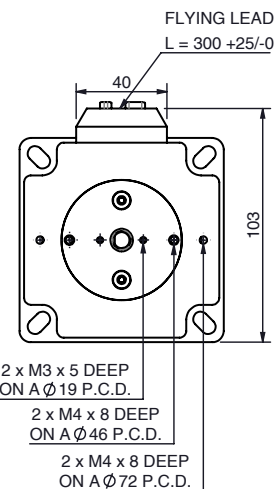
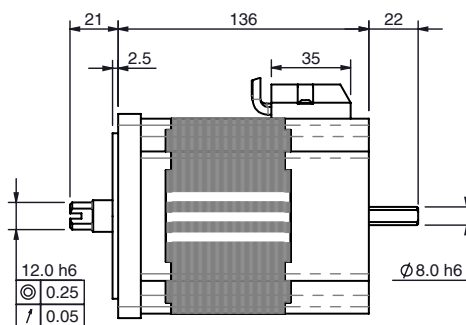
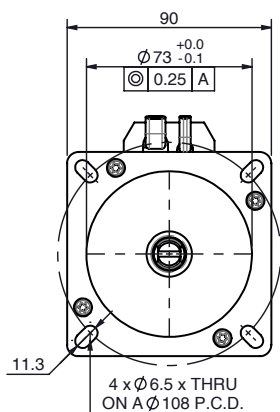


# PBL86-80 BLDC motor

Ø86 mm frame // 80 mm stack

**parvalux**  
by **maxon**



all dimensions in mm

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

Technical data			Connection details		
1 Part number		<b>776625</b>	<b>Lead colour</b>	<b>Lead gauge</b>	<b>Function</b>
2 Nominal power	<b>W</b>	586	Red	UL1569/26 AWG	VCC
3 Nominal voltage	<b>V</b>	48	Black	UL1569/26 AWG	GND
4 No load speed	<b>rpm</b>	4192	Blue	UL1569/26 AWG	Hall A
5 No load current	<b>A</b>	1.9	Green	UL1569/26 AWG	Hall B
6 Nominal speed	<b>rpm</b>	4000	White	UL1569/26 AWG	Hall C
7 Nominal continuous torque (S1)	<b>Nm</b>	1.4	Red	UL1569/14 AWG	Phase U
8 Nominal continuous current (S1)	<b>A</b>	14.4	Yellow	UL1569/14 AWG	Phase V
9 Max Intermittent torque (S2 - 15 minutes)	<b>Nm</b>	2.45	Black	UL1569/14 AWG	Phase W
10 Stall current	<b>A</b>	116			
11 Stall torque	<b>Nm</b>	12.7			
12 Stack length	<b>mm</b>	80			
13 Maximum efficiency	<b>%</b>	83			
14 Ra	<b>Ω</b>	0.057			
15 RI	<b>mH</b>	0.16			
16 Speed constant	<b>rpm/V</b>	879			
17 Torque constant	<b>Nm/A</b>	0.11			
18 Speed torque gradient	<b>rpm/Nm</b>	345.6			
19 Rotor inertia	<b>Kgm<sup>2</sup></b>	2.9 x 10 <sup>-4</sup>			
20 Weight	<b>Kg</b>	4.20			

Thermal data			Compatible products					
21 Ambient temperature	<b>°C</b>	40	<b>Gearbox</b>	<b>Page #</b>	<b>Brake</b>	<b>Page #</b>	<b>Controller</b>	<b>Page #</b>
			PGx70	250	1.5 Nm	80	SC 50/15	82
			GB12	68	2.0 Nm	259	EPOS	265
			GB9	70	4.0 Nm	260	ESCON	274
			GB65	71	Power-On	261		
					<b>Encoder</b>	<b>Page #</b>		
					Incr. 5-pin	78		
					Incr. 10-pin	78		
					Diff. 10-pin	79		
					Magnetic	256		
							<b>Key</b>	
							Standard combination	
							Modular combination	

Mechanical data		
22 Radial load [distance from flange]	<b>N [mm]</b>	350 [15]
23 Radial play	<b>mm [@g]</b>	0.06 [450]
24 Axial end play	<b>mm [@g]</b>	0.08 [450]

Other data		
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

# PBL86-80 combinations

Quickview - combination drawing and technical data

**parvalux**  
by **maxon**

Combination drawing		Technical data							
PBL86-80-PGX70		Gear material <sup>1</sup>	Comp.	Comp.	Comp.	Steel	Steel	Steel	
		Gear ratio [stages] <sup>2</sup>	:1	-	-	-	3.9 [1]	21 [2]	44 [2]
		Speed	rpm	-	-	-	1026	190	91
		Nominal torque	Nm	-	-	-	5.2	27.0	30.0
		Intermittent torque	Nm	-	-	-	9.1	37.5	37.5
PBL86-80-GB12		Gear material <sup>1</sup>	Comp.	Comp.	Comp.	Bronze	Bronze	Bronze	
		Gear ratio <sup>2</sup>	:1	15	30	60	15	30	60
		Speed	rpm	267	133	67	267	133	67
		Nominal torque	Nm	17.4	20.0	20.0	15.8	27.3	30.0
		Intermittent torque	Nm	30.5	32.0	32.0	27.6	47.8	48.0
PBL86-80-GB9		Gear material <sup>1</sup>	Comp.	Comp.	Comp.	Bronze	Bronze	Bronze	
		Gear ratio [stages] <sup>2</sup>	:1	15	30	60	15	30	60
		Speed	rpm	267	133	67	267	133	67
		Nominal torque	Nm	17.9	31.5	50.0	16.8	29.4	46.2
		Intermittent torque	Nm	31.2	55.1	80.0	29.4	51.5	80.9
PBL86-80-GB65		Gear material <sup>1</sup>	Bronze	Bronze	Bronze	Bronze	Bronze	-	
		Gear ratio <sup>2</sup>	:1	20	40	80	120	160	-
		Speed	rpm	200	100	50	33	25	-
		Nominal torque	Nm	22.7	42.6	78.4	100.8	96.3	-
		Intermittent torque	Nm	39.7	74.5	137.2	176.4	168.6	-

## Key

Standard combination / standard gear ratio

Modular combination / modular gear ratio

## Notes

<sup>1</sup> Comp. = Composite gears

<sup>2</sup> Full gear ratio options displayed on individual gearbox datasheets

- Technical data displayed above calculated based on **PBL86-80 48V 4000 rpm** motor. Intermittent torque displayed based on S2 - 15 minute duty cycle.
- Simplified drawings displayed above show overall envelope size of the combination. Please see individual motor and gearbox datasheets for detailed technical drawings.