



## Plettenberg Drive Solutions

# COTS PRODUCT BROCHURE

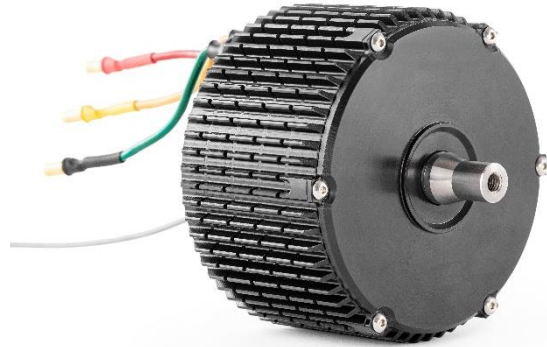


## COTS SOLUTIONS

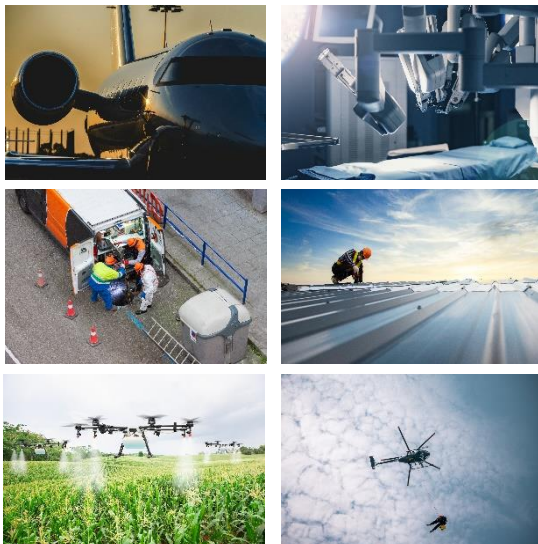
Plettenberg is a leading developer and manufacturer of rugged electric drive solutions for mission critical applications. Our portfolio of commercial-off-the-shelf ("COTS") drive solutions has been designed to cover a wide range of applications in demanding end-markets, such as aerospace, uncrewed systems, defense, med-tech, maritime, racing and many more.

### COTS Portfolio

Our portfolio of COTS motors comprises rugged inrunner BLDC motors of our NOVA and ADVANCE series as well as outrunner BLDC motors from our ORBIT series. In addition, we provide a portfolio of matching ESCs and mission critical accessories. Our COTS products are designed for application in the harshest environmental conditions. This allows for achieving the best reliability and minimizing total-cost-of-ownership.



Our COTS products are standard solutions in predetermined configurations and with shortened delivery times. If a COTS product is not suitable for the envisaged application, Plettenberg offers modified-off-the-shelf ("MOTS") solutions. MOTS motors come with custom winding and electrical design support from our engineering team. If a MOTS solution is not sufficient and significant tailorization is required, a fully-custom ("FC") solution can be offered. FC drive solutions are highly application specific and can be adjusted to complex requirements. This can include mechanical customization, use of special materials and connectors for aerospace or maritime applications, higher IP protection, high/low temperature and ultra-high RPM versions, frameless kits and many more. MOTS and FC products have longer delivery times than COTS products and are ideally suited for complex projects with demanding requirements.



### Applications

It is our mission to help our customers to be successful, by solving their most demanding challenges with our cutting-edge tailored drive solutions and by providing the best power-to-weight-to-robustness ratio on the market. Plettenberg products have been used in mission critical applications for +30 years. Our products are used in applications such as propulsion systems for (un)crewed systems, pumps for aerospace, winch systems for helicopters, drives for robotics, med-tech, industrial tools, racing and many more.

## COTS PRODUCT OVERVIEW

Detailed data sheets are available for all COTS products.

### NOVA

#### Inrunner BLDC motors with closed housing design

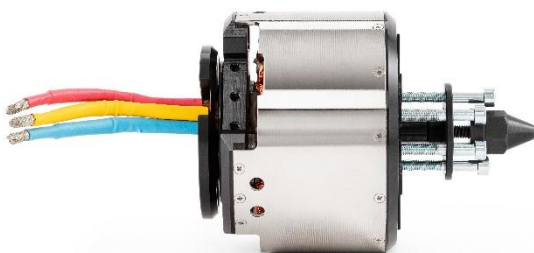
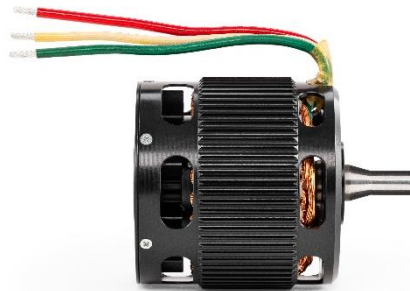
Our NOVA series of inrunners feature an extra rugged closed housing design with ingress protection class of IP54. The motors can be applied in the harshest environments, such as desert, snow and sea water operations. At the same time, the NOVA motors are designed to be extremely efficient and have market leading power-to-weight-to-robustness ratios. Position and temperature sensors for health monitoring are included in standard. Available as COTS in the power range from below 2 kW to 30 kW.



### ADVANCE

#### Inrunner BLDC motors with open housing design

Our ADVANCE series of inrunners feature a weight-optimized open housing design. This allows for best-in-class power-to-weight ratios and makes the motors very suitable for professional drones and other applications with constraints in space, weight and power supply. Available as COTS in the power range from 1 kW to 5 kW.



### ORBIT

#### Series of Outrunner BLDC motors

Our ORBIT series of outrunners have been developed for applications with constraints in space, weight and power supply. Compared to other outrunners in the market, the ORBIT series is built much more robust and features a three-bearing design. Available as COTS in the power range from below 5 kW to 11 kW.

### MST

#### Series of high-performance ESCs

Our ESC series is named MST and is available in a wide range of powers. Our top ESCs can handle voltages of up to 400 V and currents of up to 350 A. All our ESCs are rugged in design and can be applied in harsh environments. They are also weight optimized and have leading power-to-weight ratios.



# **ADVANCE SERIES**

**Inrunner BLDC motors with open housing design**

## ADVANCE Series

# ADVANCE 1-30-B12 P14

Inrunner BLDC motor with open housing

### Overview

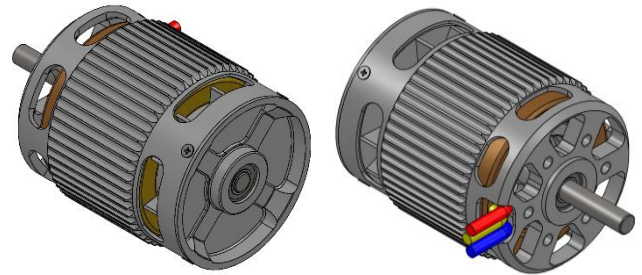
The ADVANCE 1 is from our family of weight optimized inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Ultra-light housing for weight sensitive applications
- Integrated fan, providing superior cooling even in airflow constrained applications
- Designed for use with sensorless ESCs
- High torque density

### Specifications

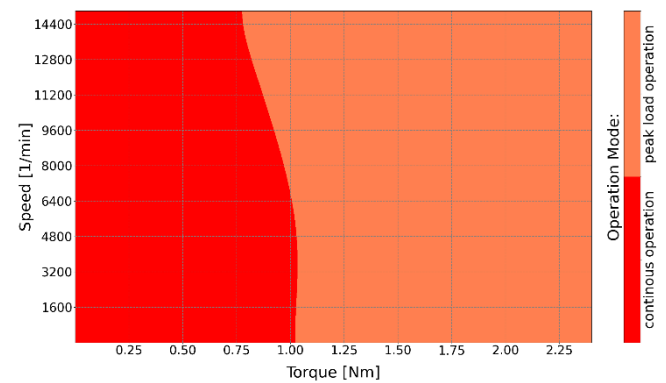
Part number	02-045.030.00-000-021	
Peak output power	2	kW
Peak torque (max. 5s)	2.4	Nm
Max. speed	15,000	rpm
Voltage range	15-40	V
Speed constant (kV)	430	rpm/V
Diameter	55	mm
Length	64	mm
Weight	420	g
Phase cable length	100	mm
Recommended phase cable extension	2.5	mm <sup>2</sup>
	13	AWG
Protection class	IP20	
Mounting	Front	
Direction of rotation	Both	
Cooling	Air cooled	
Ambient temperature range	-20 to +60 °C	
Number of poles	14	
Number of windings	12	
Peak thrust	10 kg with 18x6" prop	



### Complementary Products

- Sensorless third party ESCs (e.g. Hargrave/APD)

### Heatmap



Note: Assuming 25°C ambient temperature.

