Parvalux brushless DC (BLDC) motors are available as motor-only and with a choice of inline or right-angle gearboxes.

BLDC motors require no maintenance, which makes them ideal for use in ‘fit and forget’ applications. They offer high starting torque, excellent power density and quiet operation.
**Overview**

The BLx60 is part of our range of brushless permanent magnet DC motors. Currently available in a single stack length with a range of operating voltages.

The BLx60 is highly efficient motor, designed for market applications such as:

- **Materials handling**: AGVs, pallet and tray shuttles, conveyors, sorting machines
- **Medical devices**: Medical, fluid and air pumps
- **Mobility solutions**: Patient hoists, stairlifts
- **Building automation**: Door automation, access control

**Motor Design**

The 4-pole bi-directional brushless motor is housed within a powder coated steel and aluminum pressure die-cast housing, sealed to IP54 (with IP67 on request) protecting it from dust particles and water spray.

Built to Class F insulation, enabling a temperature rise of 115°C based on an ambient temperature of 40°C. Casing temperature can operate within -30° to +100°C.

It features a 40mm stack length (overall length 119mm) delivering 0.6Nm. Options include 3000RPM/4000RPM and 12v to 48v models.

Designed with an electronic commutation the motor can support custom shaft designs and windings. It can be combined with both Parvalux encoders & brakes, maxon & Parvalux controllers and gearheads as part of a modular system.

**Features at a glance**

- 4 pole brushless design
- Continuously rated at up to 0.67Nm
- Selection of voltages up to 48V DC
- Bi-directional operation
- Supports custom shaft designs and windings

**Market sectors**

- **Materials handling**
- **Medical devices**
- **Mobility solutions**
- **Building automation**

**Product Overview**

The BLx60 is part of our range of brushless permanent magnet DC motors. Currently available in a single stack length with a range of operating voltages.

The BLx60 is highly efficient motor, designed for market applications such as:

- **Materials handling**: AGVs, pallet and tray shuttles, conveyors, sorting machines
- **Medical devices**: Medical, fluid and air pumps
- **Mobility solutions**: Patient hoists, stairlifts
- **Building automation**: Door automation, access control

**Motor Design**

The 4-pole bi-directional brushless motor is housed within a powder coated steel and aluminum pressure die-cast housing, sealed to IP54 (with IP67 on request) protecting it from dust particles and water spray.

Built to Class F insulation, enabling a temperature rise of 115°C based on an ambient temperature of 40°C. Casing temperature can operate within -30° to +100°C.

It features a 40mm stack length (overall length 119mm) delivering 0.6Nm. Options include 3000RPM/4000RPM and 12v to 48v models.

Designed with an electronic commutation the motor can support custom shaft designs, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors as required.

UL, ETL, CSA approvals available on request, with EMC EN 61000-6-3: 2007 +A12011 suppression optional.

The motor can be combined with both Parvalux encoders & brakes, maxon & Parvalux controllers and gearheads as part of a modular system.
### BLx60-40 BLDC motor

#### Dimensions
- **Ø60 mm frame**
- **40 mm stack**

#### Part Number Key

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<thead>
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<th>Modular</th>
<th>Calculated</th>
</tr>
</thead>
<tbody>
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#### Specification Table

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<th>Nominal power W</th>
<th>Nominal voltage V</th>
<th>No load speed rpm</th>
<th>No load current A</th>
<th>Nominal speed rpm</th>
<th>Nominal continuous torque (S1) Nm</th>
<th>Nominal continuous current (S1) A</th>
<th>Max Intermittent torque (S2 - 15 minutes) Nm</th>
<th>Stall current A</th>
<th>Stall torque Nm</th>
<th>Maximum efficiency %</th>
<th>Ra Ω</th>
<th>Rl mH</th>
<th>Speed constant rpm/V</th>
<th>Torque constant Nm/A</th>
<th>Speed torque gradient rpm/Nm</th>
<th>Rotor inertia Kg/cm²</th>
<th>Weight Kg</th>
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<td>0.025 0.025 0.025 0.025</td>
</tr>
</tbody>
</table>

#### Notes
- Available on request: Custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speeds, higher IP protection class, custom flanges and connectors.
- All products subject to performance tolerances from EN60034-1:2010. As continuous improvement, Parvalux periodically test their product range to ensure test results are as accurate as possible and are therefore subject to change. Please ensure you are using the latest datasheets found on our website.

#### Additional Length
- +L mm = approximate added length
- Additional length may also be required for mounting flange between components.
PBL42 Product Overview

Overview

The PBL42 is a brushless direct current (BLDC) motor. It is available in a range of options with 2 different stack lengths, voltages from 24V – 48V DC and output power up to 42 Watts.

It is rated for nominal continuous torque up to 0.15 Nm (S1) and maximum intermittent torque up to 0.1 Nm (S2 - 15 minutes).

