Chong Kai Jie	A0306749U
Diwakar Vidya Adhavan	A0312132B
Li Zhuangda	A0308781X
Toh Ee Sen, Izen	A0309181H
Zhang Yuening	A0301319R

Can reduce torque by using a gearbox for gear reduction.
Important specs are 0.75Nm and 10W.

Motor selection thus requires 10W at least. Assume power loss through gearbox to be 90%, 10*100/90 = 11.11W required.

12w motor BLDC48-12L-031

BLDC48-12L-031

DC Motor, Brushless, Integrated Electronics, Brushless, 24 V, 4550 rpm, 0.03 N-m, 12 W, 54 mm

Manufacturer	PREMOTEC
Manufacturer Part No	BLDC48-12L-031
Order Code	4158428
Product Range	BLDC48-12
Technical Datasheet	Data Sheet

See all Technical Docs

Image is for illustrative purposes only. Please refer to product description.

Add to compare

Specification

Model		BLDC48-8L		BLDC48-12L	
Direction of rotation		cw	ccw	cw	ccw
12 Volt 2 wire version order code	BLDC48-	8L-005	8L-001	12L-025	12L-021
24 Volt 2 wire version order code	BLDC48-	8L-015	8L-011	12L-035	12L-031
12 Volt 4 wire version order code	BLDC48-	8L-007	8L-003	12L-027	12L-023
24 Volt 4 wire version order code	BLDC48-	8L-017	8L-013	12L-037	12L-033
Continuous output power	Watts	8		12	
Maximum speed	rpm	4300		4550	
Maximum speed @ rated torque	rpm	≥ 2900		3200	
Rated Torque	Nm	0.022		0.03	
Stall Torque	Nm	≥ 0.032		0.052	
Rotor inertia	$Kgcm^2$	0.22		0.3	
Motor Supply voltage	Vdc	12	24	12	24
Motor supply current @ rated torque	Amps	1.01	0.51	1.33	0.69
Peak current @ stall (internally limited)	Amps	1.4	0.7	1.95	0.95
Analogue speed control signal	V/1000 rpm	0.83 : only available on 4 wire versions			
Digital output speed monitor	ppr	6: only available on 4 wire versions			
Internal Over-temperature protection		standard			
Bearing type		Ball			
Maximum radial load	N	40 @ 15 mm from mounting face			

https://docs.rs-online.com/7f1f/0900766b80211138.pdf

Using rated torque,
0.75/0.03=25
25:1 gear reduction at motor shaft required to move the payload of 0.75Nm.
Possible to chain multiple compound gears together to form a 25:1 gearbox.
E.g. 2 sets of compound gears of 5:1 ratio. (50:10 teeth)