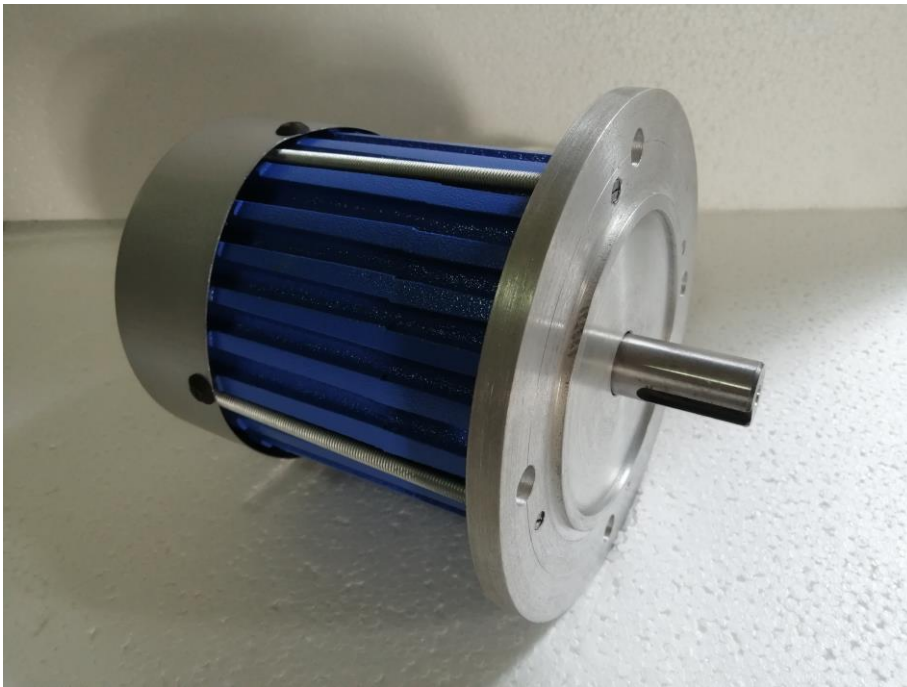


# 2.0 KW BLDC MOTOR SPECIFICATIONS



# TR120-2000W-3000RPM

## Highlights

- ✓ 48VDC, 2000Watts (Output), 3000 RPM Brushless DC Motor
- ✓ In-runner with shaft output and keyway
- ✓ External Control
- ✓ Built in Hall Sensors with Hall Effect Angle of 120 degrees
- ✓ Insulation Class F
- ✓ Operating temperature up to +80°C ( Also available up to +150°C )
- ✓ 1 year warranty on motor against any manufacturing defects
- ✓ Made in India
- ✓ Customization is possible.

## Specifications

Parameter	Value		
Rated Voltage (VDC)	48	60	72
Rated Current (A)	48	38	32
Rated Power (Output)	2000 Watts		
Rated Speed (RPM)	3000 RPM		
Rated Torque (Nm)	6.45 Nm		
Peak Torque (Nm)	16.4 Nm		
No Load Current (A)	< 4 A		
No Load RPM	4300 RPM		
Current Density (A/square mm)	4.5 A/square mm		
Variable Speed Range	0-5000 RPM		
Motor Mounting	Flange / Face only		
Frame Size	IEC90B5*		
Motor Diameter	160 mm		
Motor Length (ML)	200 mm (With cooling fan)		
Shaft Diameter	24 mm		
Shaft Length	50 mm		
Finish	Powder Coated		
Weight	9.45 Kgs (Approximate)		