### Options & Customization

- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Removal of integrated fan

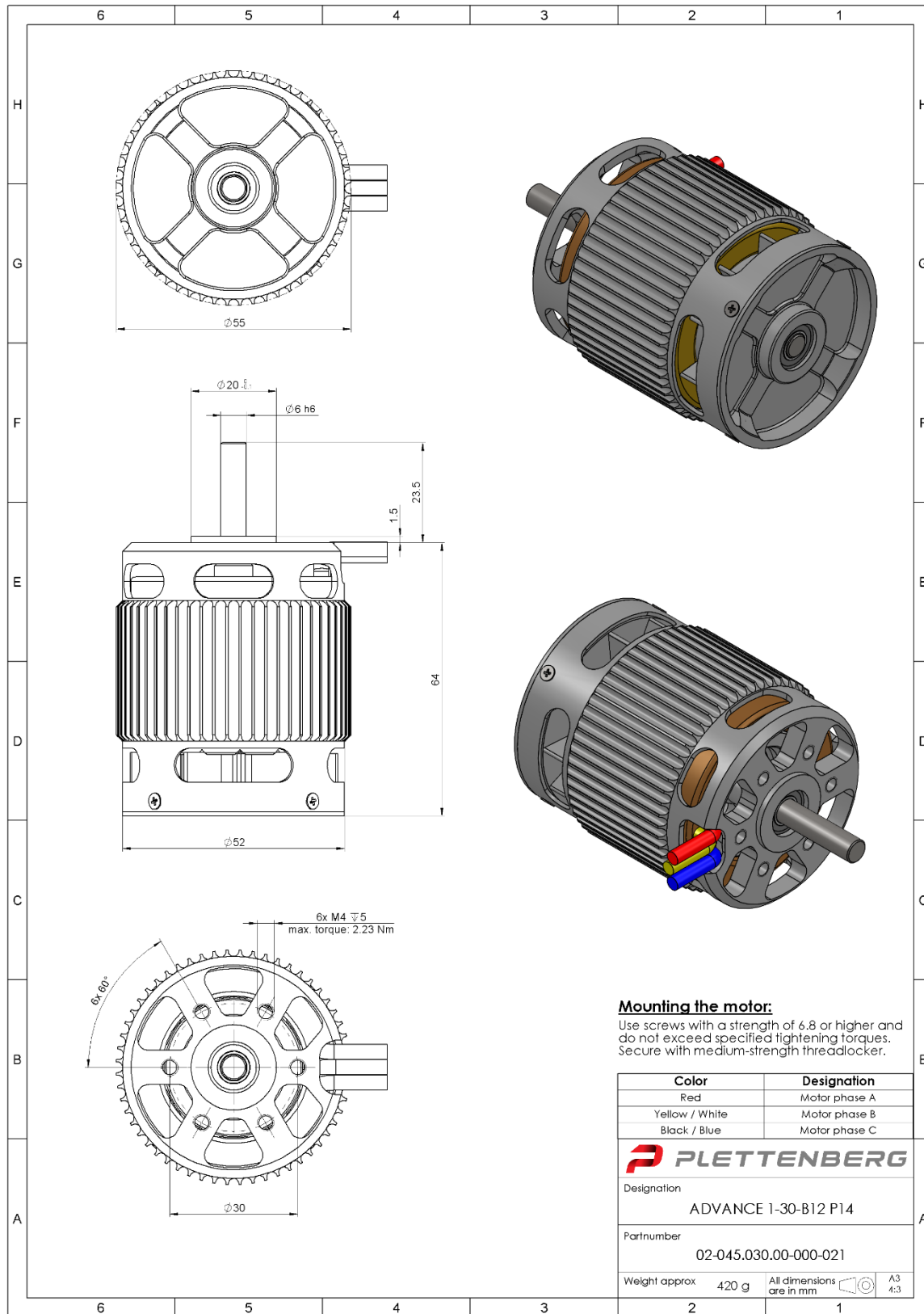


ADVANCE Series



# ADVANCE 1-30-B12 P14

Inrunner BLDC motor with open housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## ADVANCE Series



# ADVANCE 1-30-B20 P14

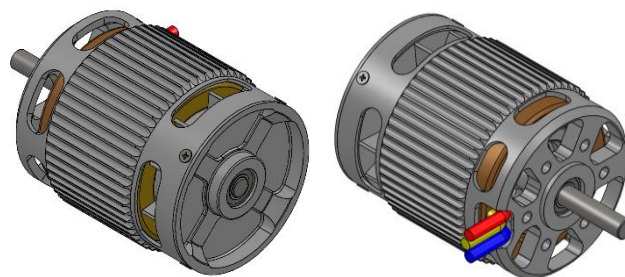
Inrunner BLDC motor with open housing

## Overview

The ADVANCE 1 is from our family of weight optimized inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Ultra-light housing for weight sensitive applications
- Integrated fan, providing superior cooling even in airflow constrained applications
- Designed for use with sensorless ESCs
- High torque density



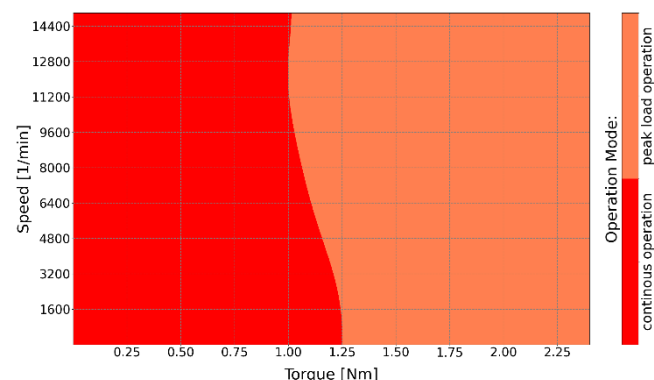
## Specifications

Part number	02-045.030.00-000-022	
Peak output power	2	kW
Peak torque (max. 5s)	2.4	Nm
Max. speed	15,000	rpm
Voltage range	20-60	V
Speed constant (kV)	255	rpm/V
Diameter	55	mm
Length	64	mm
Weight	420	g
Phase cable length	100	mm
Recommended phase cable extension	1.5	mm <sup>2</sup>
	16	AWG
Protection class	IP20	
Mounting	Front	
Direction of rotation	Both	
Cooling	Air cooled	
Ambient temperature range	-20 to +60 °C	
Number of poles	14	
Number of windings	20	
Peak thrust	10 kg with 18x6" prop	

## Complementary Products

- Sensorless third party ESCs (e.g. Hargrave/APD)

## Heatmap



Note: Assuming 25°C ambient temperature.

## Options & Customization

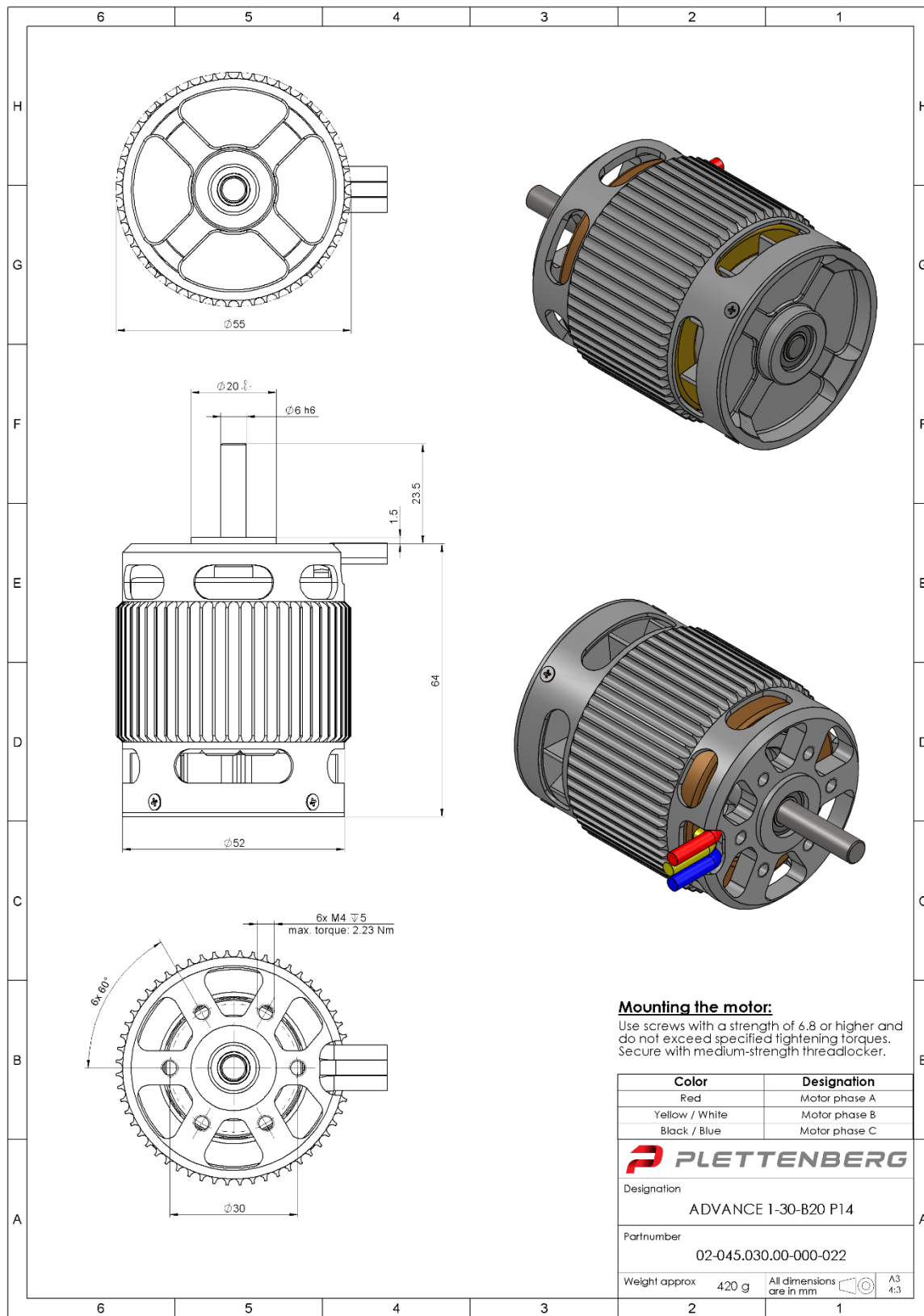
- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Removal of integrated fan

Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# ADVANCE 1-30-B20 P14

Inrunner BLDC motor with open housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.





## ADVANCE Series

# ADVANCE 5-50-B6 P20

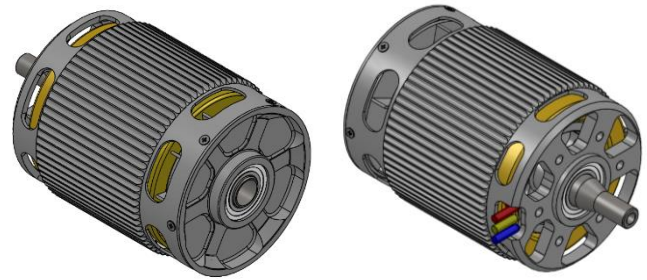
Inrunner BLDC motor with open housing

### Overview

The ADVANCE 5 is from our family of weight optimized inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Ultra-light housing for weight sensitive applications
- Integrated fan, providing superior cooling even in airflow constrained applications
- Designed for use with sensorless ESCs
- High torque density



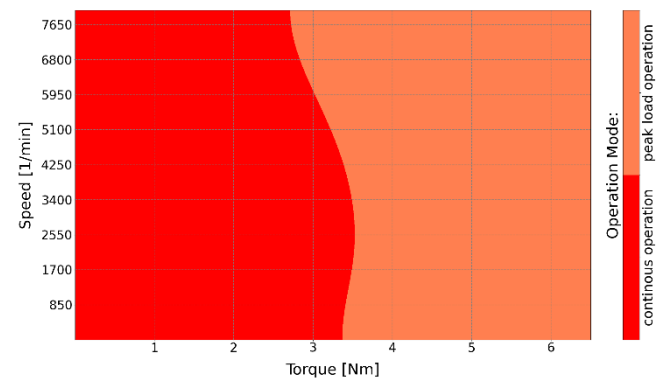
### Specifications

Part number	02-029.050.00-000-051	
Peak output power	5	kW
Peak torque (max. 5s)	6.5	Nm
Max. speed	8,000	rpm
Voltage range	15-40	V
Speed constant (kV)	210	rpm/V
Diameter	68	mm
Length	85	mm
Weight	820	g
Phase cable length	100	mm
Recommended phase cable extension	6	mm <sup>2</sup>
	10	AWG
Protection class	IP20	
Mounting	Front	
Direction of rotation	Both	
Cooling	Air cooled	
Ambient temperature range	-20 to +60 °C	
Number of poles	20	
Number of windings	6	
Peak thrust	21 kg with 24x8.1" prop	

### Complementary Products

- Sensorless third party ESCs (e.g. Hargrave/APD)
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature.

