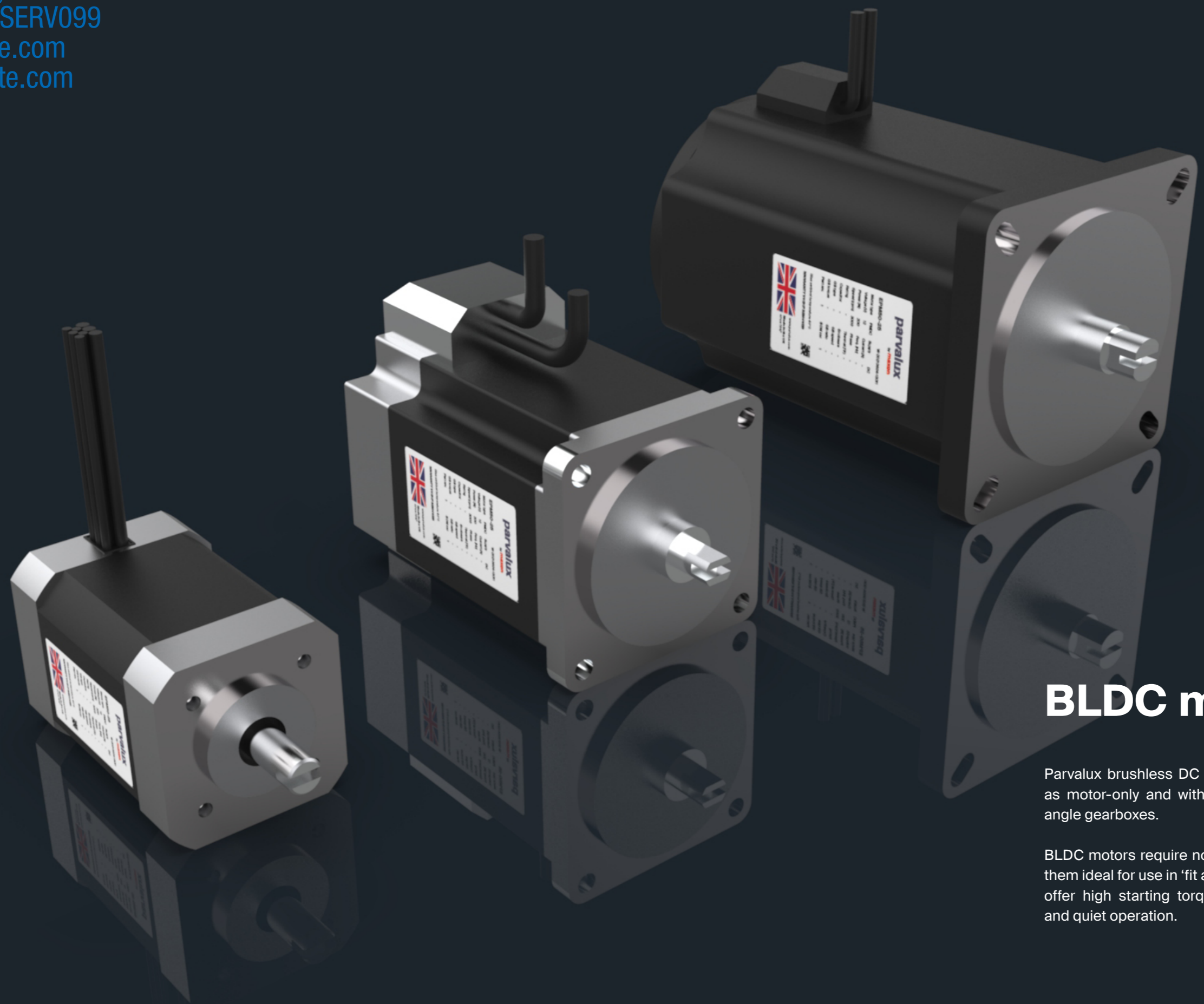


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## BLDC motors

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.

# BLx60 Product Overview

PMDC motor // Ø42 mm frame



**BLx60-40** BLDC motor  
□60 mm frame // 40 mm stack

## 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 aluminium 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.

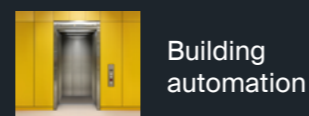
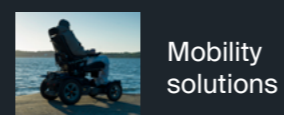
UL, ETL, CSA approvals available on request, with EMC EN 61000-6-3: 2007 +A1:2011 suppression optional.

The motor 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



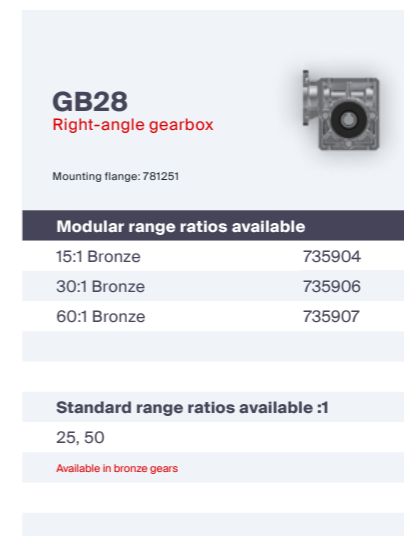
# BLx60 Modular System

Compatible gearboxes and accessories



**BLx60**  
BLDC motor

Voltage V	BLx60-40
24	776618
48	776619



**GB28**  
Right-angle gearbox

Mounting flange: 781251

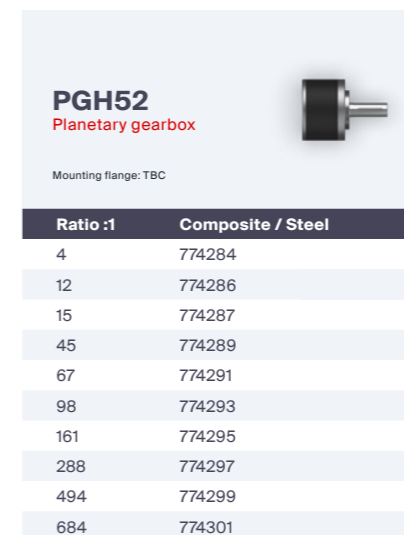
### Modular range ratios available

15:1 Bronze	735904
30:1 Bronze	735906
60:1 Bronze	735907

### Standard range ratios available :1

25, 50

Available in bronze gears



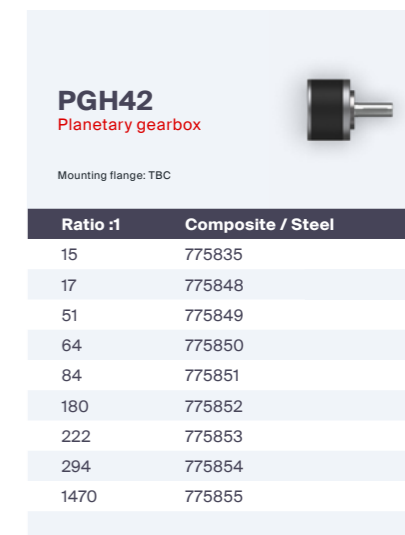
**PGH52**  
Planetary gearbox

Mounting flange: TBC

### Ratio :1 Composite / Steel

4	774284
12	774286
15	774287
45	774289
67	774291
98	774293
161	774295
288	774297
494	774299
684	774301