Note: Please allow 1 mm tolerance for all external motor dimensions



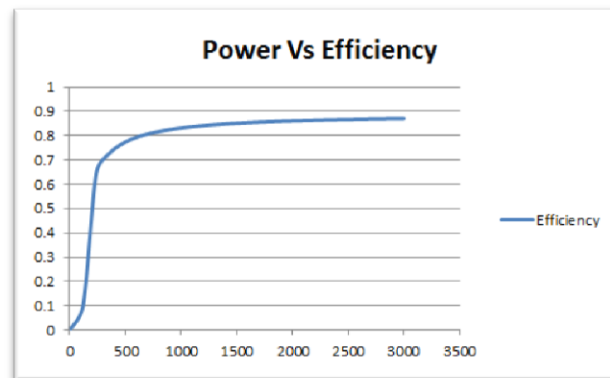
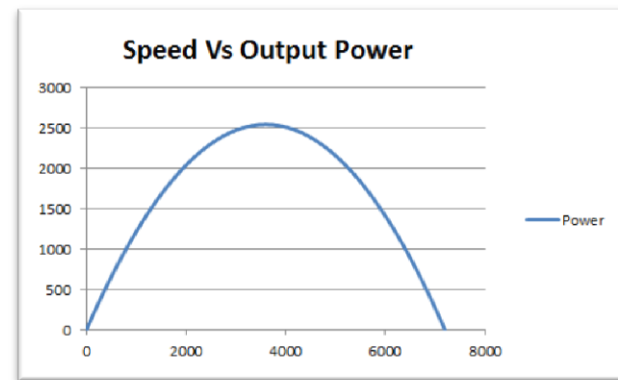
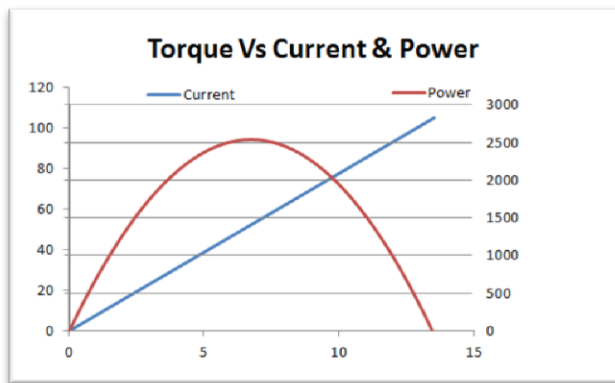
**\*Note:**

The following IEC frame sizes are also available

- i) IEC 71B14 with 14 mm shaft
- ii) IEC 80B5 with 19 mm shaft
- iii) IEC 80B14 with 19 mm shaft
- iv) IEC 90B5 with 24 mm shaft

Please refer to the drawings for exact dimensions and specify the frame size while ordering.

