

# NOVA 15-50-B4 P30 WK iMST 80-240

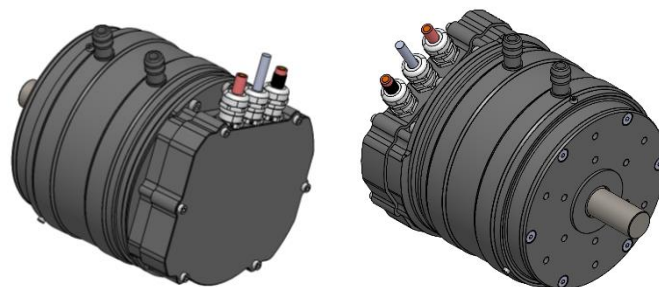
Inrunner BLDC motor with closed housing

## Overview

The NOVA 15 Water-Cooled ("WK") with integrated electronic speed controller MST 80-240 ("iMST 80-240") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications.

## Features

- Super robust housing for harsh environments
- Wear-free position and temperature sensors included in standard
- Integrated Plettberg ESC (MST 80-240)



## Specifications Motor

|  |  |       |
|--|--|-------|
| Part number  | 02-044.050.01-000-389  |       |
| Peak output power                                  | 15   | kW    |
| Peak torque (max. 5s)                              | 40   | Nm    |
| Max. speed   | 8,000  | rpm   |
| Voltage range                                      | 15-80  | V     |
| Speed constant (kV)                                | 99   | rpm/V |
| Diameter (ex. water inlet)                         | 140  | mm    |
| Length   | 127.5  | mm    |
| Weight   | 3,800  | g     |
| Protection class                                   | IP54   |       |
| Mounting   | Front  |       |
| Cooling  | Water cooled   |       |
| Ambient temperature range                          | -20 to +60   | °C    |
| Max. temperature of stator (as measured by sensor) | +100   | °C    |
| Position sensor types                              | Hall effect sensor with UVW-commutation signals  |       |
| Temperature sensor                                 | NTC 47 kΩ  |       |
| Number of poles                                    | 30   |       |
| Number of windings                                 | 4  |       |
| Recommendations for water cooling                  | Flow of 7 liters-per-minute at max. 40°C inlet temp.; coolant pressure shall not exceed 2 bar/ 29 PSI. |       |

## Specifications Integrated MST 80-240<sup>(1)</sup>

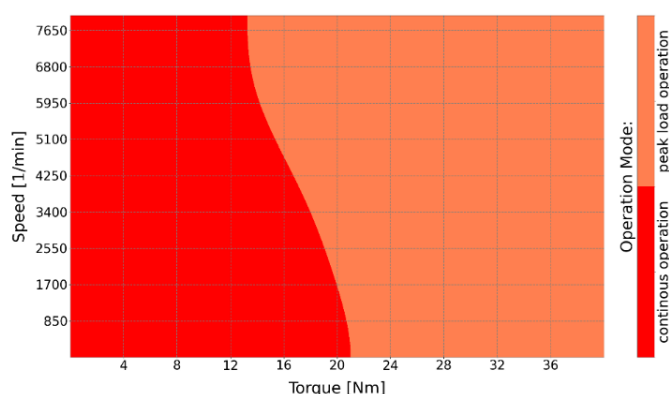
|                      |  |                    |                 |
|----------------------|--|--------------------|-----------------|
| Continuous power     | 17.6   | kW                 |                 |
| Electric RPM limit   | 240,000  | 1/min              |                 |
| Voltage range        | 15-80  | V                  |                 |
| Continuous current   | 220 A (at 25°C ambient temperature)  |                    |                 |
|                      | 175 A (at 50°C ambient temperature)  |                    |                 |
|                      | 125 A (at 75°C ambient temperature)  |                    |                 |
| Maximum current      | 400 A (max. 2 seconds)   |                    |                 |
| Interfaces           | RS232 plus either CAN bus 2.0A or PWM or analog (please provide preference upon placing order) |                    |                 |
|                      | DC power cable length  | 300 <sup>(2)</sup> | mm              |
|                      | Recommended power cable extension  | 16                 | mm <sup>2</sup> |
|                      | 5  | AWG                |                 |
| Control cable length | 900  | mm                 |                 |

### Notes:

<sup>(1)</sup> Please refer to MST operating manual for more details.

<sup>(2)</sup> For extension of DC power cable a **cable extension kit with capacitor** is required, depending on operating voltage and current. The total length of all battery connection cables (positive and negative together) must not exceed 1 meter. Please refer to MST operating manual for more details.