Additional ratios available on request (†): 5, 19, 57, 82, 114, 207, 357, 552

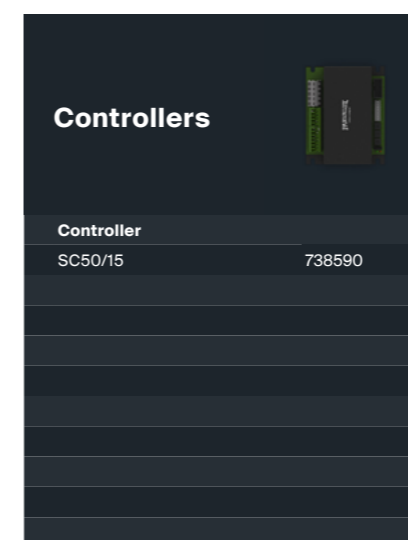


**PGH42**  
Planetary gearbox

Mounting flange: TBC

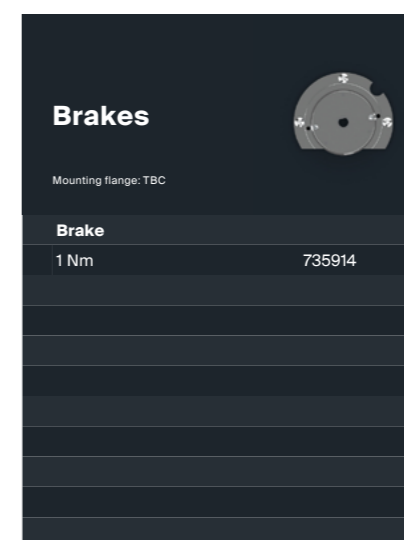
### Ratio :1 Composite / Steel

15	775835
17	775848
51	775849
64	775850
84	775851
180	775852
222	775853
294	775854
1470	775855



## Controllers

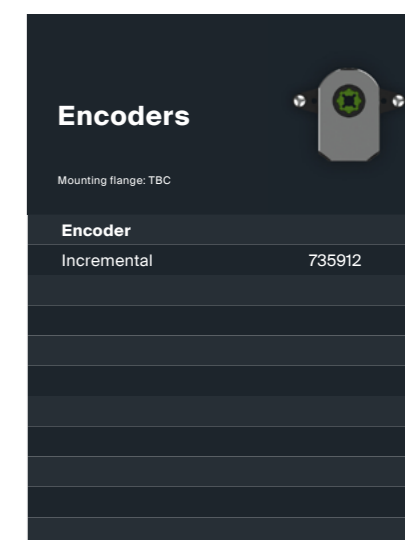
Controller	
SC50/15	738590



## Brakes

Mounting flange: TBC

Brake	
1 Nm	735914



## Encoders

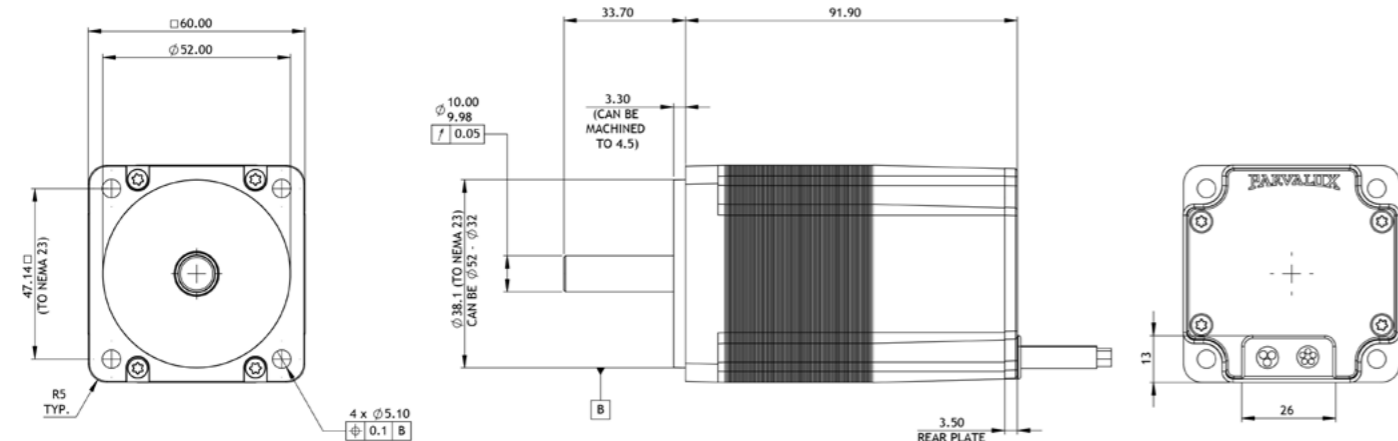
Mounting flange: TBC

Encoder	
Incremental	735912

# BLx60-40 BLDC motor

Ø60 mm frame // 40 mm stack

all dimensions in mm



Part number key	
Modular	#####
Standard	#####
Calculated data	#####

**Available on request:** Custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors

All products are built in accordance 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

Technical data	
1 Part number	- - - - -
2 Nominal power	W 110 110 110 110 147 147 147 147
3 Nominal voltage	V 12 24 40 48 12 24 40 48
4 No load speed	rpm 4066 4066 4066 4066 5016 4843 4877 4843
5 No load current	A 0.58 0.29 0.17 0.15 1.15 0.55 0.33 0.28
6 Nominal speed	rpm 3000 3000 3000 3000 4000 4000 4000 4000
7 Nominal continuous torque (S1)	Nm 0.35 0.35 0.35 0.35 0.35 0.35 0.35 0.35
8 Nominal continuous current (S1)	A 12.0 6.0 3.6 3.0 15.2 7.3 4.4 3.7
9 Max Intermittent torque (S2 - 15 minutes)	Nm 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60
10 Stall current	A 55.0 27.0 16.0 14.0 87.0 40.0 24.6 20.2
11 Stall torque	Nm 1.6 1.6 1.6 1.6 2.2 2.1 2.1 2.1
12 Stack length	mm 40 40 40 40 40 40 40 40
13 Maximum efficiency	% 84 84 84 84 84 84 84 84
14 Ra	Ω 0.22 0.88 2.44 3.50 0.14 0.59 1.63 2.37
15 Rl	mH - - - - -
16 Speed constant	rpm/V 329 165 99 82 412 199 120 100
17 Torque constant	Nm/A 0.03 0.06 0.11 0.13 0.025 0.051 0.085 0.102
18 Speed torque gradient	rpm/Nm 2530 2530 2530 2530 2310 2310 2310 2310
19 Rotor inertia	Kg/cm <sup>2</sup> 2.4 x 10 <sup>-5</sup> 2.4 x 10 <sup>-5</sup> 2.4 x 10 <sup>-5</sup> 2.4 x 10 <sup>-5</sup> 2.4 x 10 <sup>-5</sup> 2.4 x 10 <sup>-5</sup> 2.4 x 10 <sup>-5</sup> 2.4 x 10 <sup>-5</sup>
20 Weight	Kg 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15

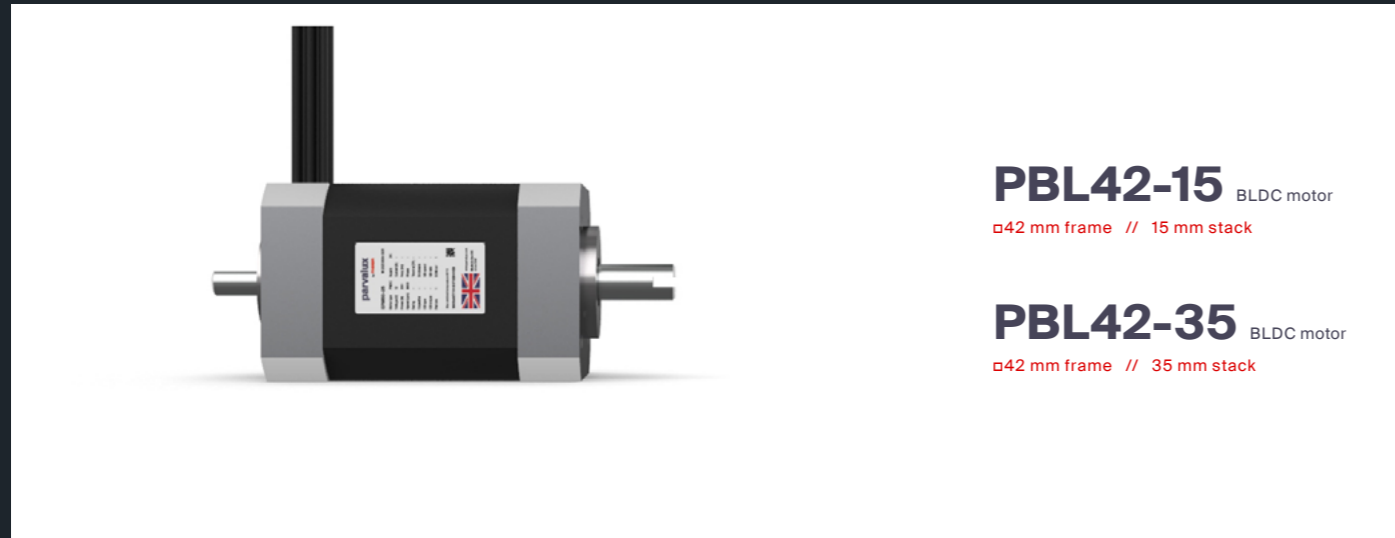
Thermal data		Modular system	
21 Ambient temperature	°C 40	Brake	+L mm
		1.5	28.2
		Gearbox	+L mm
		GB28	85
		PGH42	32 - 60
		PGH52	53 - 100
		Encoder	+L mm
		Optical	9
		Controller	
		SC 50/15	
		ESCON	
		EPOS	