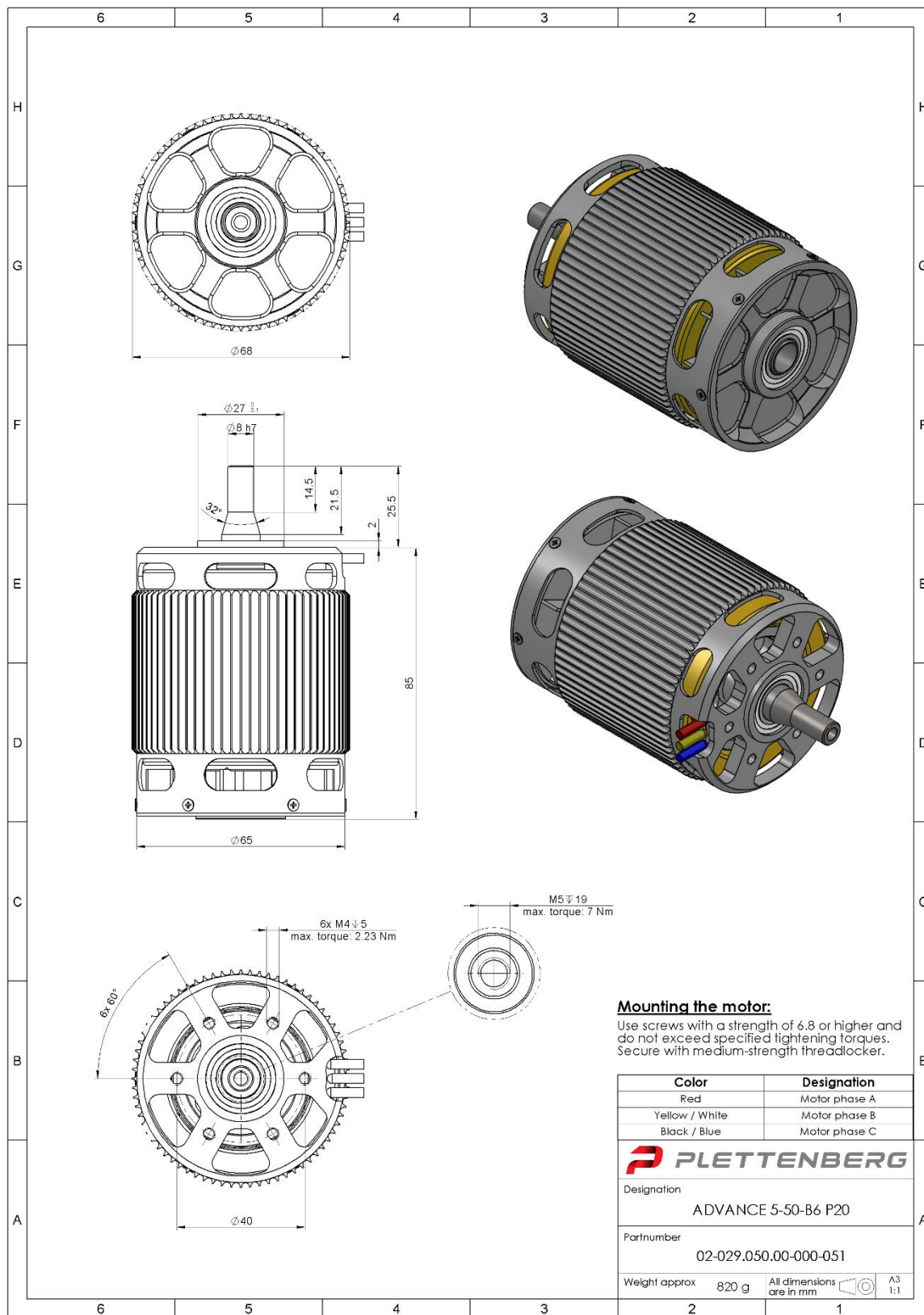
### Options & Customization

- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Removal of integrated fan



# ADVANCE 5-50-B6 P20

Inrunner BLDC motor with open housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## ADVANCE Series

# ADVANCE 5-50-B10 P20

Inrunner BLDC motor with open housing

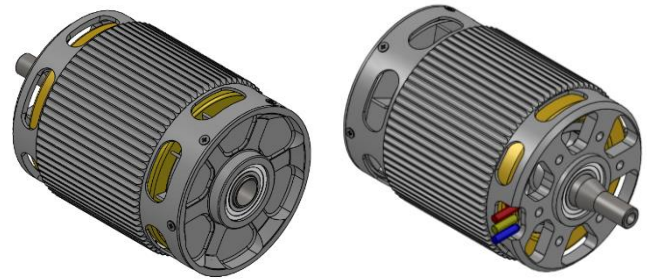


### Overview

The ADVANCE 5 is from our family of weight optimized inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Ultra-light housing for weight sensitive applications
- Integrated fan, providing superior cooling even in airflow constrained applications
- Designed for use with sensorless ESCs
- High torque density



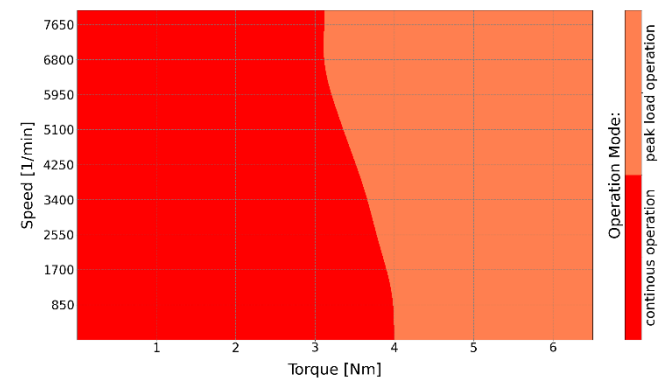
### Specifications

Part number	02-029.050.00-000-052	
Peak output power	5	kW
Peak torque (max. 5s)	6.5	Nm
Max. speed	8,000	rpm
Voltage range	15-60	V
Speed constant (kV)	132	rpm/V
Diameter	68	mm
Length	85	mm
Weight	820	g
Phase cable length	100	mm
Recommended phase cable extension	4	mm <sup>2</sup>
	12	AWG
Protection class	IP20	
Mounting	Front	
Direction of rotation	Both	
Cooling	Air cooled	
Ambient temperature range	-20 to +60	°C
Number of poles	20	
Number of windings	10	
Peak thrust	21 kg with 24x8.1" prop	

### Complementary Products

- Sensorless third party ESCs (e.g. Hargrave/APD)
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



### Options & Customization

- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Removal of integrated fan

Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.

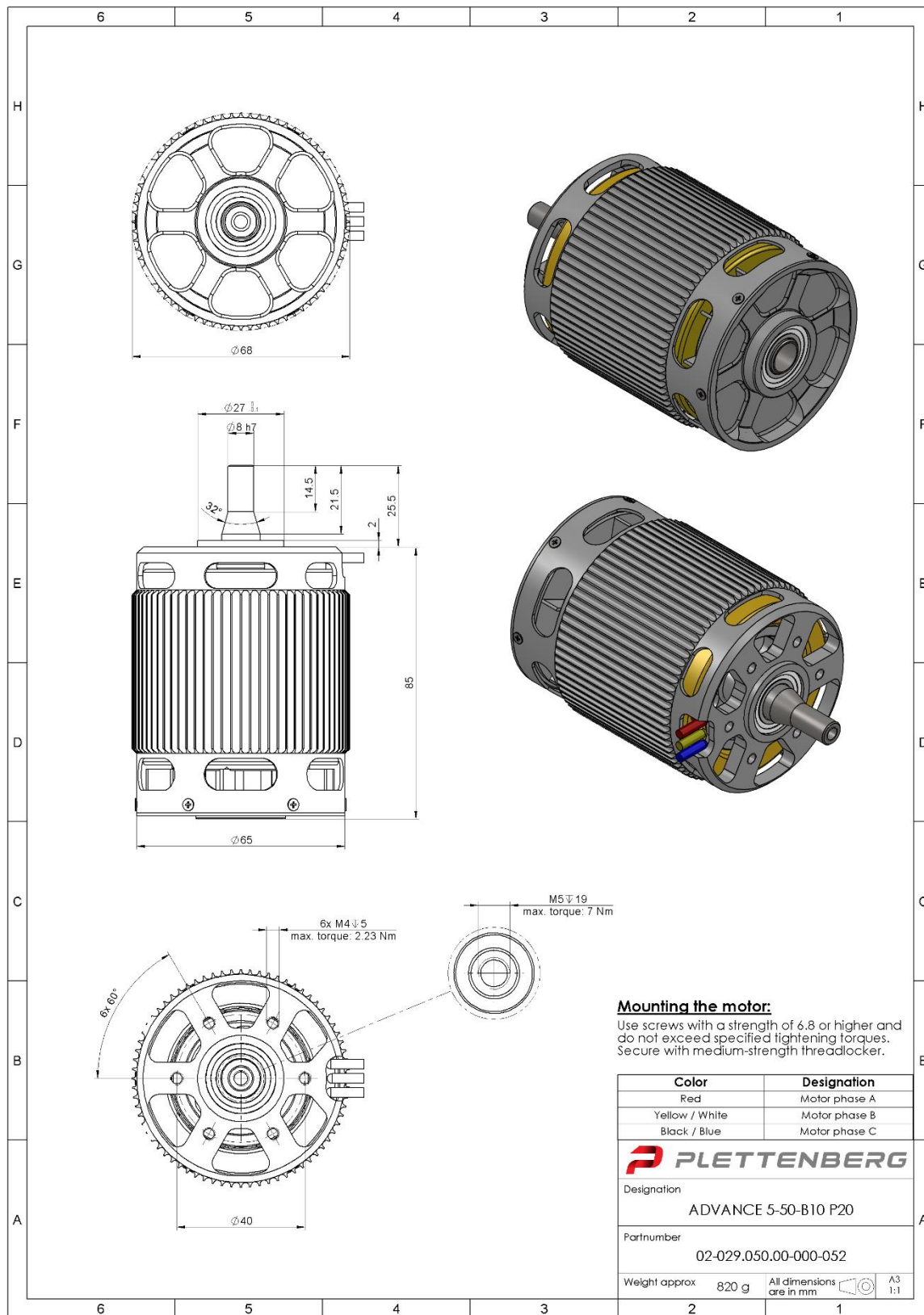


ADVANCE Series



# ADVANCE 5-50-B10 P20

Inrunner BLDC motor with open housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# **NOVA SERIES**