## Heatmap



Note: Assuming water temperature of 40°C and 7 l/min flow.

## Complementary Products

- Cable extension kit with matching capacitor (2,000 mm)

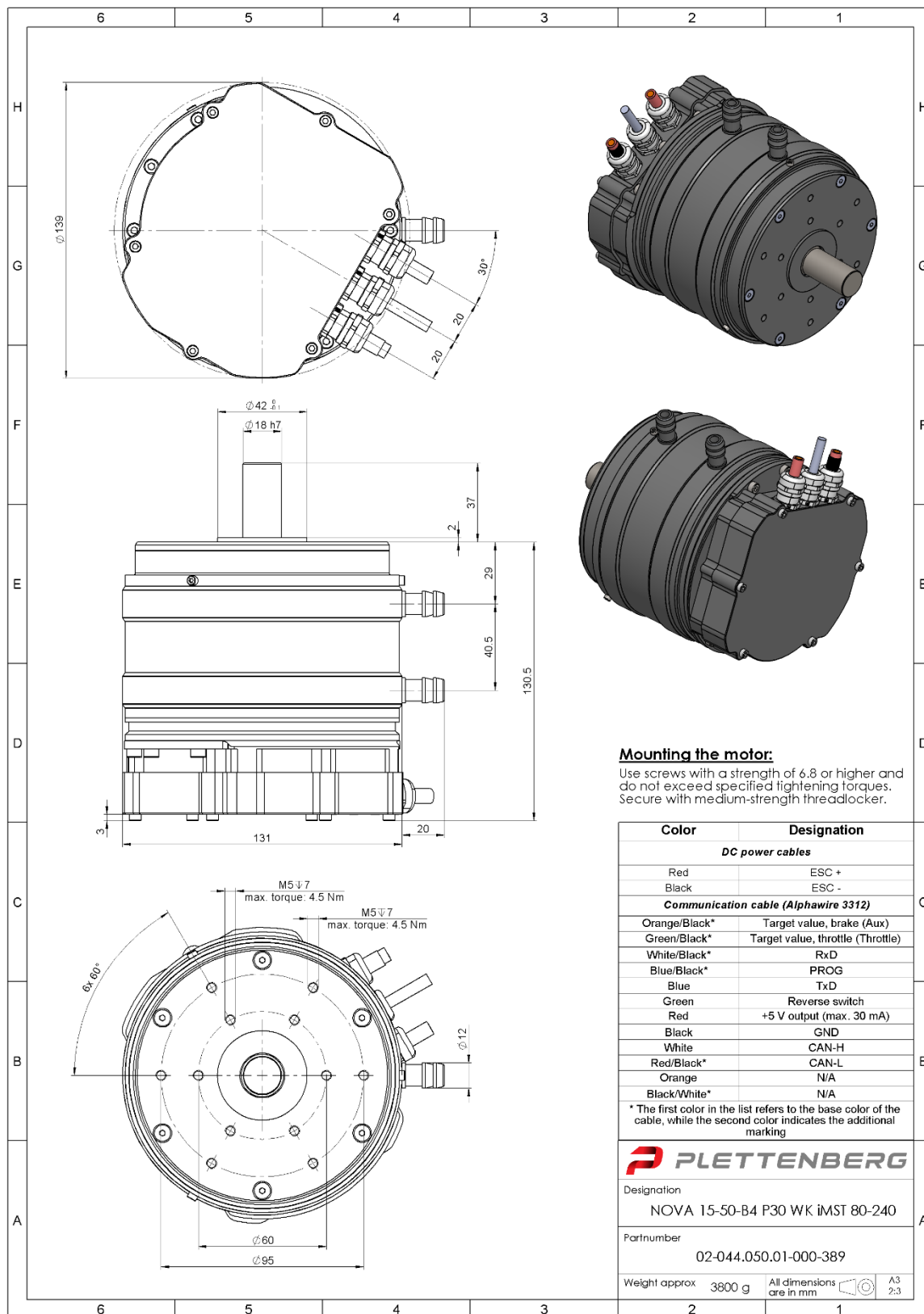
## Options & Customization

- Custom winding/kV versions
- MIL-STD 810H or RTCA DO160 qualification
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization
- High RPM versions



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**Mounting the motor:**

Use screws with a strength of 6.8 or higher and do not exceed specified tightening torques. Secure with medium-strength threadlocker.

