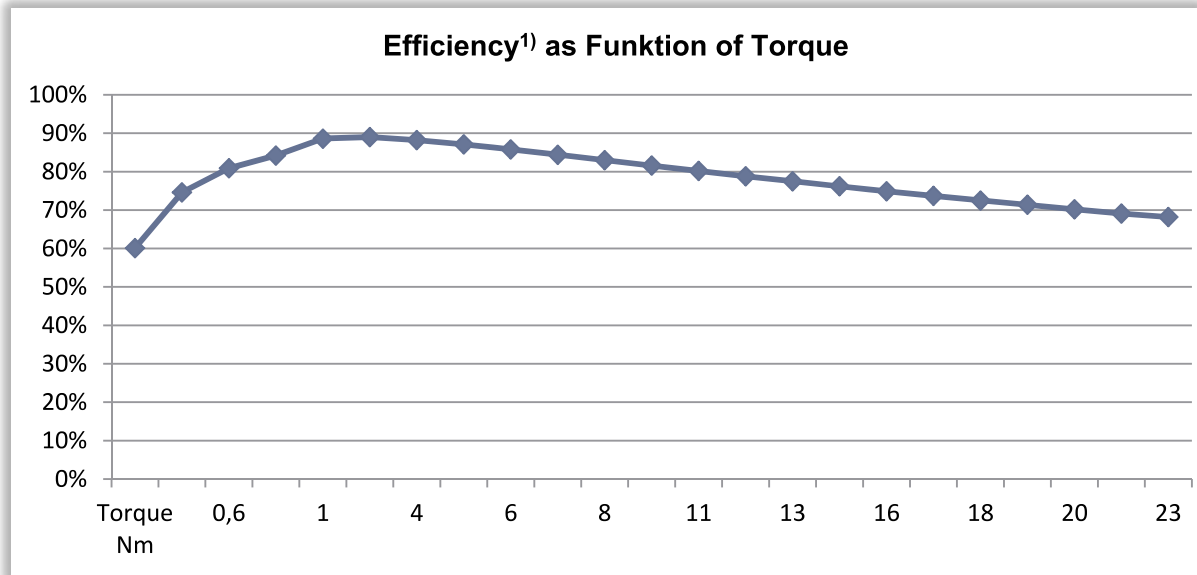
The high-efficiency, low-weight, and the possibility of recovering breaking energy allows for long rides with a medium sized battery.

2. PedeleX™ - 1 Technically Data

Nominal Power ¹ :	300 W
Maximal Torque:	40 Nm
Nominal Torque:	12 Nm
Weight ² :	2.8 kg
Overall Outside Diameter:	200 mm
Overall Motor Body Length:	50 mm
Protection Class:	IP 65
Temperature Range:	-15°C ... 40°C

- 1) The nominal power is defined at 80% motor-efficiency.
- 2) The motor weight doesn't include the wheel shaft ~ 0.12 kg

3. PedeleX™ - 1 Efficiency Curve



- 1) The motor efficiency, with motor-coil temperature of 80°C.

The average motor efficiency with torque in the 1 – 16 Nm range is 87%.