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

## Notes

# PBL42 Product Overview

BLDC motor //  $\varnothing$ 42 mm frame



## 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

### PBL42 BLDC motor

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

### PGH52 Planetary gearbox

Mounting flange: TBC

Ratio :1	Composite / Steel
4	774284
12	774286
15	774287
45	774289
67	774291
98	774293
161	774295
288	774297
494	774299
684	774301

Additional ratios available on request (t1): 5, 19, 57, 82, 114, 207, 357, 552

### PGH42 Planetary gearbox

Mounting flange: 781248

Ratio :1	Composite / Steel
15	775835
17	775848
51	775849
64	775850
84	775851
180	775852
222	775853
294	775854
1470	775855

### Controllers

Controller	
SC50/15	738590

### Encoders

Mounting flange: 781280

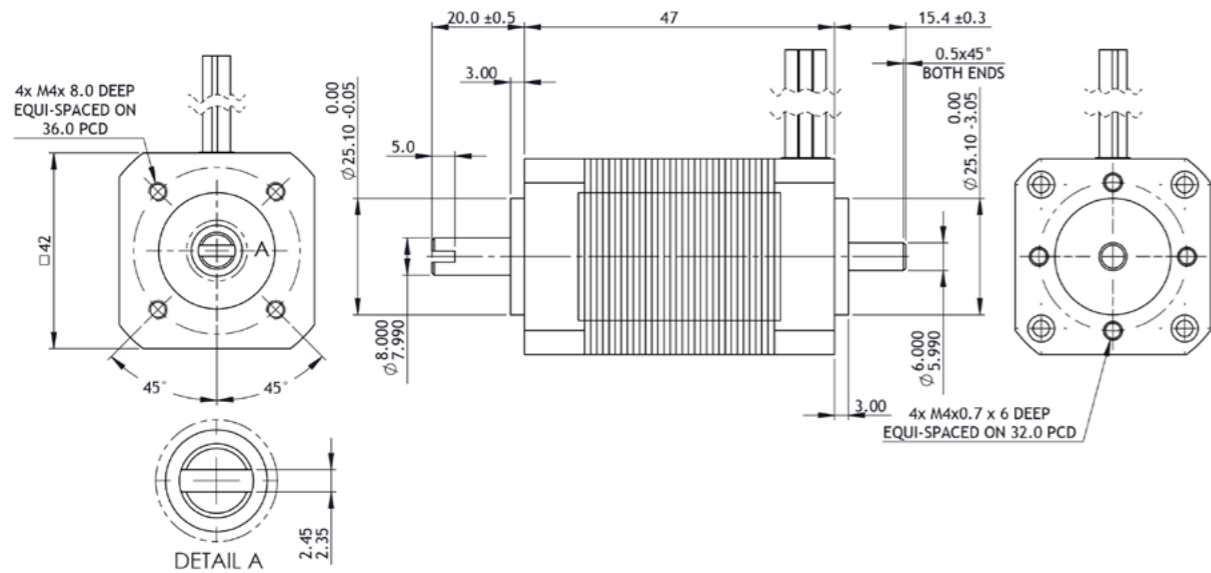
Encoder	
Incremental	735912

# PBL42-15

BLDC motor

Ø42 mm frame // 15 mm stack

all dimensions in mm



## Part number key

Modular	#####
Standard	#####
Calculated data	#####

**Available on request:** custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors

All products are built in accordance 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

## Technical data

1 Part number		776614	776615
2 Nominal power	W	26	26
3 Nominal voltage	V	24	48
4 No load speed	rpm	6068	6227
5 No load current	A	0.4	0.3
6 Nominal speed	rpm	4000	4000
7 Nominal continuous torque (S1)	Nm	0.063	0.063
8 Nominal continuous current (S1)	A	1.8	1.0
9 Max Intermittent torque (S2 - 15 minutes)	Nm	0.095	0.095
10 Stall current	A	6.50	3.34
11 Stall torque	Nm	0.21	0.21
12 Stack length	mm	15	15
13 Maximum efficiency	%	75	75
14 Ra	Ω	1.8	71
15 Rl	mH	2260	911
16 Speed constant	rpm/V	230.4	142.0
17 Torque constant	Nm/A	0.032	0.070
18 Speed torque gradient	rpm/Nm	28152	29351
19 Rotor inertia	Kgcm <sup>2</sup>	3.3 x 10 <sup>-6</sup>	3.3 x 10 <sup>-6</sup>
20 Weight	Kg	0.30	0.30

## Thermal data

22 Ambient temperature	°C	40
------------------------	----	----

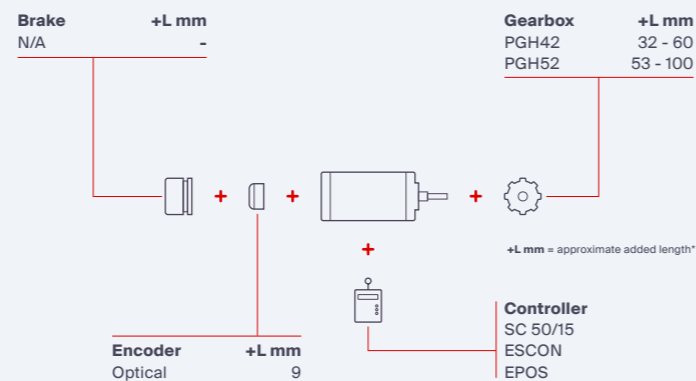
## Mechanical data

23 Radial load [distance from flange]	N [mm]	130 [15]
24 Radial play	mm [g]	0.06 [450]
25 Axial end play	mm [g]	0.06 [450]

## Other data

26 Number of poles		8
27 Winding type		Delta
28 Hall effect angle (electrical angle)	°	120
29 IP Rating		IP54
30 Enclosure		Enclosed
31 Insulation Class		B