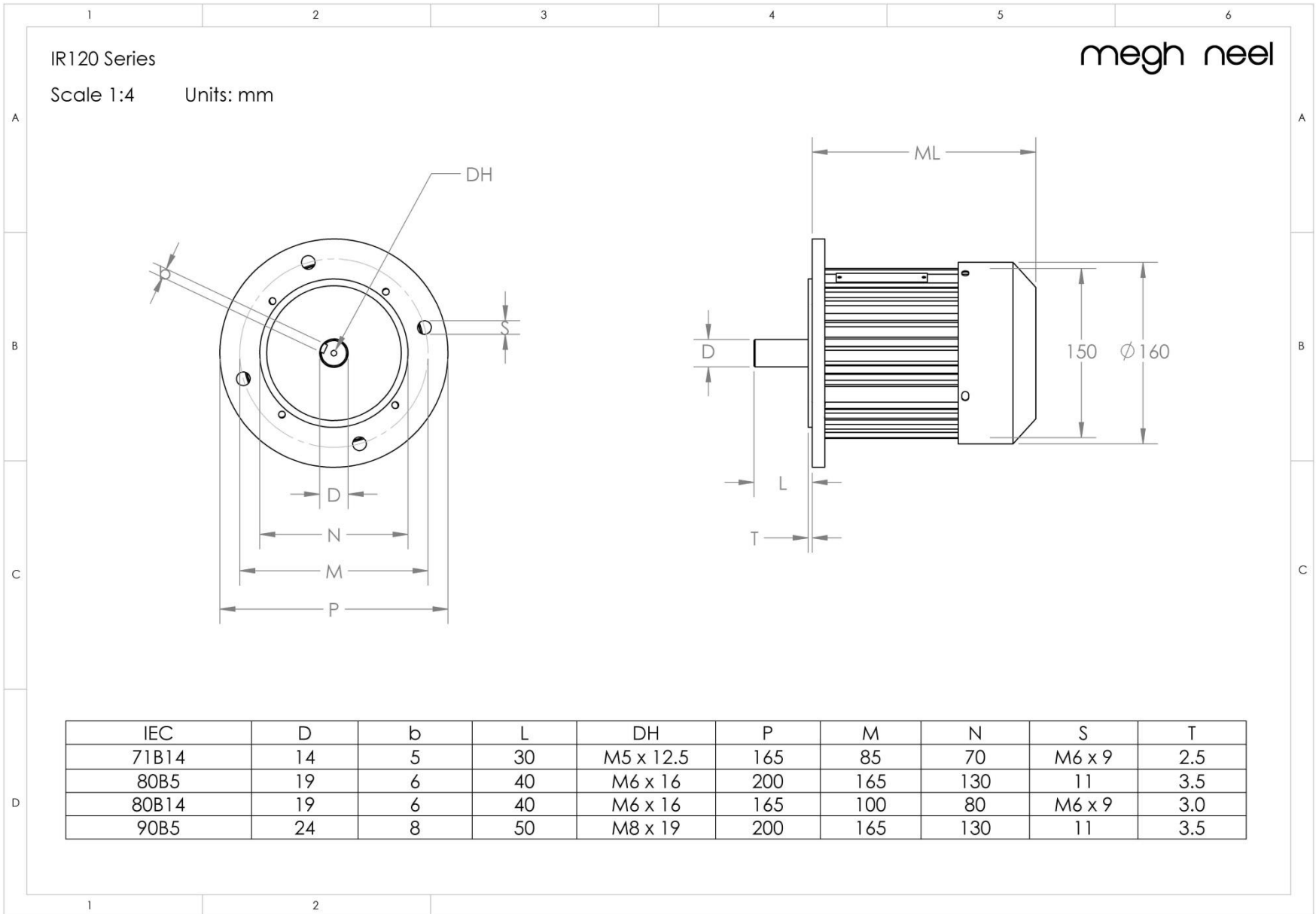
## Performance Curves\*



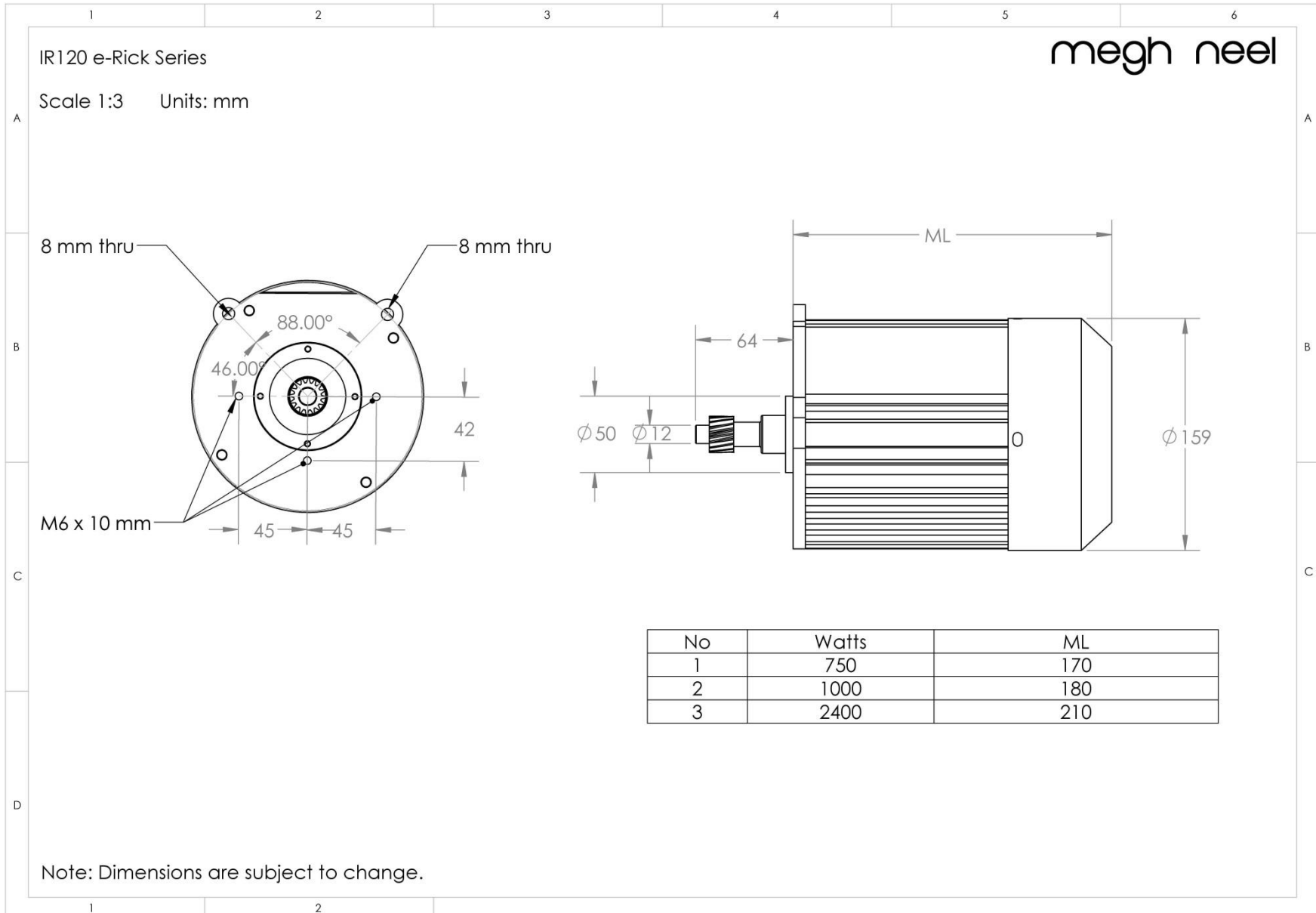
Note: Values shown are theoretically derived using formulas and may vary from actuals.