4. **Pedelex™ - 1 Dimensions** all dimensions in mm

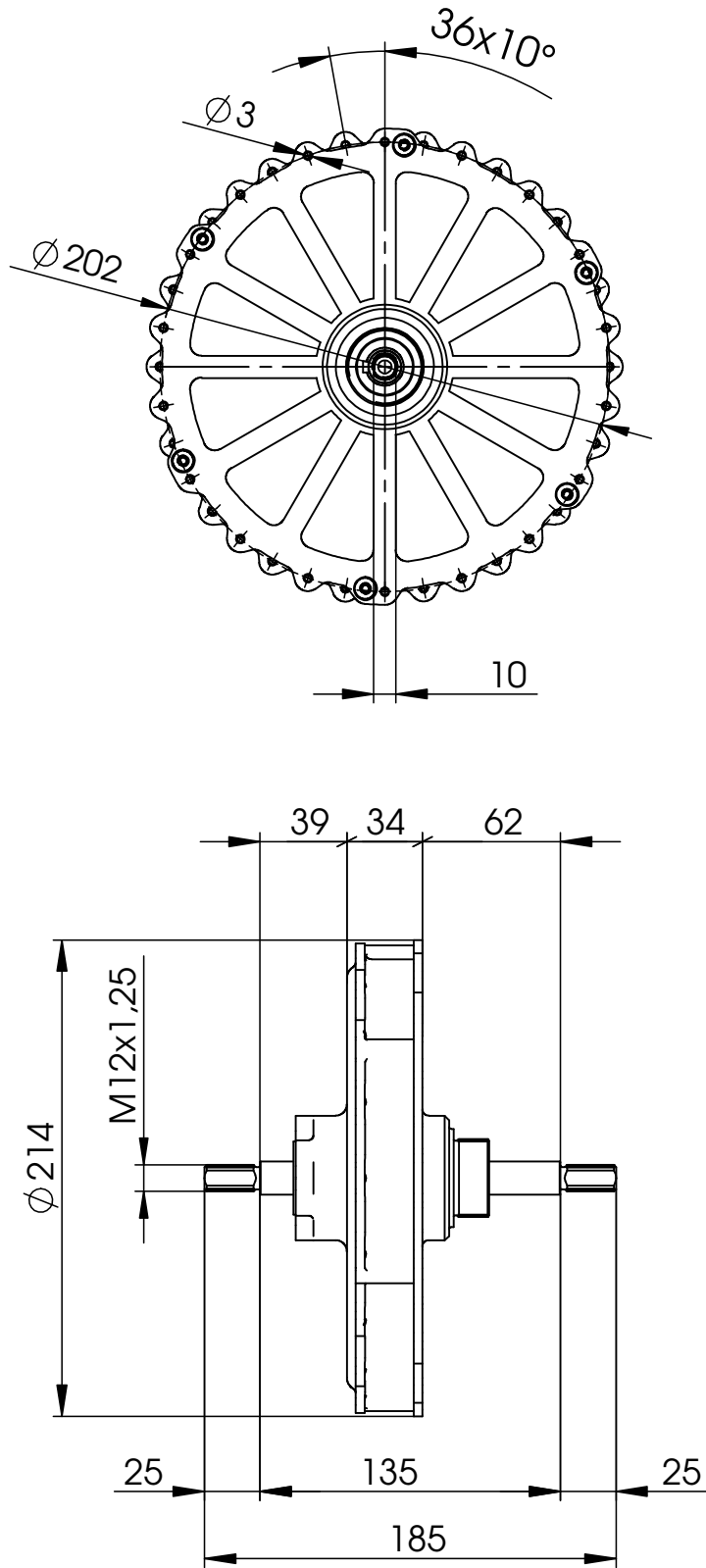


Fig1: General Dimensions - Pedelex™ - 12-1

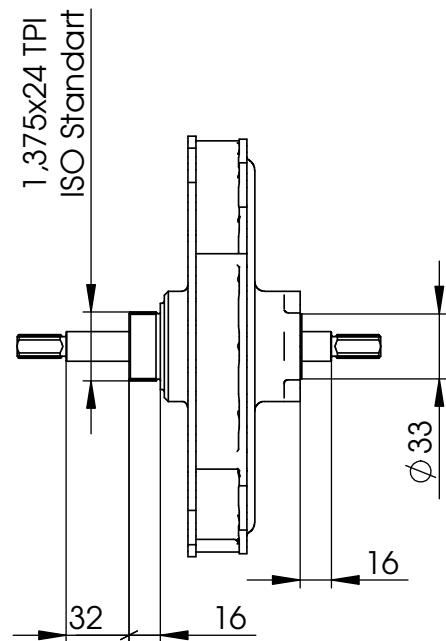
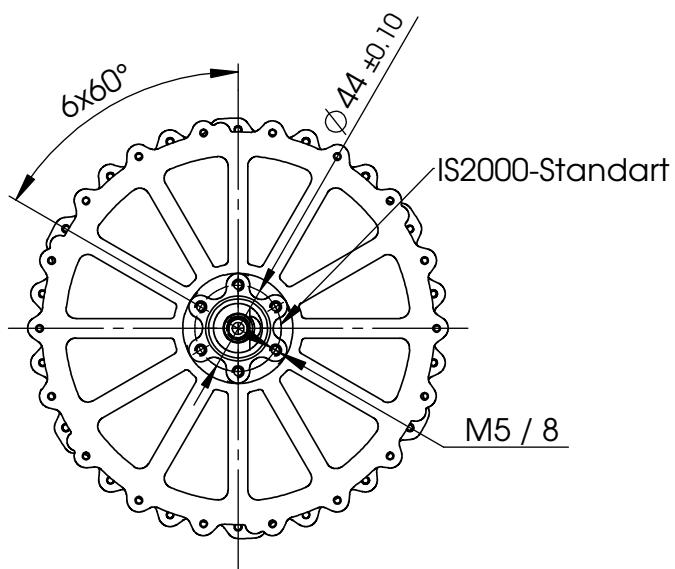


Fig 2: Interface Specification PedeleX™

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