## Modular system



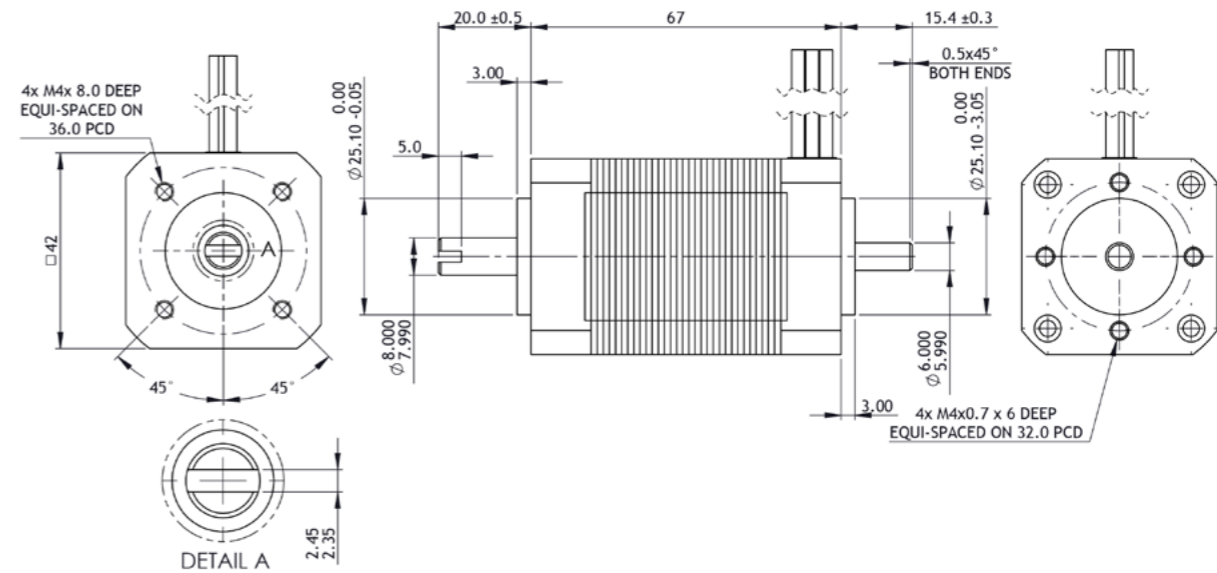
\*additional length may also be required for mounting flange between components

# PBL42-35

BLDC motor

Ø42 mm frame // 35 mm stack

all dimensions in mm



## Part number key

Modular	#####
Standard	#####
Calculated data	#####

**Available on request:** custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors

All products are built in accordance 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

## Technical data

1 Part number		776616	776617
2 Nominal power	W	42	42
3 Nominal voltage	V	24	48
4 No load speed	rpm	5835	6001
5 No load current	A	0.4	0.3
6 Nominal speed	rpm	4000	4000
7 Nominal continuous torque (S1)	Nm	0.1	0.1
8 Nominal continuous current (S1)	A	2.6	1.3
9 Max Intermittent torque (S2 - 15 minutes)	Nm	0.15	0.15
10 Stall current	A	9.6	5.0
11 Stall torque	Nm	0.4	0.4
12 Stack length	mm	35	35
13 Maximum efficiency	%	77	75
14 Ra	Ω	0.87	3.35
15 Rl	mH	1298	5415
16 Speed constant	rpm/V	251.7	132.2
17 Torque constant	Nm/A	0.043	0.093
18 Speed torque gradient	rpm/Nm	14157	13361
19 Rotor inertia	Kgcm <sup>2</sup>	5.5 x 10 <sup>-6</sup>	5.5 x 10 <sup>-6</sup>
20 Weight	Kg	0.45	0.45

## Thermal data

22 Ambient temperature	°C	40
------------------------	----	----

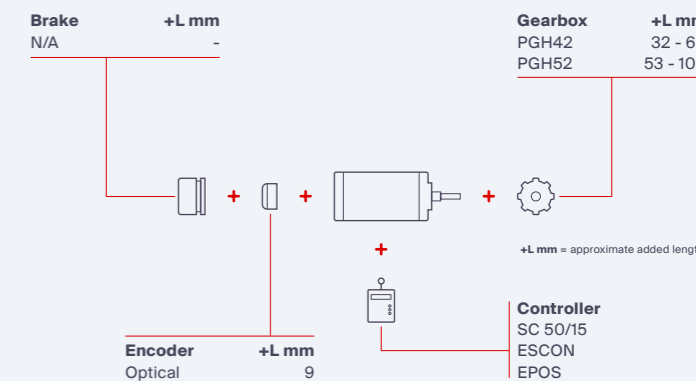
## Mechanical data

23 Radial load [distance from flange]	N [mm]	130 [15]
24 Radial play	mm [g]	0.06 [450]
25 Axial end play	mm [g]	0.06 [450]

## Other data

26 Number of poles		8
27 Winding type		Delta
28 Hall effect angle (electrical angle)	°	120
29 IP Rating		IP54
30 Enclosure		Enclosed
31 Insulation Class		B

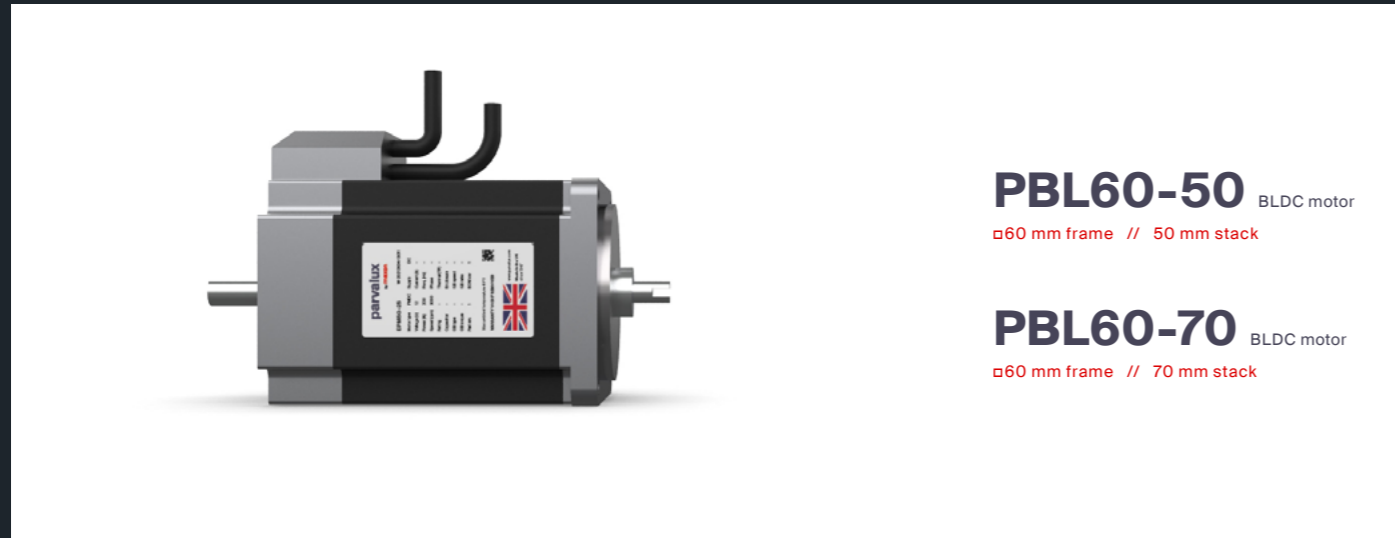
## Modular system



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

# PBL60 Product Overview

BLDC motor // 60 mm frame



## 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 Modular System

Compatible gearboxes and accessories

### PBL60 BLDC motor

Voltage V	PBL60-50	PBL60-70
24	776618	776620
48	776619	776621

### GB28 Right-angle gearbox

Mounting flange: 781251

Modular range ratios available	
15:1 Bronze	735904
30:1 Bronze	735906
60:1 Bronze	735907

Standard range ratios available :1  
25, 50  
Available in bronze gears

### PGH52 Planetary gearbox

Mounting flange: TBC

Ratio :1	Composite / Steel
4	774284
12	774286
15	774287
45	774289
67	774291
98	774293
161	774295
288	774297
494	774299
684	774301

Additional ratios available on request (†): 5, 19, 57, 82, 114, 207, 357, 552

### PGH42 Planetary gearbox

Mounting flange: TBC

Ratio :1	Composite / Steel
15	775835
17	775848
51	775849
64	775850
84	775851
180	775852
222	775853
294	775854
1470	775855