**Inrunner BLDC motors with closed housing design**

## NOVA Series

# NOVA 4-30-B8 P20 LW

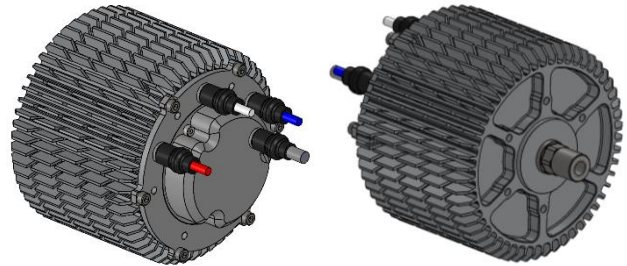
Inrunner BLDC motor with closed housing

### Overview

The NOVA 4 Light-Weight (“LW”) is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems, aerospace and racing.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-029.030.12-000-047	
Peak output power	2.4	kW
Peak torque (max. 5s) <sup>(1)</sup>	4	Nm
Max. speed	11,000	rpm
Voltage range	15-36	V
Speed constant (kV)	279	rpm/V
Diameter	79	mm
Length	61	mm
Weight	700	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	4	mm <sup>2</sup>
	12	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	20	
Number of windings	8	
Peak thrust	12.5 kg with 22x7.4" prop	

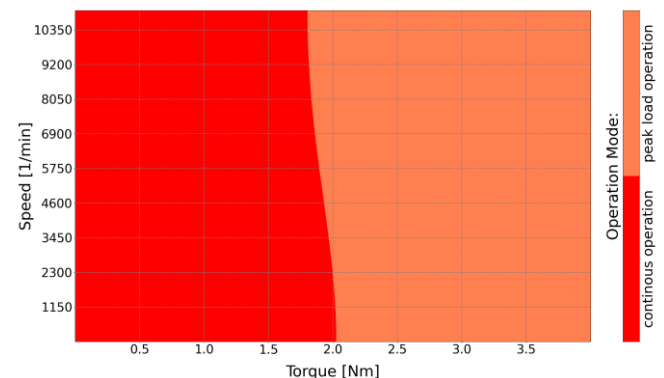
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 10mm
- Plettenberg ESCs: MST 60-80, MST 60-130
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

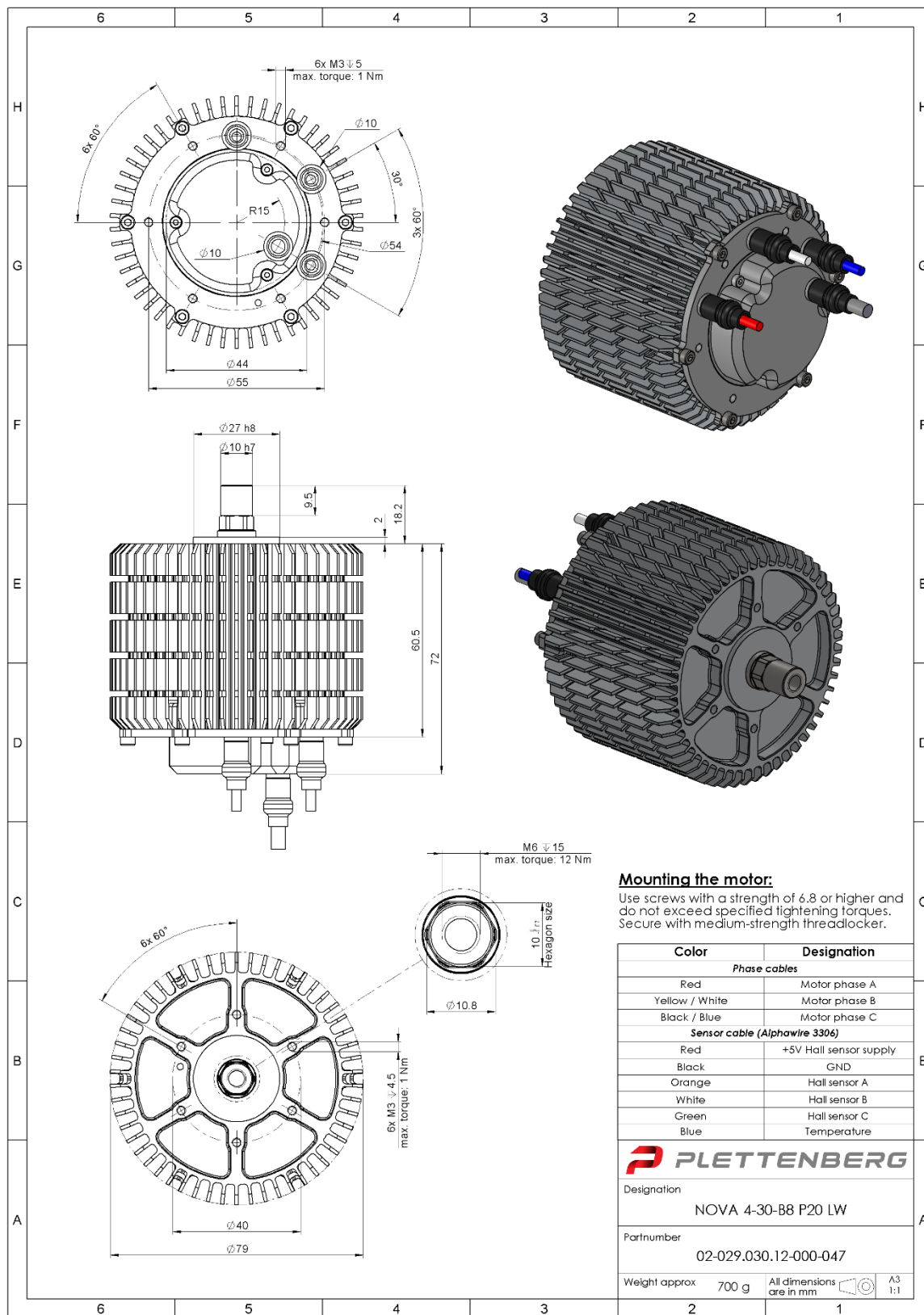
### Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 4-30-B8 P20 LW

Inrunner BLDC motor with closed housing



### 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.

Color	Designation
<b>Phase cables</b>	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C
<b>Sensor cable (Alphawire 3306)</b>	
Red	+5V Hall sensor supply
Black	GND
Orange	Hall sensor A
White	Hall sensor B
Green	Hall sensor C
Blue	Temperature

<b>PLETTENBERG</b>	
Designation	NOVA 4-30-B8 P20 LW
Partnumber	02-029.030.12-000-047
Weight approx	700 g
All dimensions are in mm	A3 1:1

Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 4-30-B12 P20 LW

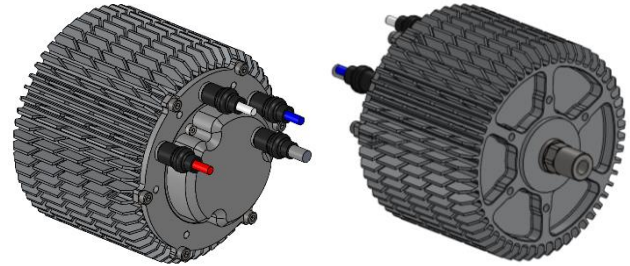
Inrunner BLDC motor with closed housing

### Overview

The NOVA 4 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems, aerospace and racing.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-029.030.12-000-048	
Peak output power	2.4	kW
Peak torque (max. 5s) <sup>(1)</sup>	4	Nm
Max. speed	11,000	rpm
Voltage range	15-60	V
Speed constant (kV)	186	rpm/V
Diameter	79	mm
Length	61	mm
Weight	700	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	2.5	mm <sup>2</sup>
	13	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	20	
Number of windings	12	
Peak thrust	12.5 kg with 22x7.4" prop	

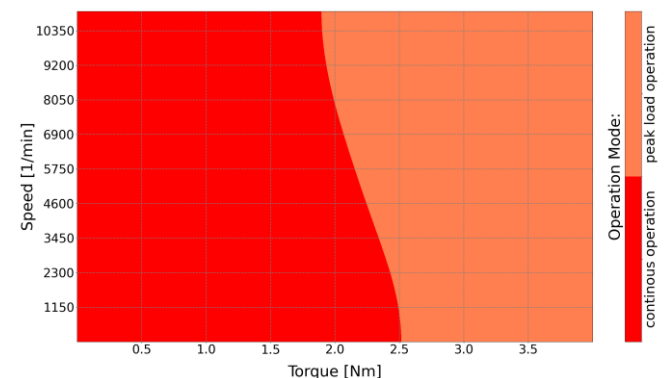
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 10mm
- Plettenberg ESCs: MST 60-80, MST 60-130
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