This motor is perfectly suited for use with a range of Parvalux right-angle and inline gearboxes enabling you to assemble the perfect geared motor combination for your application.

Motor Design

The 8-pole bi-directional PBL42 is housed within a lamination steel casing with aluminium end caps, sealed to IP54 (IP50 at exposed motor shafts), protecting it from dust particles and water spray.

Built to Class B insulation, enabling a temperature rise of 115°C based on an ambient temperature of 40°C. Casing temperature can operate within -30° to +100°C.

There are two models available, the PBL42-15 (stack length 15mm, overall motor length 47 mm), and the PBL42-35 (stack length 35mm, overall motor length 67 mm) delivering 0.063 Nm and 0.1 Nm continuous torque (S1) respectively, with a range of voltage options in each.

The motor can be combined with Parvalux encoders, controllers, and gearheads as part of a modular system.

Features at a glance

- Delivers up to 0.15 Nm (S2 - 15 minutes)
- Compact envelope size & lightweight
- Selection of voltages from 24 - 48V DC
- Continuously rated at up to 0.1 Nm
- Bi-directional operation
- Supports custom shaft designs and windings

PBL42 Modular System

Compatible gearboxes and accessories

Voltage V PBL42-15 PBL42-35
24 776614 776616
48 776615 776617

Controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Mounting flange</th>
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<td>739595</td>
<td>TBC</td>
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Encoder

<table>
<thead>
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<th>Mounting flange</th>
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<td>739592</td>
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</table>

Additional ratios available on request: 5, 10, 15, 20, 30, 60, 90, 150, 300, 600

Parvalux Electric Motors Ltd.
**PBL42-15**  BLDC motor

Ø42 mm frame // 15 mm stack

<table>
<thead>
<tr>
<th>Thermal data</th>
<th>Mechanical data</th>
<th>Other data</th>
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<td>23 Radial load (distance from flange) N [mm] 100 [150]</td>
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<td>24 Radial play mm [deg] 0.06 [450]</td>
<td>25 Axial end play mm [deg] 0.06 [450]</td>
<td>27 Winding type Delta</td>
</tr>
<tr>
<td>26 Number of poles B</td>
<td>27 Winding type Delta</td>
<td>28 Insulation Class B</td>
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</tbody>
</table>

**PBL42-35**  BLDC motor

Ø42 mm frame // 35 mm stack

<table>
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<td>23 Radial load (distance from flange) N [mm] 100 [150]</td>
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<td>27 Winding type Delta</td>
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<tr>
<td>26 Number of poles B</td>
<td>27 Winding type Delta</td>
<td>28 Insulation Class B</td>
</tr>
</tbody>
</table>

**Part number key**

- Standard
- Calculated data
- Modular system
- Technical data
- Calculated data
- Standard
- Modular system
- Part number key

**Additional length may be required for mounting flange between components.**
PBL60 Product Overview

PBL60-50  BLDC motor
□60 mm frame  //  50 mm stack

PBL60-70  BLDC motor
□60 mm frame  //  70 mm stack

Overview

The Parvalux PBL60 is a brushless direct current (BLDC) motor. It is available in 2 different stack lengths and a range of voltage options from 24V – 48V DC and output power up to 157 Watts.

It is rated for nominal continuous torque up to 0.5 Nm (S1) and maximum intermittent torque up to 0.88 Nm (S2 – 15 minutes).

This motor is perfectly suited for use with a range of Parvalux right-angle and inline gearboxes enabling you to assemble the perfect geared motor combination for your application.

Motor Design

The 8-pole bi-directional PBL60 is housed within a lamination steel casing with aluminium end caps, sealed to IP54 (IP50 at exposed motor shafts), protecting it from dust particles and water spray.

Built to Class B insulation, enabling a temperature rise of 115°C based on an ambient temperature of 40°C. Casing temperature can operate within -30° to +100°C.

There are two models available, the PBL60-50 (stack length 50mm, overall motor length 90mm), and the PBL60-70 (stack length 70mm, overall motor length 110mm) delivering 0.33 Nm and 0.50 Nm continuous torque (S1) respectively, with a range of voltage options in each.

The motor can be combined with Parvalux encoders, controllers, and gearheads as part of a modular system.