### Controllers

Controller	
SC50/15	738590

### Brakes

Mounting flange: 781281

Brake	
1 Nm	735914

### Encoders

Mounting flange: 781281

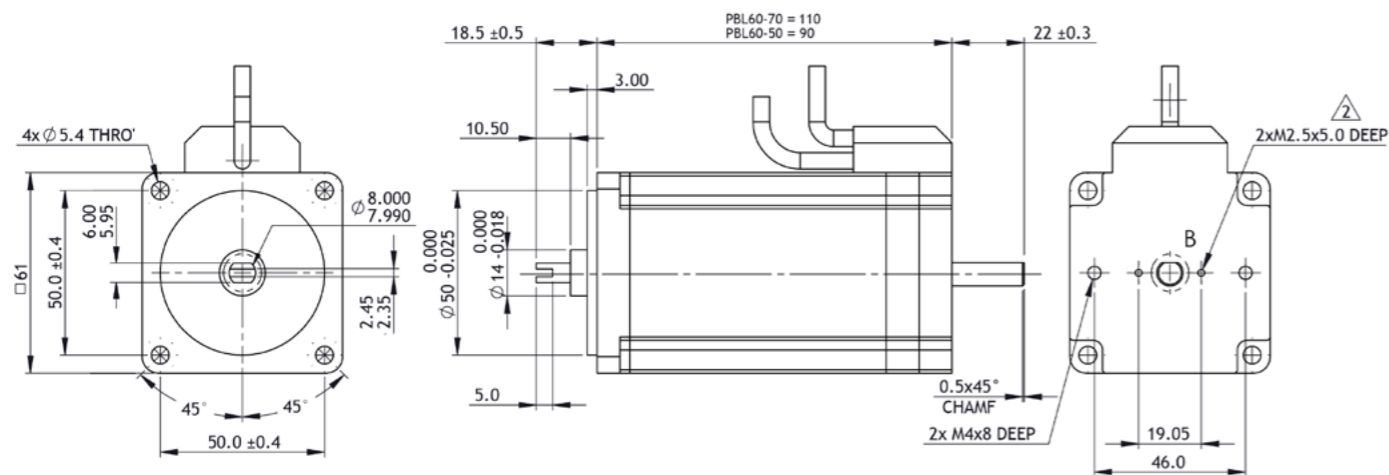
Encoder	
Incremental	735912

# PBL60-50

BLDC motor

Ø60 mm frame // 50 mm stack

all dimensions in mm



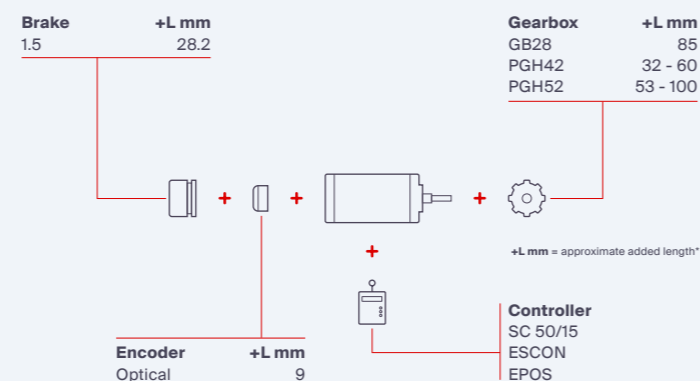
Part number key	
Modular	#####
Standard	#####
Calculated data	#####

Available on request: custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors

All products are built in accordance 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

Technical data			
1 Part number		776618	776619
2 Nominal power	W	104	104
3 Nominal voltage	V	24	48
4 No load speed	rpm	3798	3827
5 No load current	A	1.1	0.5
6 Nominal speed	rpm	3000	3000
7 Nominal continuous torque (S1)	Nm	0.33	0.33
8 Nominal continuous current (S1)	A	6.1	3.0
9 Max Intermittent torque (S2 - 15 minutes)	Nm	0.58	0.58
10 Stall current	A	41.00	26.40
11 Stall torque	Nm	2.6	3.4
12 Stack length	mm	50	50
13 Maximum efficiency	%	80	84
14 Ra	Ω	0.202	0.757
15 Rl	mH	211.8	856.4
16 Speed constant	rpm/V	159.6	80.7
17 Torque constant	Nm/A	0.07	0.13
18 Speed torque gradient	rpm/Nm	1502.6	1152.9
19 Rotor inertia	Kgcm <sup>2</sup>	4.97 x 10 <sup>-5</sup>	4.97 x 10 <sup>-5</sup>
20 Weight	Kg	1.20	1.20

Thermal data		Modular system	
21 Ambient temperature	°C	40	
Mechanical data			
22 Radial load [distance from flange]	N [mm]	350 [15]	
23 Radial play	mm [g]	0.025 [450]	
24 Axial end play	mm [g]	0.025 [450]	
Other data			
25 Number of poles		8	
26 Winding type		Delta	
27 Hall effect angle (electrical angle)	°	120	
28 IP Rating		IP54	
29 Enclosure		Enclosed	
30 Insulation Class		B	



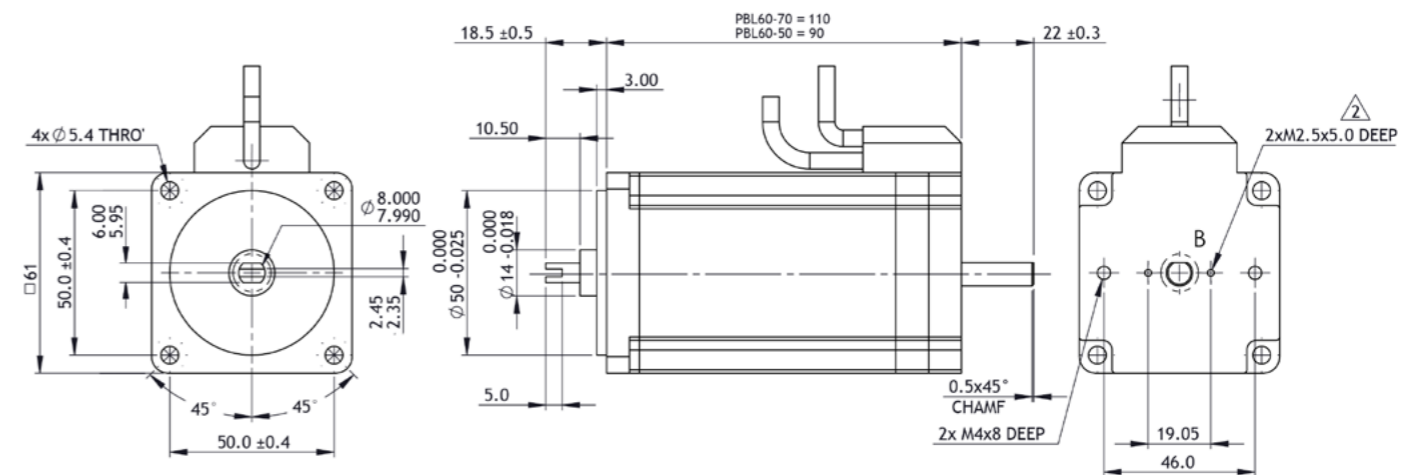
\*additional length may also be required for mounting flange between components

# PBL60-70

BLDC motor

Ø60 mm frame // 70 mm stack

all dimensions in mm



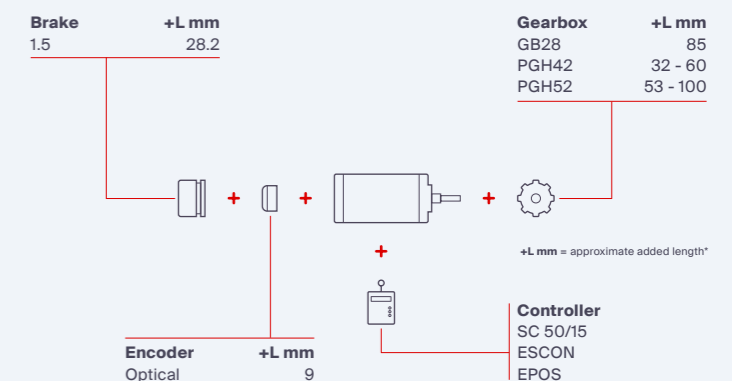
Part number key	
Modular	#####
Standard	#####
Calculated data	#####

Available on request: custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors

All products are built in accordance 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

Technical data			
1 Part number		776620	776621
2 Nominal power	W	157	157
3 Nominal voltage	V	24	48
4 No load speed	rpm	3983	3811
5 No load current	A	1.7	0.7
6 Nominal speed	rpm	3000	3000
7 Nominal continuous torque (S1)	Nm	0.5	0.5
8 Nominal continuous current (S1)	A	9.9	4.6
9 Max Intermittent torque (S2 - 15 minutes)	Nm	0.88	0.88
10 Stall current	A	63.44	36.90
11 Stall torque	Nm	3.7	4.5
12 Stack length	mm	70	70
13 Maximum efficiency	%	0.77	0.83
14 Ra	Ω	0.12	0.48
15 Rl	mH	124.1	555.3
16 Speed constant	rpm/V	167.30	80.34
17 Torque constant	Nm/A	0.06	0.12
18 Speed torque gradient	rpm/Nm	1121.90	870.34
19 Rotor inertia	Kgcm <sup>2</sup>	7.28 x 10 <sup>-5</sup>	7.28 x 10 <sup>-5</sup>
20 Weight	Kg	1.60	1.60

Thermal data		Modular system	
21 Ambient temperature	°C	40	
Mechanical data			
22 Radial load [distance from flange]	N [mm]	350 [15]	
23 Radial play	mm [g]	0.025 [450]	
24 Axial end play	mm [g]	0.025 [450]	
Other data			
25 Number of poles		8	
26 Winding type		Delta	
27 Hall effect angle (electrical angle)	°	120	
28 IP Rating		IP54	
29 Enclosure		Enclosed	
30 Insulation Class		B	



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

# PBL70 Product Overview

BLDC motor //  $\square$ 70 mm frame



## 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 at up to 0.88 Nm
- Bi-directional operation
- Supports custom shaft designs and windings

# PBL70 Modular System

Compatible gearboxes and accessories

**PBL70**  
BLDC motor

Voltage V	PBL70-70	PBL70-80
48	776622	776623

**GB12**  
Right-angle gearbox

Mounting flange: 781255

Modular range ratios available	
15:1 Composite	735900
30:1 Composite	735901
60:1 Composite	735902

**Standard range ratios available :1**  
12.5, 15, 19, 21, 25, 30, 50, 60, 75  
Available in both composite and bronze gears

**PGS80**  
Planetary gearbox

Mounting flange: 781254

Ratio :1	Composite / Steel
4	776144
13	776145
15	776181
49	776182
55	776183
186	776184
210	776185

**PGS71**  
Planetary gearbox

Mounting flange: TBC

Ratio :1	Composite / Steel
4	776197
16	776198
20	776199
50	776200
60	776201
75	776202
91	776203
189	776204
414	776205
543	776206

**Controllers**

Controller	
SC50/15	738590

**Brakes**

Mounting flange: 781283

Brake	
1 Nm	735914

**Encoders**

Mounting flange: 781283

Encoder	
Incremental	735912

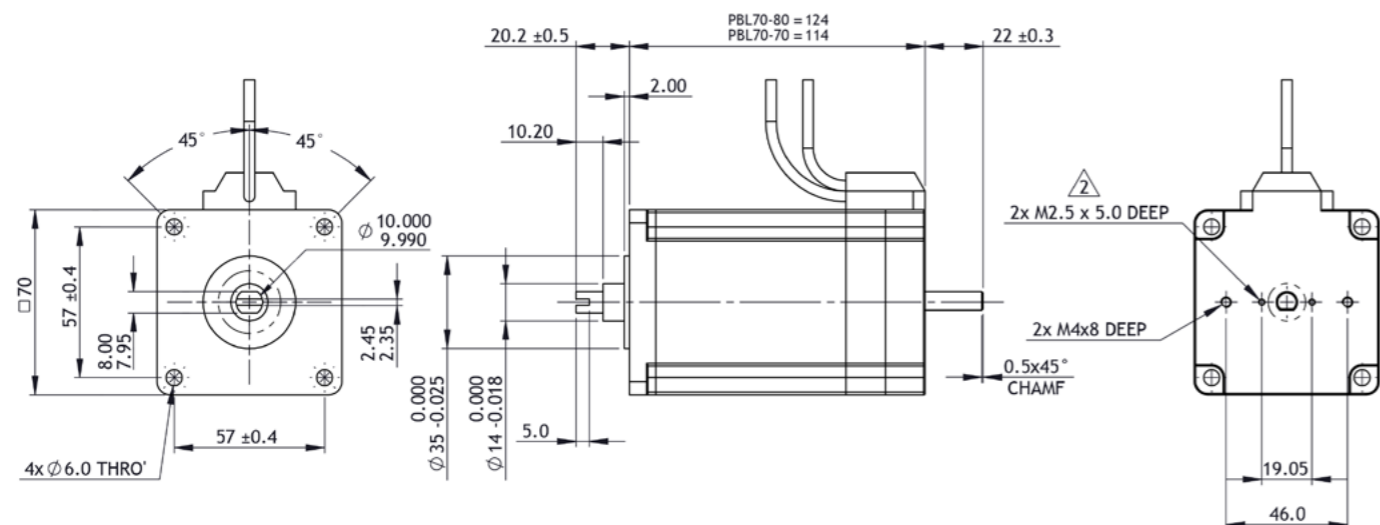


# PBL70-70

BLDC motor

Ø70 mm frame // 70 mm stack

all dimensions in mm



Part number key		<p><b>Available on request:</b> custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors</p> <p>All products are built in accordance 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</p>
Modular	#####	
Standard	#####	
Calculated data	#####	

Technical data		
1 Part number		<b>776622</b>
2 Nominal power	<b>W</b>	363
3 Nominal voltage	<b>V</b>	48
4 No load speed	<b>rpm</b>	4857
5 No load current	<b>A</b>	1.4
6 Nominal speed	<b>rpm</b>	4500
7 Nominal continuous torque (S1)	<b>Nm</b>	0.77
8 Nominal continuous current (S1)	<b>A</b>	8.9
9 Max Intermittent torque (S2 - 15 minutes)	<b>Nm</b>	1.35
10 Stall current	<b>A</b>	68.2
11 Stall torque	<b>Nm</b>	6.9
12 Stack length	<b>mm</b>	70
13 Maximum efficiency	<b>%</b>	84
14 Ra	<b>Ω</b>	0.151
15 Rl	<b>mH</b>	0.283
16 Speed constant	<b>rpm/V</b>	102.2
17 Torque constant	<b>Nm/A</b>	0.103
18 Speed torque gradient	<b>rpm/Nm</b>	731.0
19 Rotor inertia	<b>Kgcm<sup>2</sup></b>	2.39 x 10 <sup>-4</sup>
20 Weight	<b>Kg</b>	2.20

Thermal data		Modular system	
21 Ambient temperature	<b>°C</b>	40	

Mechanical data		Modular system	
22 Radial load [distance from flange]	<b>N [mm]</b>	350 [15]	
23 Radial play	<b>mm [g]</b>	0.025 [450]	
24 Axial end play	<b>mm [g]</b>	0.025 [450]	

Other data		Modular system	
25 Number of poles		8	
26 Winding type		Delta	
27 Hall effect angle (electrical angle)	<b>°</b>	120	
28 IP Rating		IP54	
29 Enclosure		Enclosed	
30 Insulation Class		B	