### Options & Customization

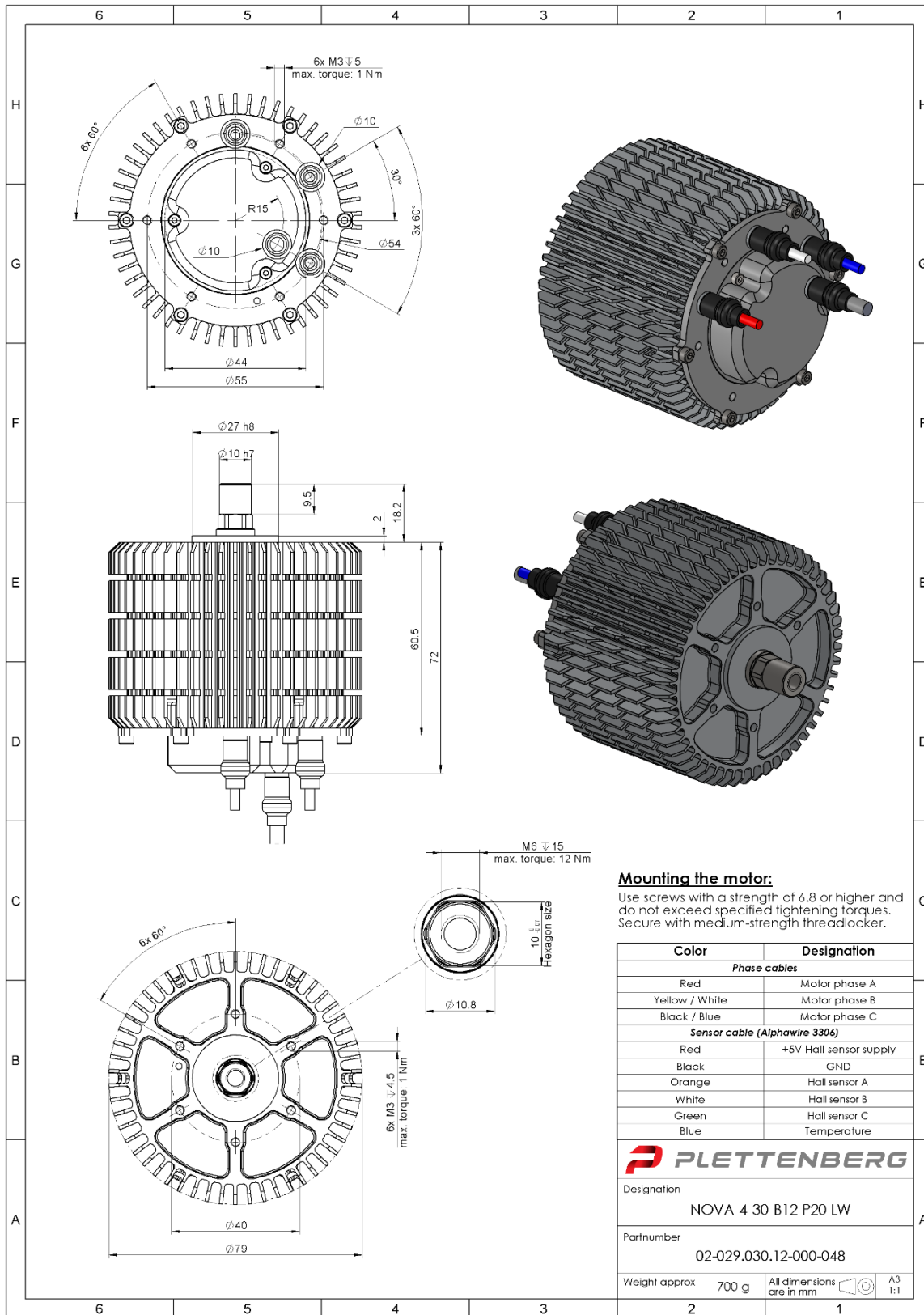
- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification





# NOVA 4-30-B12 P20 LW

Inrunner BLDC motor with closed housing



**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.

Color	Designation
<b>Phase cables</b>	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C
<b>Sensor cable (Alphawire 3306)</b>	
Red	+5V Hall sensor supply
Black	GND
Orange	Hall sensor A
White	Hall sensor B
Green	Hall sensor C
Blue	Temperature

Designation	NOVA 4-30-B12 P20 LW
Partnumber	02-029.030.12-000-048
Weight approx	700 g
All dimensions are in mm	
A3 1:1	

Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 4-50-B4 P20 LW

Inrunner BLDC motor with closed housing

### Overview

The NOVA 4 Light-Weight (“LW”) is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems, aerospace and racing.

### Features

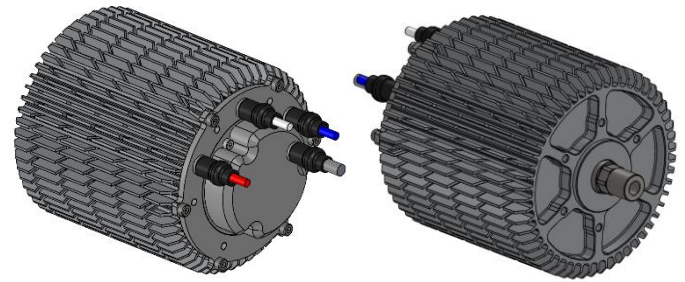
- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling

### Specifications

Part number	02-029.050.12-000-049	
Peak output power	4	kW
Peak torque (max. 5s) <sup>(1)</sup>	6.5	Nm
Max. speed	11,000	rpm
Voltage range	15-30	V
Speed constant (kV)	330	rpm/V
Diameter	79	mm
Length	81	mm
Weight	980	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	8	mm <sup>2</sup>
	8	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	20	
Number of windings	4	
Peak thrust	19 kg with 24x8.1"	

#### Notes:

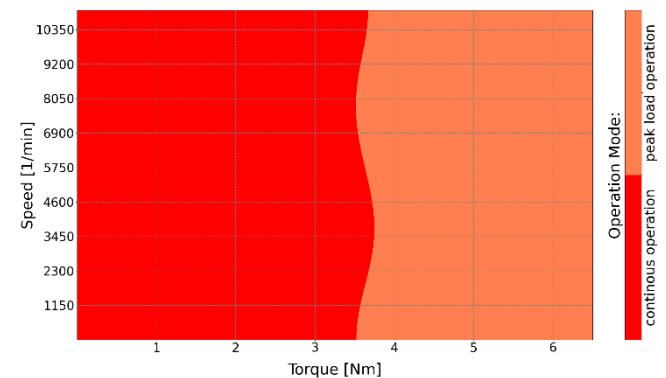
<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 10mm
- Plettenberg ESCs: MST 60-80, MST 60-130
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

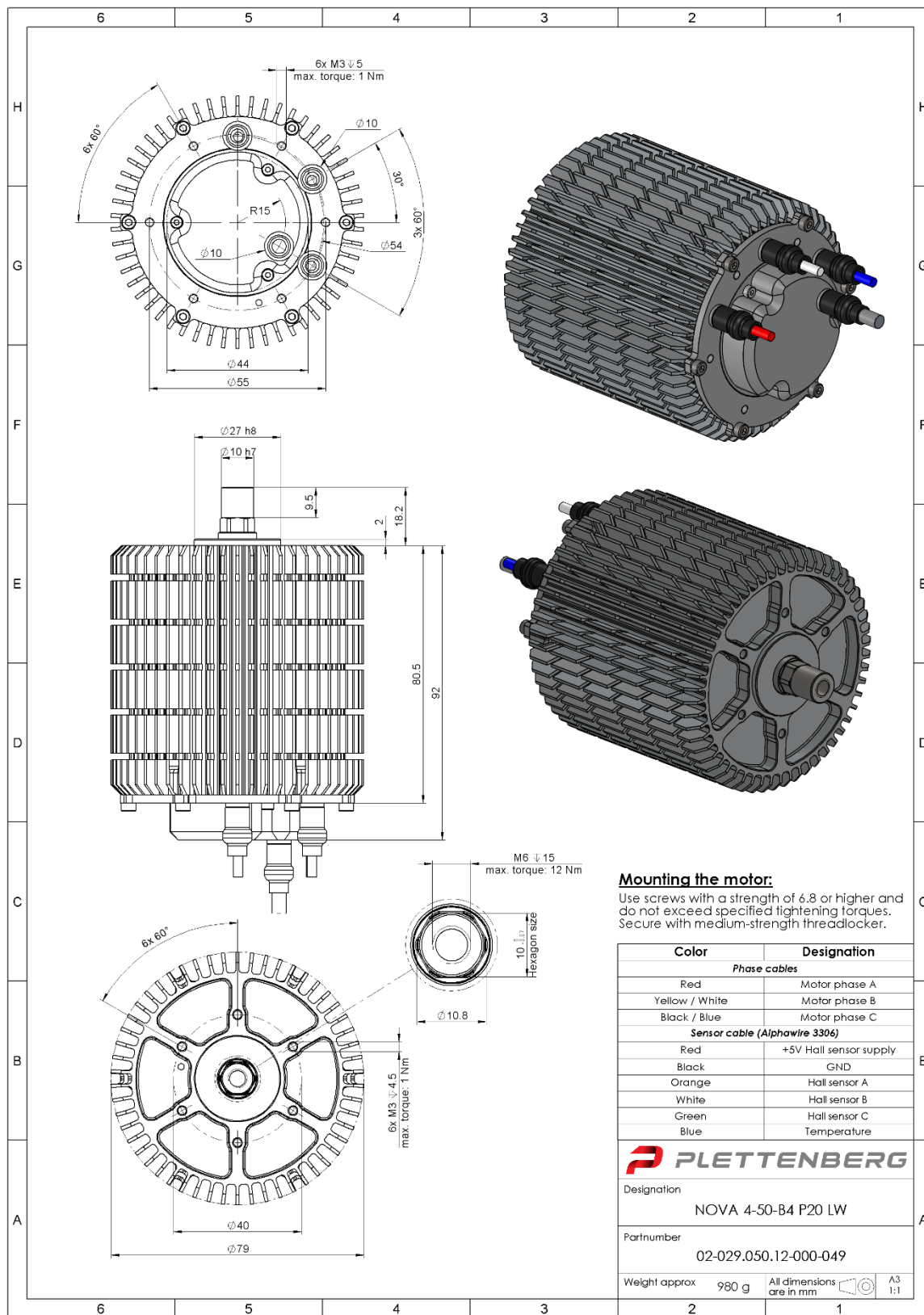
### Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 4-50-B4 P20 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 4-50-B8 P20 LW