Features at a glance

→ Delivers up to 0.88 Nm (S2 – 15 minutes)
→ Compact envelope size & lightweight
→ Selection of voltages from 24 – 48V DC
→ Continuously rated at up to 0.5 Nm
→ Bi-directional operation
→ Supports custom shaft designs and windings
PBL60-50 BLDC motor
Ø60 mm frame // 50 mm stack

- Ø60 mm frame
- 50 mm stack
- Nominal power: 104 W
- Nominal voltage: 24 V
- No-load speed: 3,000 rpm
- Nominal speed: 3,000 rpm
- Nominal continuous torque (Si): 0.33 Nm
- Nominal continuous current (Si): 0.07 A
- Stall current: 0.07 A
- Stall torque: 0.06 Nm
- Stack length: 53 mm
- Maximum efficiency: 80 %
- Rotor inertia: 0.202 Kgcm²
- Weight: 2.120 Kg

- Optional: Optical Encoder

- Available on request: custom shaft length and diameter, custom flanges, custom connector, custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speeds.

- All products are built in accordance to performance tolerances from EN60034-1:2010.

- Modular system

- Brake: 1.5 Nm
- +L mm: 38.3

- Controller: EPOS ESCON SC 50/15

- Thermal data:
  - Ambient temperature: 40 °C

- Part number key
  - Part number: 776618 776619

- Technical data

- Calculated data

- Standard

- Modular

- Other data
  - Number of poles: 8
  - Winding type: Delta
  - Hall effect angle (electrical angle): 0°
  - IP Rating: IP44
  - Enclosure: Enclosed
  - Insulation Class: B

- All dimensions in mm

---

PBL60-70 BLDC motor
Ø60 mm frame // 70 mm stack

- Ø60 mm frame
- 70 mm stack
- Nominal power: 157 W
- Nominal voltage: 24 V
- No-load speed: 3,800 rpm
- Nominal speed: 3,000 rpm
- Nominal continuous torque (Si): 0.33 Nm
- Nominal continuous current (Si): 0.06 A
- Stall current: 0.06 A
- Stall torque: 0.05 Nm
- Stack length: 53 mm
- Maximum efficiency: 70 %
- Rotor inertia: 0.12 Kgcm²
- Weight: 1.60 Kg

- Optional: Optical Encoder

- Available on request: custom shaft length and diameter, custom flanges, custom connector, custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speeds.

- All products are built in accordance to performance tolerances from EN60034-1:2010.

- Modular system

- Brake: 1.5 Nm
- +L mm: 38.3

- Controller: EPOS ESCON SC 50/15

- Thermal data:
  - Ambient temperature: 40 °C

- Part number key
  - Part number: 776620 776621

- Technical data

- Calculated data

- Standard

- Modular

- Other data
  - Number of poles: 8
  - Winding type: Delta
  - Hall effect angle (electrical angle): 0°
  - IP Rating: IP44
  - Enclosure: Enclosed
  - Insulation Class: B

- All dimensions in mm

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All dimensions in mm

- 0.025 [450]
- 0.025 [450]
- 0.025 [450]
- 0.025 [450]

- 28.2
- 28.2

- 9
- 9

- +L mm

- *additional length may also be required for mounting flange between components

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Parvalux Electric Motors Ltd.

Product range catalogue

BLDC motors 40
**Overview**

The Parvalux PBL70 is a brushless direct current (BLDC) motor. It is available in two stack lengths with voltage of 48V DC and output power up to 276 Watts. It is rated for nominal continuous torque up to 0.88 Nm (S1) and maximum intermittent torque up to 1.54 Nm (S2 - 15 minutes). This motor is perfectly suited for use with a range of Parvalux right-angle and inline gearboxes enabling you to assemble the perfect geared motor combination for your application.

**Motor Design**

The 8-pole bi-directional PBL70 is housed within a lamination steel casing with aluminium end caps, sealed to IP54 (IP50 at exposed motor shafts), protecting it from dust particles and water spray. Built to Class B insulation, enabling a temperature rise of 115°C based on an ambient temperature of 40°C. Casing temperature can operate within -30° to +100°C.

There are two models available, the PBL70-70 (stack length 70mm, overall motor length 114mm), and the PBL70-80 (stack length 80mm, overall motor length 124mm) delivering 0.77 Nm and 0.88 Nm continuous torque (S1) respectively. This motor comes as a 48v option only.

The motor can be combined with Parvalux encoders, controllers, and gearheads as part of a modular system.

---

**Features at a glance**

- Delivers up to 1.54 Nm (S2 - 15 minutes)
- Available voltage: 48V
- Continuously rated up to 0.88 Nm
- Bi-directional operation
- Supports custom shaft designs and windings