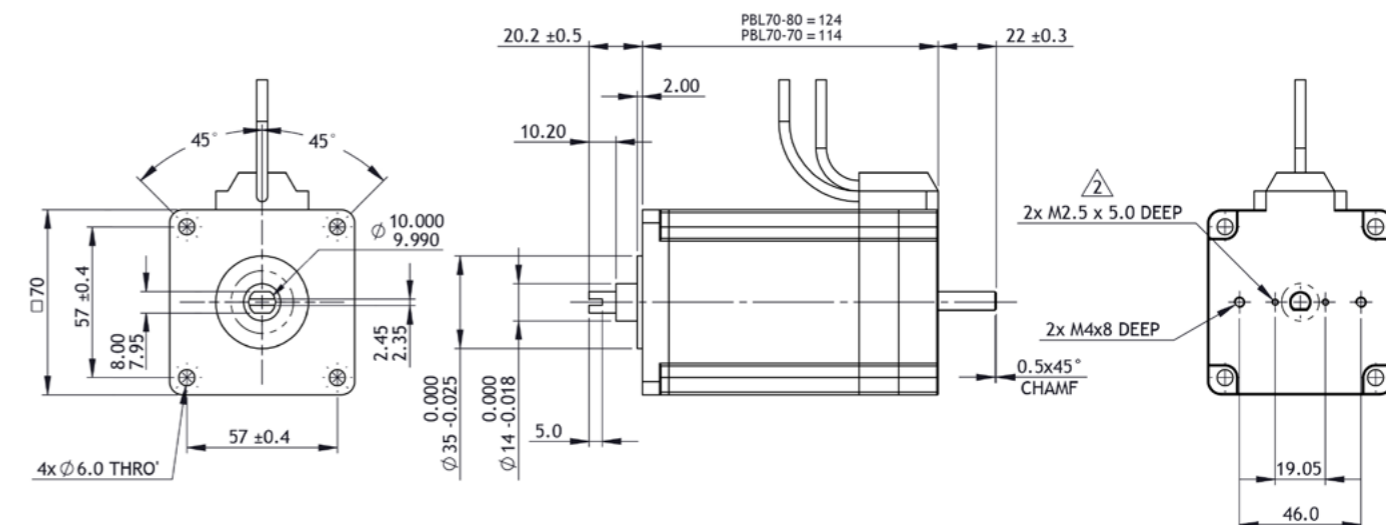
\*additional length may also be required for mounting flange between components

# PBL70-80

BLDC motor

Ø70 mm frame // 80 mm stack

all dimensions in mm



Part number key		<p><b>Available on request:</b> custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors</p> <p>All products are built in accordance 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</p>
Modular	#####	
Standard	#####	
Calculated data	#####	

Technical data		
1 Part number		<b>776623</b>
2 Nominal power	<b>W</b>	415
3 Nominal voltage	<b>V</b>	48
4 No load speed	<b>rpm</b>	4902
5 No load current	<b>A</b>	1.5
6 Nominal speed	<b>rpm</b>	4500
7 Nominal continuous torque (S1)	<b>Nm</b>	0.88
8 Nominal continuous current (S1)	<b>A</b>	10.4
9 Max Intermittent torque (S2 - 15 minutes)	<b>Nm</b>	1.54
10 Stall current	<b>A</b>	75.6
11 Stall torque	<b>Nm</b>	7.3
12 Stack length	<b>mm</b>	80
13 Maximum efficiency	<b>%</b>	82
14 Ra	<b>Ω</b>	0.151
15 Rl	<b>mH</b>	0.221
16 Speed constant	<b>rpm/V</b>	103
17 Torque constant	<b>Nm/A</b>	0.10
18 Speed torque gradient	<b>rpm/Nm</b>	691.7
19 Rotor inertia	<b>Kgcm<sup>2</sup></b>	2.77 x 10 <sup>-4</sup>
20 Weight	<b>Kg</b>	2.60

Thermal data		Modular system	
21 Ambient temperature	<b>°C</b>	40	

Mechanical data		Modular system	
22 Radial load [distance from flange]	<b>N [mm]</b>	350 [15]	
23 Radial play	<b>mm [g]</b>	0.025 [450]	
24 Axial end play	<b>mm [g]</b>	0.025 [450]	

Other data		Modular system	
25 Number of poles		8	
26 Winding type		Delta	
27 Hall effect angle (electrical angle)	<b>°</b>	120	
28 IP Rating		IP54	
29 Enclosure		Enclosed	
30 Insulation Class		B	

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

# PBL86 Product Overview

BLDC motor //  $\varnothing$ 86 mm frame



**PBL86-55** BLDC motor  
 $\varnothing$ 86 mm frame // 55 mm stack

**PBL86-80** BLDC motor  
 $\varnothing$ 86 mm frame // 80 mm stack

## 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 586 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° 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.

### 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

# PBL86 Modular System

Compatible gearboxes and accessories

**PBL86**  
BLDC motor

Voltage V	PBL86-55	PBL86-80
48	776624	776625

**GB9**  
Right-angle gearbox

Mounting flange: 781261

Modular range ratios available	
15:1 Bronze	735894
30:1 Bronze	735895
60:1 Bronze	735896

**Standard range ratios available :1**  
12.5, 15, 25, 30, 40, 60, 75

Available in both composite and bronze gears

**PGS90**  
Planetary gearbox

Mounting flange: 781259

Ratio :1	Composite / Steel
19	775882
77	775883
89	775884
294	775885
403	775886
517	775887

**GB12**  
Right-angle gearbox

Mounting flange: 781260

Modular range ratios available	
15:1 Composite	735900
30:1 Composite	735901
60:1 Composite	735902

**Standard range ratios available :1**  
12.5, 15, 19, 21, 25, 30, 50, 60, 75

Available in both composite and bronze gears

**PGS80**  
Planetary gearbox

Mounting flange: TBC

Ratio :1	Composite / Steel
4	776144
13	776145
15	776181
49	776182
55	776183
186	776184
210	776185

**Controllers**

Controller	
SC50/15	738590

**Brakes**

Mounting flange: 781284

Brake	
1 Nm	735914

**Encoders**

Mounting flange: 781284

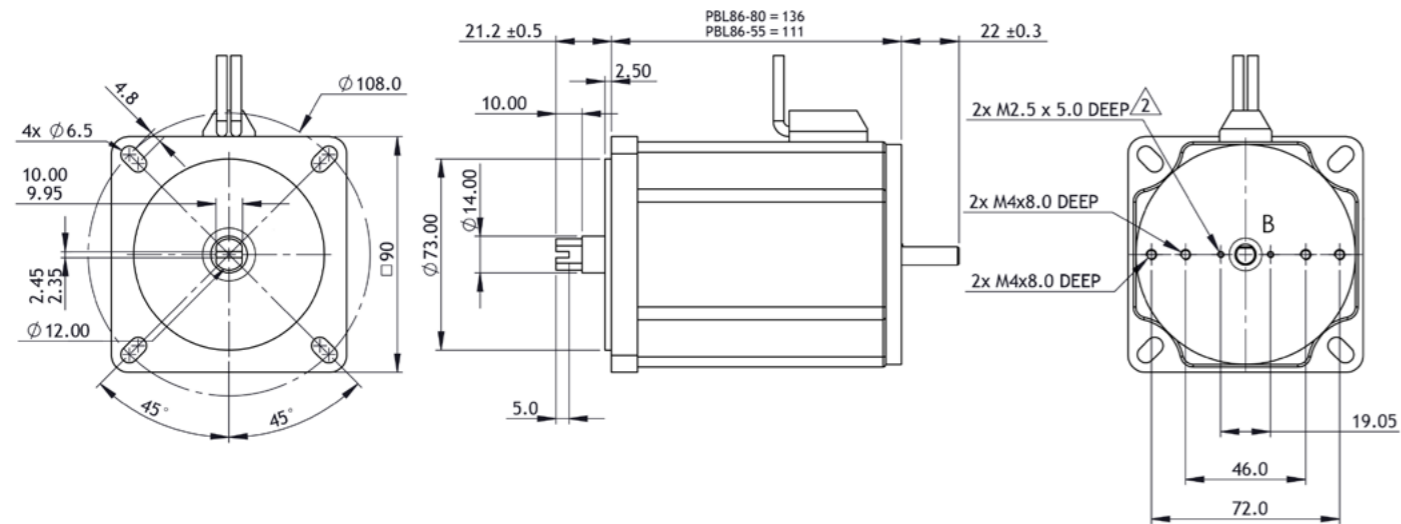
Encoder	
Incremental	735912

# PBL86-55

BLDC motor

Ø86 mm frame // 55 mm stack

all dimensions in mm



## Part number key

Modular	#####
Standard	#####
Calculated data	#####

Available on request: custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors