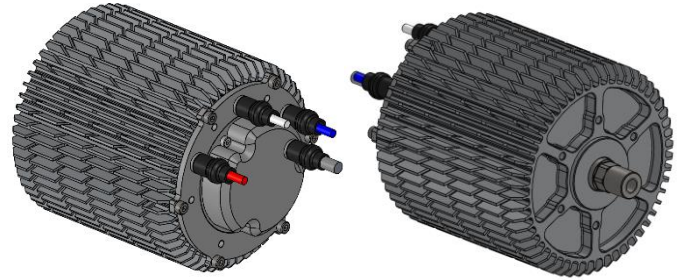
Inrunner BLDC motor with closed housing

### Overview

The NOVA 4 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems, aerospace and racing.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-029.050.12-000-050	
Peak output power	4	kW
Peak torque (max. 5s) <sup>(1)</sup>	6.5	Nm
Max. speed	11,000	rpm
Voltage range	20-60	V
Speed constant (kV)	165	rpm/V
Diameter	79	mm
Length	81	mm
Weight	980	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	4	mm <sup>2</sup>
	12	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	20	
Number of windings	8	
Peak thrust	19 kg with 24x8.1"	

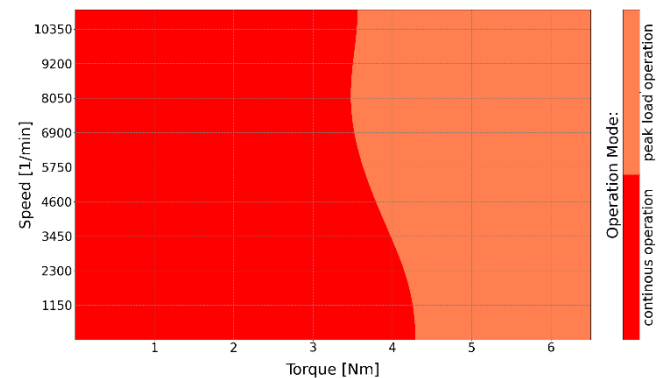
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 10mm
- Plettenberg ESCs: MST 60-80, MST 60-130
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

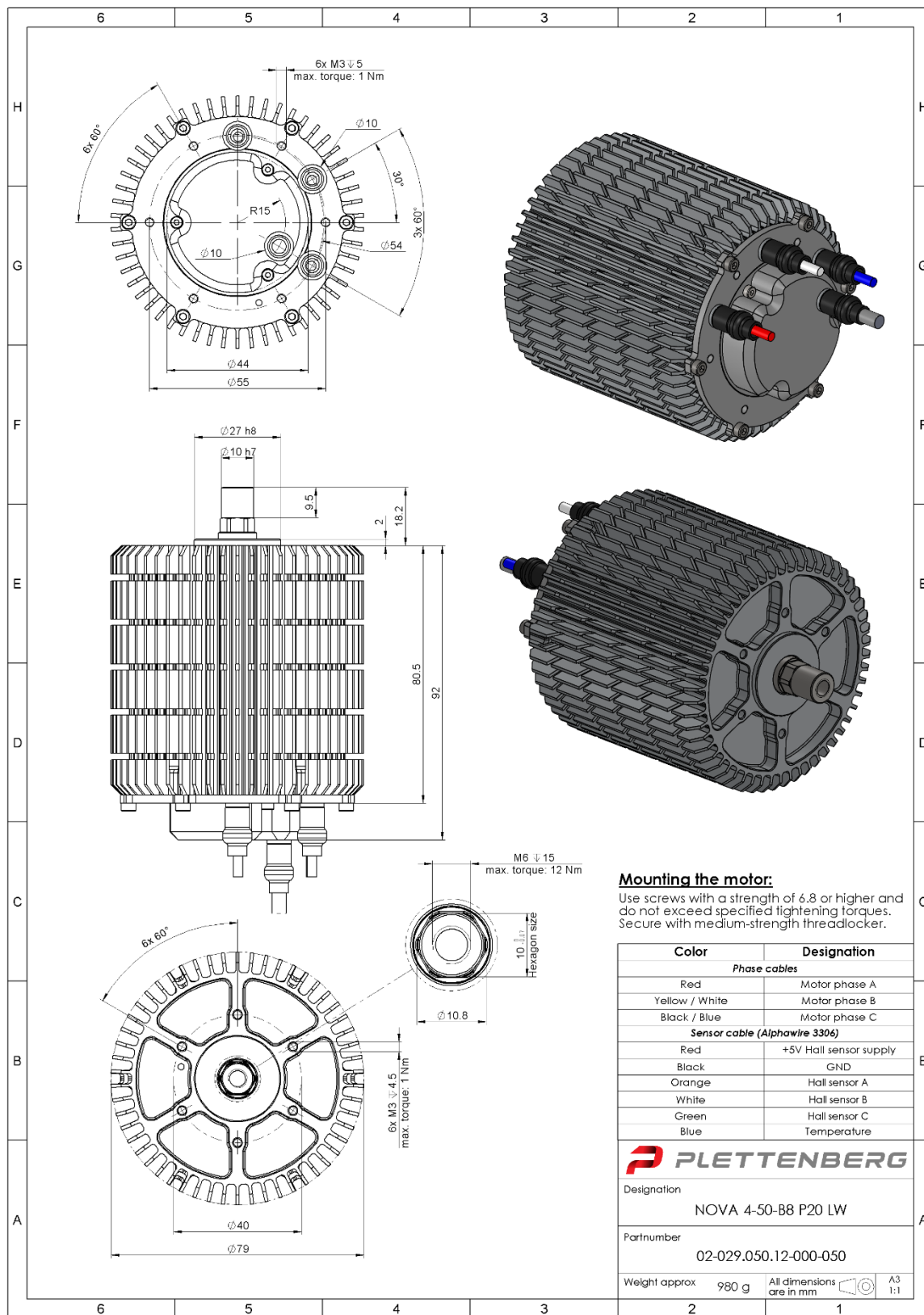
### Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 4-50-B8 P20 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-20-B4 P30 LW

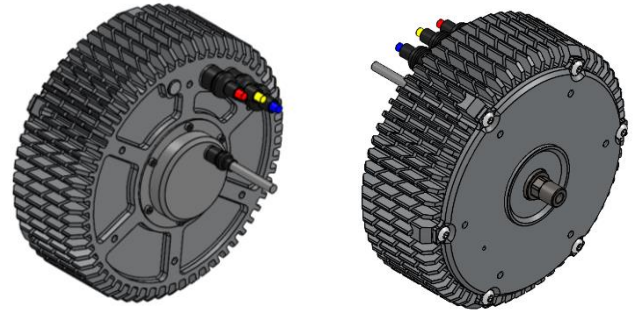
Inrunner BLDC motor with closed housing

### Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-044.020.12-000-339	
Peak output power	6	kW
Peak torque (max. 5s) <sup>(1)</sup>	16	Nm
Max. speed	8,000	rpm
Voltage range	15-36	V
Speed constant (kV)	255	rpm/V
Diameter	138	mm
Length	53	mm
Weight	1,500	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	10	mm <sup>2</sup>
	7	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	
Peak thrust	31 kg with 32x10.6" prop	

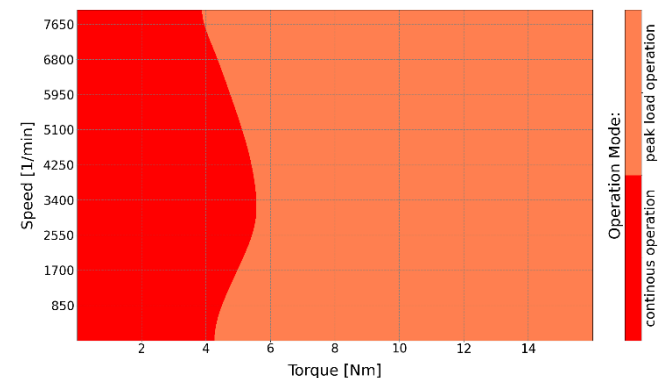
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 10
- Plettenberg ESCs: MST 60-130, MST 60-260
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

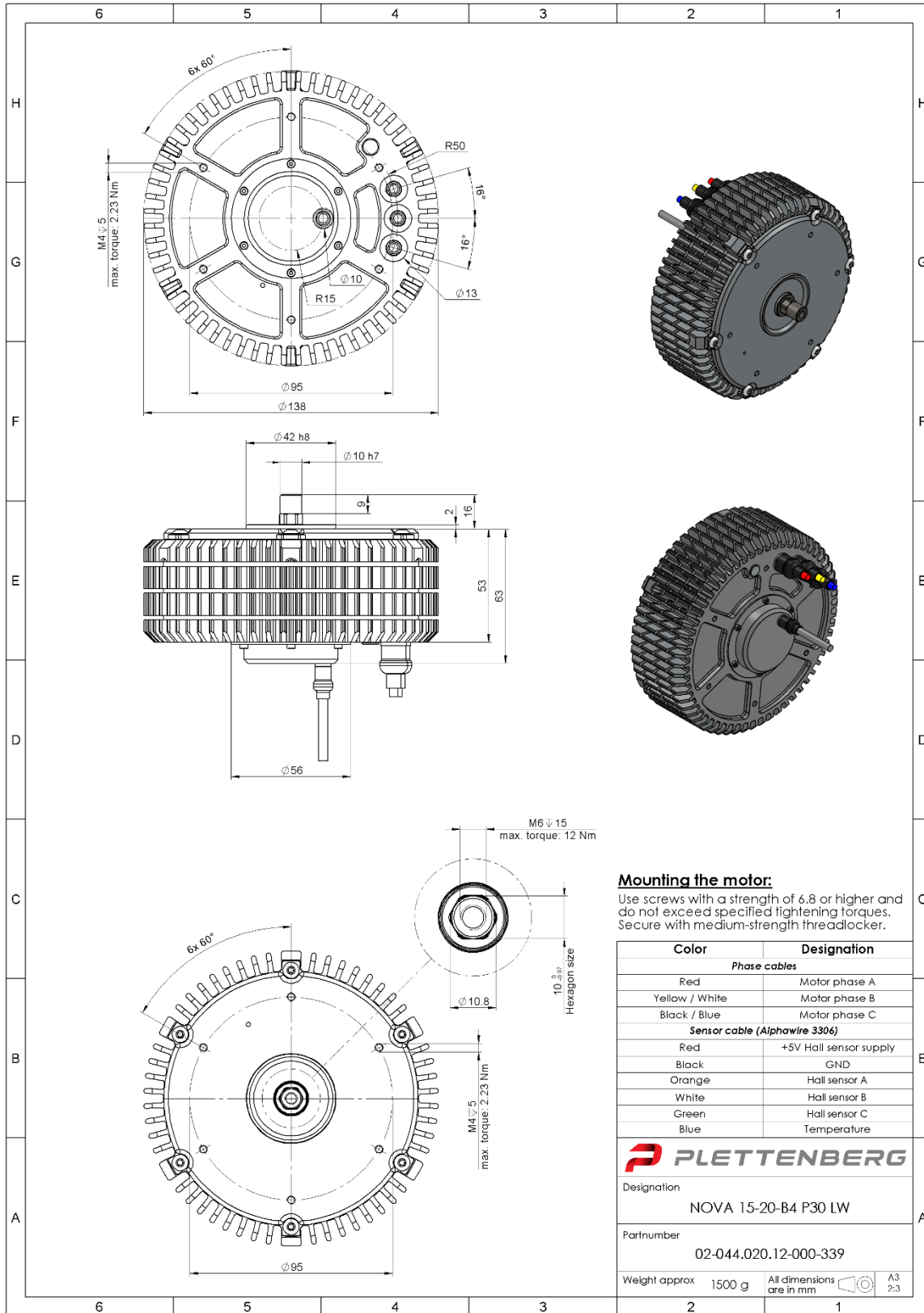
### Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 15-20-B4 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-20-B6 P30 LW