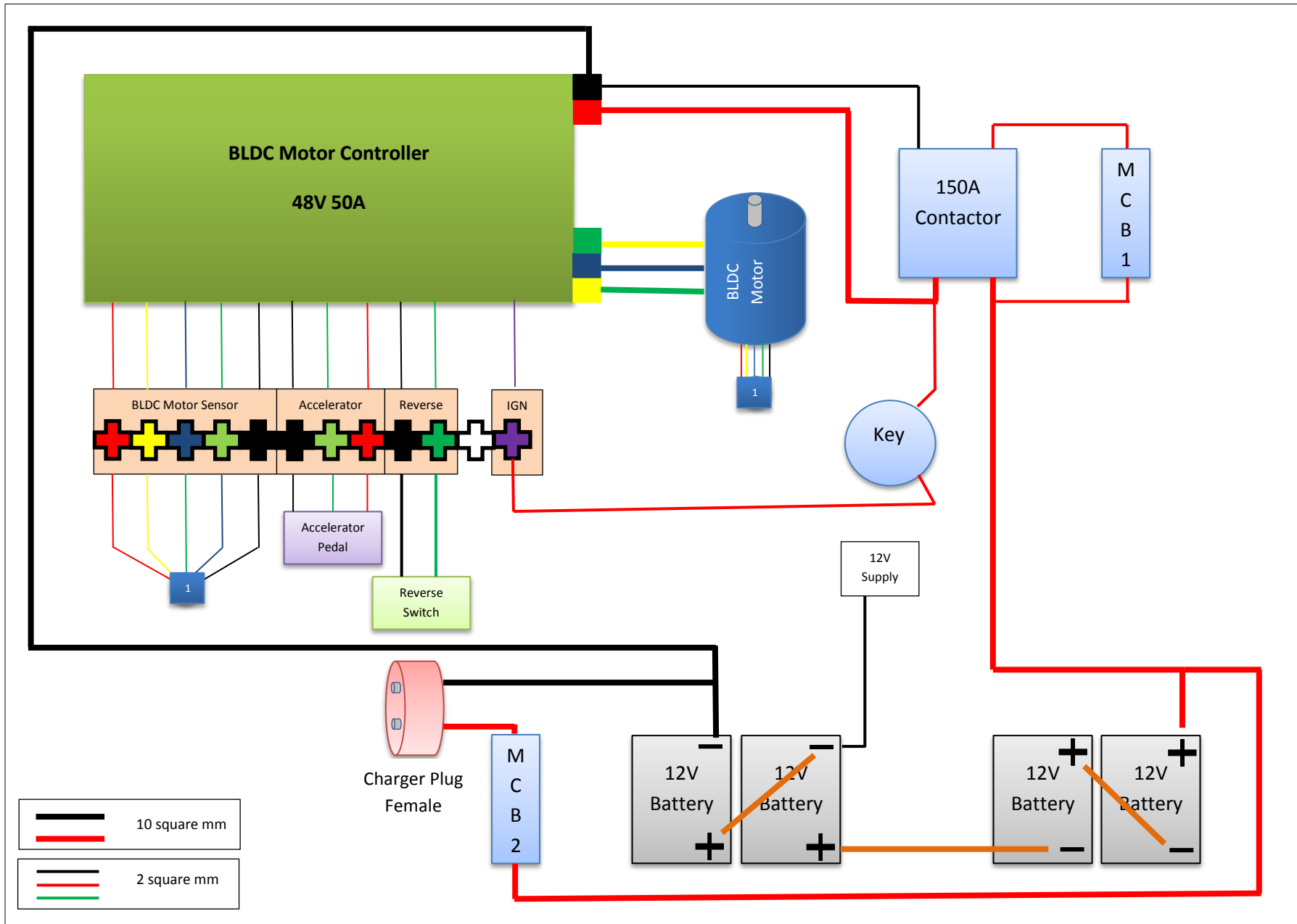
# Dimensions IEC Format



# Dimensions e-Rickshaw Series



# Wiring Diagram



# Controller-Motor Connections

**Ignition:** Connect the 48V Battery Positive to the Controller Purple Wire Bullet Connector via a key switch.

## Motor Direction:

Connect the Controller Phase Wires and the Hall Sensor wires to the respective wires from the motor as given below to achieve the desired direction

### Direction – Clockwise (From the Shaft Side)

Motor Phase Connection	Yellow	Blue	Green		
Controller Phase Connection	Green	Blue	Yellow		
Motor Hall Sensor Connection	Yellow	Blue	Green	Red	Black
Controller Hall Sensor Connection	Yellow	Green	Blue	Red	Black

### Direction – Anti-Clockwise (From the Shaft Side)

Motor Phase Connection	Yellow	Blue	Green		
Controller Phase Connection	Yellow	Blue	Green		
Motor Hall Sensor Connection	Yellow	Blue	Green	Red	Black
Controller Hall Sensor Connection	Blue	Green	Yellow	Red	Black

## Throttle / Accelerator

Connect the 3 pin female connector (Red, Black, Green) to the throttle/accelerator plug. Ensure that the color codes match while connecting.

Red: +5 VDC, Black: Ground, Green: 0-3.4 VDC



## Reverse

Option 1: From the BLDC Motor Controller, use the 2 pin female connector (Yellow/Green, Black) wires. Short the two wires using a switch or Joystick to achieve reverse direction. In this option, the motor run only at half the rated RPM of the motor.

Option2: From the BLDC Motor Controller, use the 2 grey colored wires. To achieve reverse, follow the below actions to achieve reverse at maximum rated RPM of the motor:-

- i) Switch OFF ignition switch
- ii) Short the two grey colored wires using a switch or Joystick
- iii) Switch ON ignition switch and apply throttle to run the motor in the reverse direction. Note that the motor runs at maximum rated RPM of the motor.





## Important Instructions for handling Megh Neel 2000 Watts (Inner runner, 48V/60V, 47A/39A, 3000 RPM)

1. Handle the motor with due care. Please ensure the following
  - a. Do not drop the motor or cause severe physical shock to the outer casing of the motor.
  - b. Do not use a hammer on the motor to prevent damage to the outer casing and the flange that mounts the motor. Use a wooden mallet.
  - c. While installing the motor do not use a hammer on the shaft to prevent the shaft from bending or to prevent damage to the wires.
  - d. Do not lift the motor using the wires as it can damage the wires/short the motor windings.

Failure to ensure the above instructions can cause severe damage to motor.

2. Do not attempt to open the motor casings as special fixtures are required to open the same without causing any damage. In case of any problems with the motor - contact us. Do not attempt to service the motor by using the services of local technicians / consultants.
3. Do not attempt to run the motor using the wrong hall sensor or phase wire sequence. As under extreme conditions it can cause the following
  - a. Heat the motor windings
  - b. Fail the motor controller
4. Please ensure that motor is not overloaded. Use appropriate gear ratios to ensure that the motor is not loaded above the rated limit during normal operating condition.



## Contact Information

### Registered Office:

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