All products are built in accordance 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

## Technical data

1 Part number		<b>776624</b>
2 Nominal power	W	419
3 Nominal voltage	V	48
4 No load speed	rpm	4342
5 No load current	A	1.2
6 Nominal speed	rpm	4000
7 Nominal continuous torque (S1)	Nm	1.0
8 Nominal continuous current (S1)	A	10.3
9 Max Intermittent torque (S2 - 15 minutes)	Nm	1.75
10 Stall current	A	93
11 Stall torque	Nm	10.1
12 Stack length	mm	55
13 Maximum efficiency	%	85
14 Ra	Ω	0.087
15 Ri	mH	230.7
16 Speed constant	rpm/V	90.8
17 Torque constant	Nm/A	0.11
18 Speed torque gradient	rpm/Nm	439.5
19 Rotor inertia	Kgm <sup>2</sup>	2.04 x 10 <sup>-4</sup>
20 Weight	Kg	3.20

## Thermal data

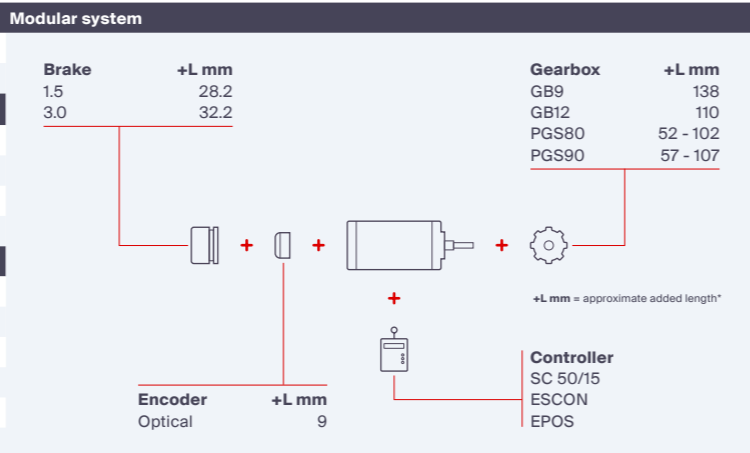
21 Ambient temperature	°C	40
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## Mechanical data

22 Radial load [distance from flange]	N [mm]	350 [15]
23 Radial play	mm [g]	0.06 [450]
24 Axial end play	mm [g]	0.08 [450]

## Other data

25 Number of poles		8
26 Winding type		Delta
27 Hall effect angle (electrical angle)	°	120
28 IP Rating		IP54
29 Enclosure		Enclosed
30 Insulation Class		B



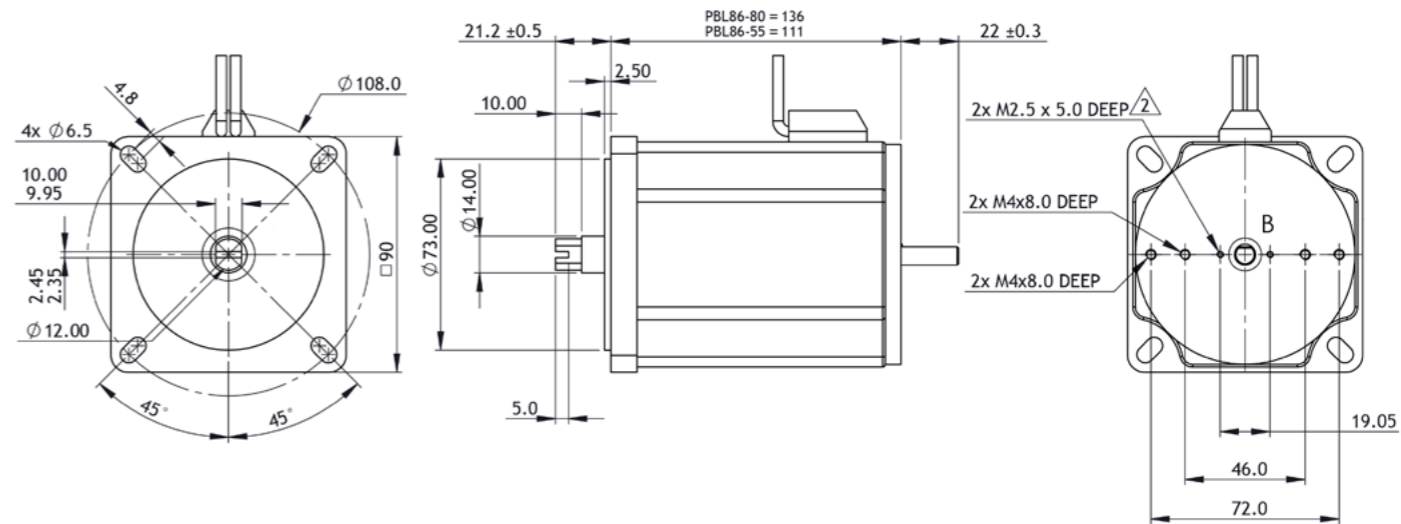
\*additional length may also be required for mounting flange between components

# PBL86-80

BLDC motor

Ø86 mm frame // 80 mm stack

all dimensions in mm



## Part number key

Modular	#####
Standard	#####
Calculated data	#####

Available on request: custom shaft length and diameter, shaft on both sides, special windings for specific voltages and speed, higher IP protection class, custom flanges and connectors

All products are built in accordance 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

## Technical data

1 Part number		<b>776625</b>
2 Nominal power	W	586
3 Nominal voltage	V	48
4 No load speed	rpm	4192
5 No load current	A	1.9
6 Nominal speed	rpm	4000
7 Nominal continuous torque (S1)	Nm	1.4
8 Nominal continuous current (S1)	A	14.4
9 Max Intermittent torque (S2 - 15 minutes)	Nm	2.45
10 Stall current	A	116
11 Stall torque	Nm	12.7
12 Stack length	mm	80
13 Maximum efficiency	%	83
14 Ra	Ω	0.057
15 Ri	mH	161.3
16 Speed constant	rpm/V	87.9
17 Torque constant	Nm/A	0.11
18 Speed torque gradient	rpm/Nm	345.6
19 Rotor inertia	Kgm <sup>2</sup>	2.9 x 10 <sup>-4</sup>
20 Weight	Kg	4.20

## Thermal data

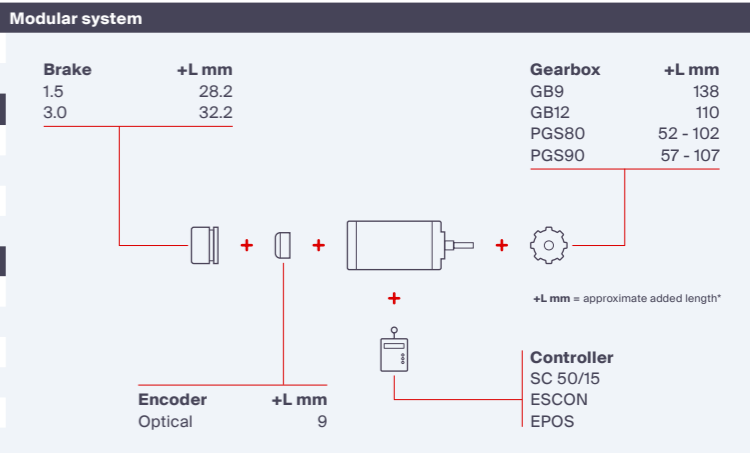
21 Ambient temperature	°C	40
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## Mechanical data

22 Radial load [distance from flange]	N [mm]	350 [15]
23 Radial play	mm [g]	0.06 [450]
24 Axial end play	mm [g]	0.08 [450]

## Other data

25 Number of poles		8
26 Winding type		Delta
27 Hall effect angle (electrical angle)	°	120
28 IP Rating		IP54
29 Enclosure		Enclosed
30 Insulation Class		B



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