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**Controllers**

- Controller: 736960

**Brakes**

- Brake: 735984

**Encoders**

- Incremental: 739712
### PBL70-70 BLDC motor

**Ø70 mm frame // 70 mm stack**

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Value</th>
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<tbody>
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<td>Number of poles</td>
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<td>Weight</td>
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<td>Delta</td>
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<tr>
<td>IP Rating</td>
<td>IP54</td>
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<tr>
<td>Enclosure</td>
<td>Enclosed</td>
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<tr>
<td>Stall current</td>
<td>0.025 A</td>
</tr>
<tr>
<td>Speed constant</td>
<td>68.2 rpm/V</td>
</tr>
<tr>
<td>Rotor inertia</td>
<td>0.283 kg cm²</td>
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<tr>
<td>Stall torque</td>
<td>9.0 Nm</td>
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<tr>
<td>Nominal continuous torque</td>
<td>0.77 Nm</td>
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<tr>
<td>Ra</td>
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<tr>
<td>Nominal voltage</td>
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<tr>
<td>Nominal power</td>
<td>415 W</td>
</tr>
<tr>
<td>Nominal speed</td>
<td>4500 rpm</td>
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<tr>
<td>Nominal continuous current</td>
<td>0.151 A</td>
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<td>Stall current</td>
<td>1.53 A</td>
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<tr>
<td>Maximum efficiency</td>
<td>48 %</td>
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<tr>
<td>Ambient temperature</td>
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<tr>
<td>Stall torque</td>
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<tr>
<td>Stack length</td>
<td>49 - 99 mm</td>
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<tr>
<td>Motor length</td>
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### PBL70-80 BLDC motor

**Ø70 mm frame // 80 mm stack**

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<tr>
<td>Weight</td>
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</tr>
<tr>
<td>Insulation Class</td>
<td>B</td>
</tr>
<tr>
<td>Winding type</td>
<td>Delta</td>
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<td>IP Rating</td>
<td>IP54</td>
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<td>Enclosure</td>
<td>Enclosed</td>
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<tr>
<td>Stall current</td>
<td>0.025 A</td>
</tr>
<tr>
<td>Speed constant</td>
<td>68.2 rpm/V</td>
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<td>Rotor inertia</td>
<td>0.283 kg cm²</td>
</tr>
<tr>
<td>Stall torque</td>
<td>9.0 Nm</td>
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<tr>
<td>Nominal continuous torque</td>
<td>0.77 Nm</td>
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<td>Ra</td>
<td>80</td>
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<td>Nominal voltage</td>
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<td>Nominal power</td>
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<td>Nominal speed</td>
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<td>Nominal continuous current</td>
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<td>Stall current</td>
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<td>Maximum efficiency</td>
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<td>Ambient temperature</td>
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<td>Stall torque</td>
<td>52 - 102 Nm</td>
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<td>Stack length</td>
<td>49 - 99 mm</td>
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<tr>
<td>Motor length</td>
<td>110 mm</td>
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</tbody>
</table>

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**Part number key**
- **Modular**
- **Calculated data**
- **Standard**

**Part number** 776622

**Technical data**

- Stall current: 0.025 A
- Speed constant: 68.2 rpm/V
- Rotor inertia: 0.283 kg cm²
- Stall torque: 9.0 Nm
- Nominal continuous torque: 0.77 Nm
- Ra: 80
- Nominal voltage: 82.0 V
- Nominal power: 415 W
- Nominal speed: 4500 rpm
- Nominal continuous current: 0.151 A
- Stall current: 1.53 A
- Maximum efficiency: 48%
- Ambient temperature: 40°C
- Stall torque: 52 - 102 Nm
- Stack length: 49 - 99 mm
- Motor length: 110 mm

**Mechanical data**

- Brake: mm [deg] 0025 [450]
- Gearbox: +L mm
- Controller: +L mm

**Other data**

- B: 52 - 102 mm
- Delta: mm [deg] 0025 [450]
**Overview**

The Parvalux PBL86 is a brushless direct current (BLDC) motor. It is available in two stack lengths, with a voltage of 48V DC and output power up to 566 Watts.

It is rated for nominal continuous torque up to 1.4 Nm (S1) and maximum intermittent torque up to 2.5 Nm (S2 - 15 minutes).

This motor is perfectly suited for use with a range of Parvalux right-angle and inline gearboxes enabling you to assemble the perfect geared motor combination for your application.

**Motor Design**

The 8-pole bi-directional PBL86 is housed within a lamination steel casing with aluminium end caps, sealed to IP54 (IP50 at exposed motor shafts), protecting it from dust particles and water spray.

Built to Class B insulation, enabling a temperature rise of 115°C based on an ambient temperature of 40°C. Casing temperature can operate within -30°C to +100°C.

There are two models available, the PBL86-55 (stack length 55mm, overall motor length 111mm), and the PBL86-80 (stack length 80mm, overall motor length 136mm) delivering 1.0 Nm and 1.4 Nm continuous torque (S1) respectively. This motor is available in a 48v option only.

The motor can be combined with Parvalux encoders, controllers and gearheads as part of a modular system.

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**Features at a glance**

- Delivers up to 2.5 Nm (S2 - 15 minutes)
- Available voltage: 48V
- Continuously rated at up to 1.4 Nm
- Bi-directional operation
- Supports custom shaft designs and windings