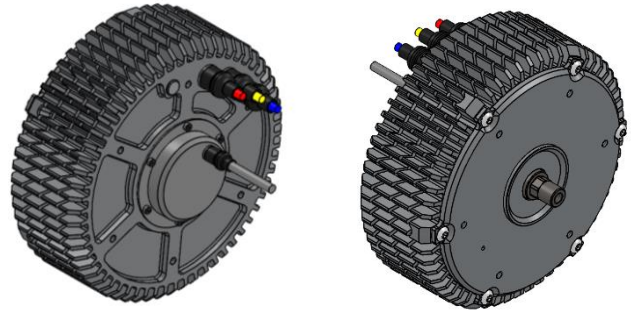
Inrunner BLDC motor with closed housing

### Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-044.020.12-000-340	
Peak output power	6	kW
Peak torque (max. 5s) <sup>(1)</sup>	16	Nm
Max. speed	8,000	rpm
Voltage range recommended	15-50	V
Speed constant (kV)	170	rpm/V
Diameter	138	mm
Length	53	mm
Weight	1,500	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	8	mm <sup>2</sup>
	8	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	6	
Peak thrust	31 kg with 32x10.6" prop	

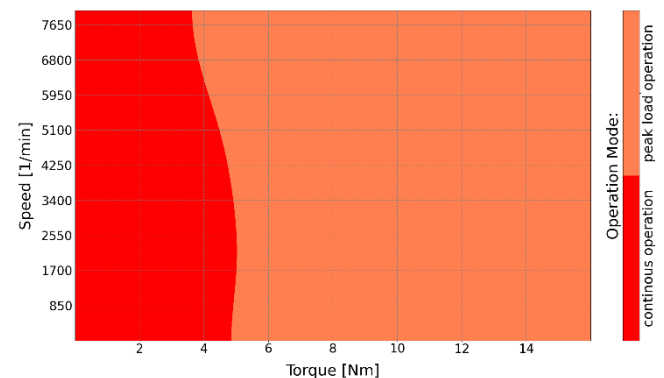
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 10
- Plettenberg ESCs: MST 60-130, MST 60-260
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

### Options & Customization

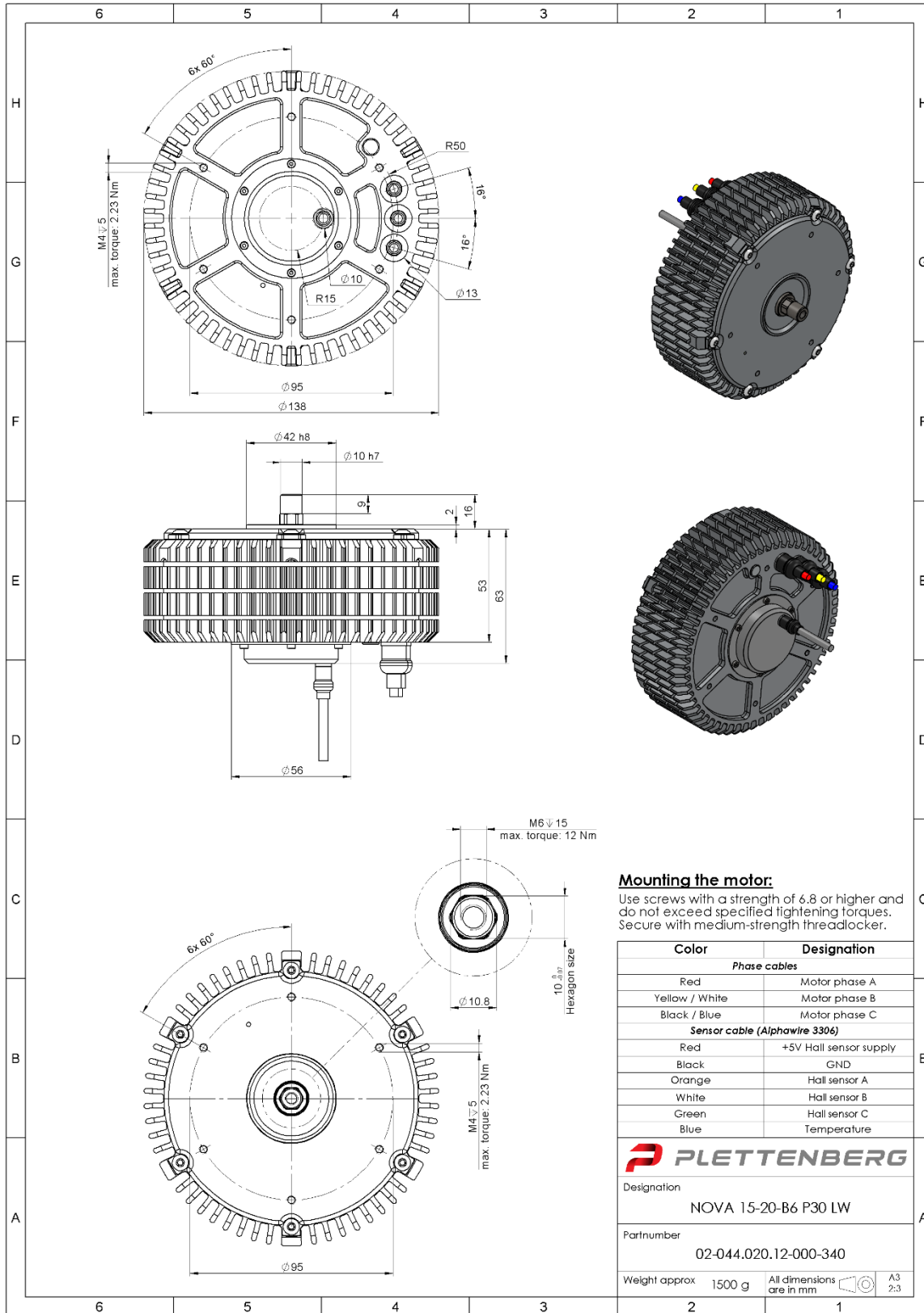
- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification





# NOVA 15-20-B6 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-25-B6 P30 LW

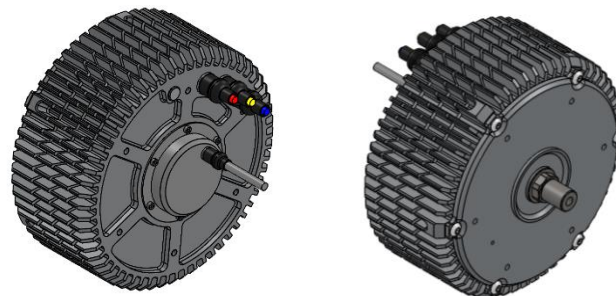
Inrunner BLDC motor with closed housing

## Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



## Specifications

Part number	02-044.025.12-000-341	
Peak output power	7	kW
Peak torque (max. 5s) <sup>(1)</sup>	20	Nm
Max. speed	8,000	rpm
Voltage range	15-60	V
Speed constant (kV)	133	rpm/V
Diameter	138	mm
Length	65	mm
Weight	1,860	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	8	mm <sup>2</sup>
	8	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	6	
Peak thrust	40 kg with 36x12" prop	

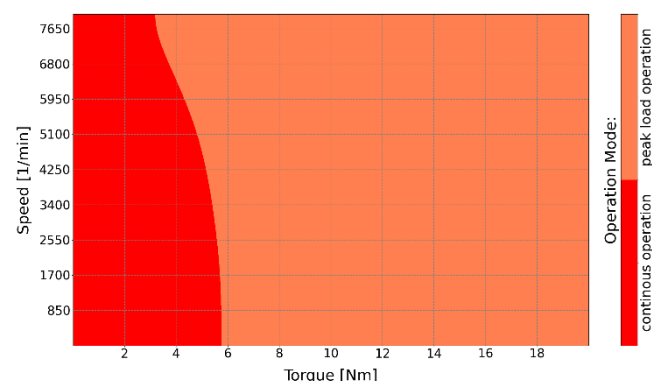
### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

## Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 60-130, MST 60-260, MST 80-240
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

## Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

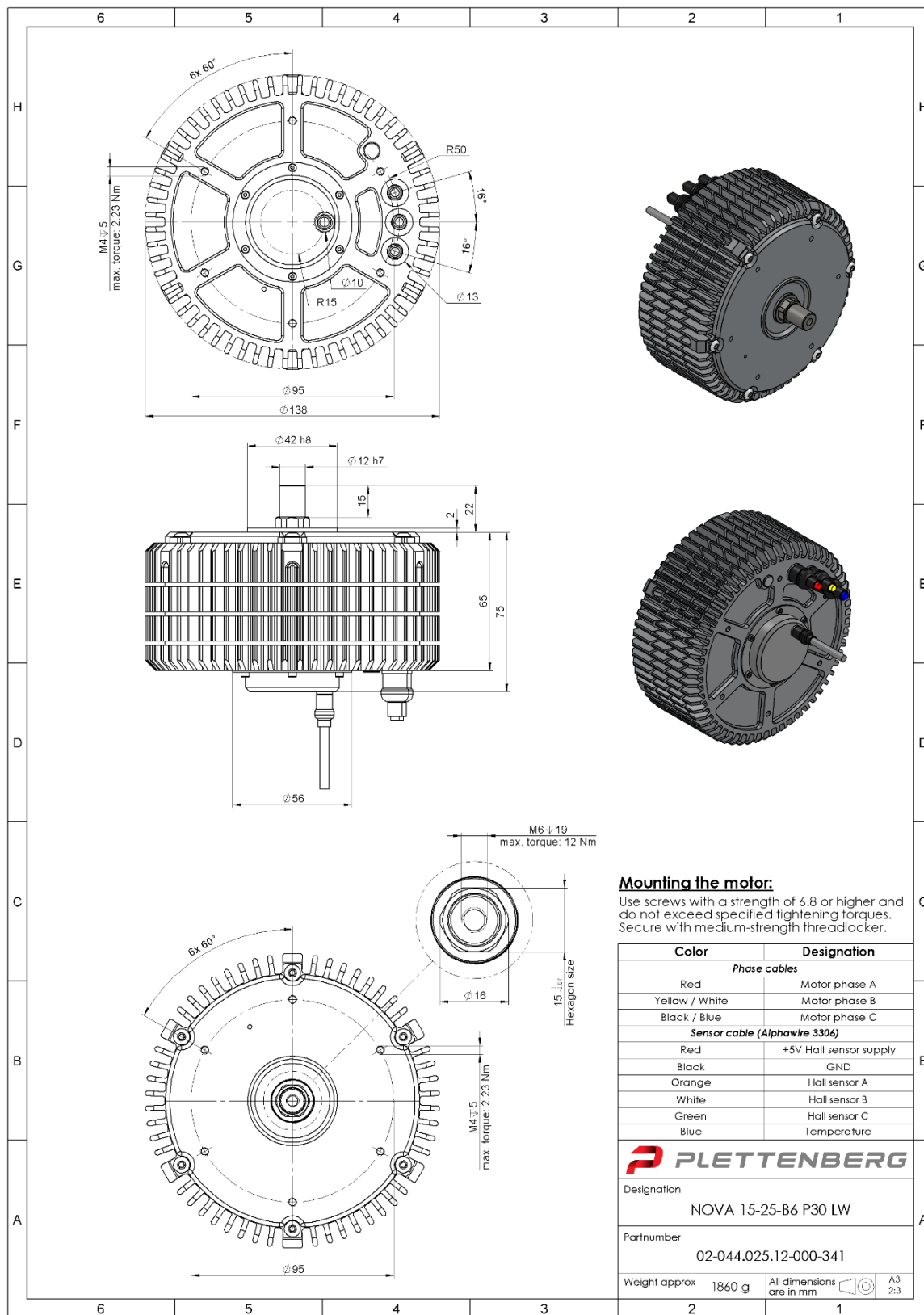
## Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 15-25-B6 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-25-B12 P30 LW

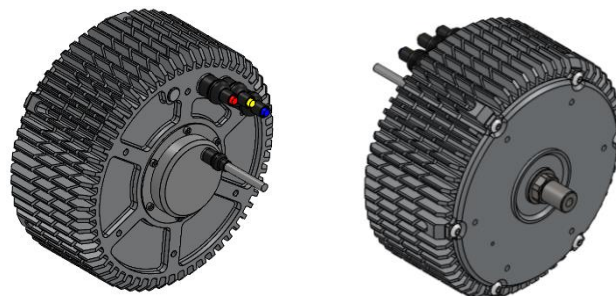
Inrunner BLDC motor with closed housing

## Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



## Specifications

Part number	02-044.025.12-000-342	
Peak output power	7	kW
Peak torque (max. 5s) <sup>(1)</sup>	20	Nm
Max. speed	8,000	rpm
Voltage range	40-120	V
Speed constant (kV)	64	rpm/V
Diameter	138	mm
Length	65	mm
Weight	1,860	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	4	mm <sup>2</sup>
	12	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	12	
Peak thrust	40 kg with 36x12" prop	

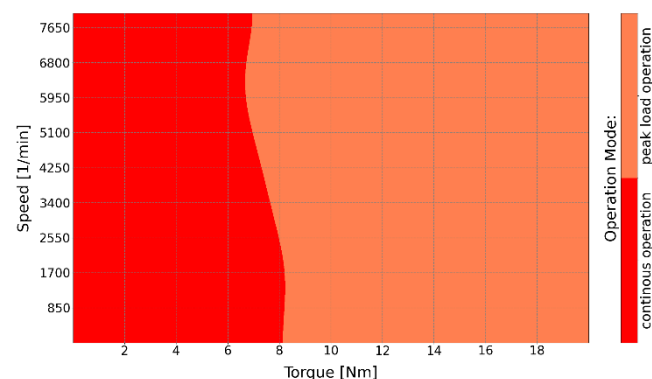
### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

## Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 60-260, MST 60-290, MST 60-130, MST 80-240, MST 80-350, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

## Heatmap



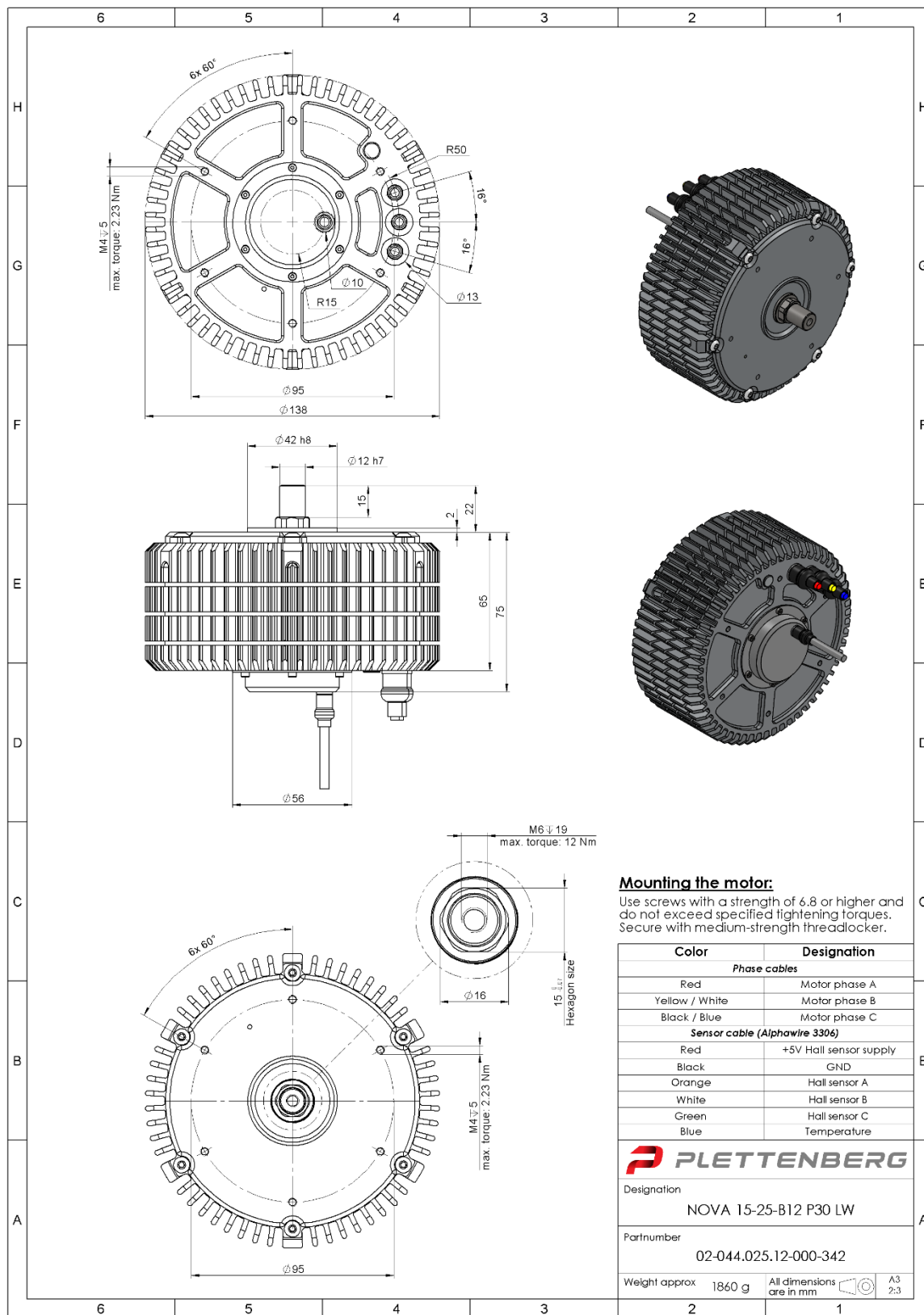
## Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 15-25-B12 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-30-B6 P30 LW

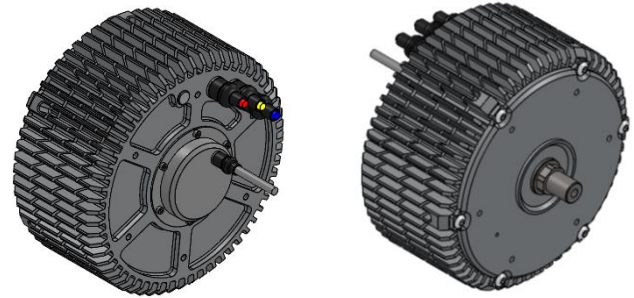
Inrunner BLDC motor with closed housing

### Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-044.030.12-000-343	
Peak output power	9	kW
Peak torque (max. 5s) <sup>(1)</sup>	24	Nm
Max. speed	8,000	rpm
Voltage range	20-75	V
Speed constant (kV)	111	rpm/V
Diameter	138	mm
Length	70	mm
Weight	2,040	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	8	mm <sup>2</sup>
	8	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	6	
Peak thrust	48 kg with 40x13.3" prop	

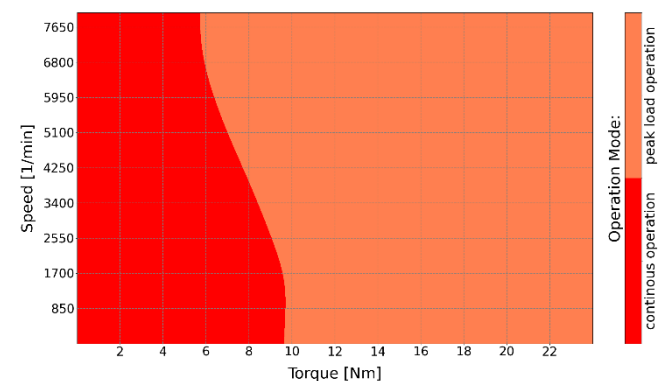
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 60-130, MST 60-260, MST 80-240
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



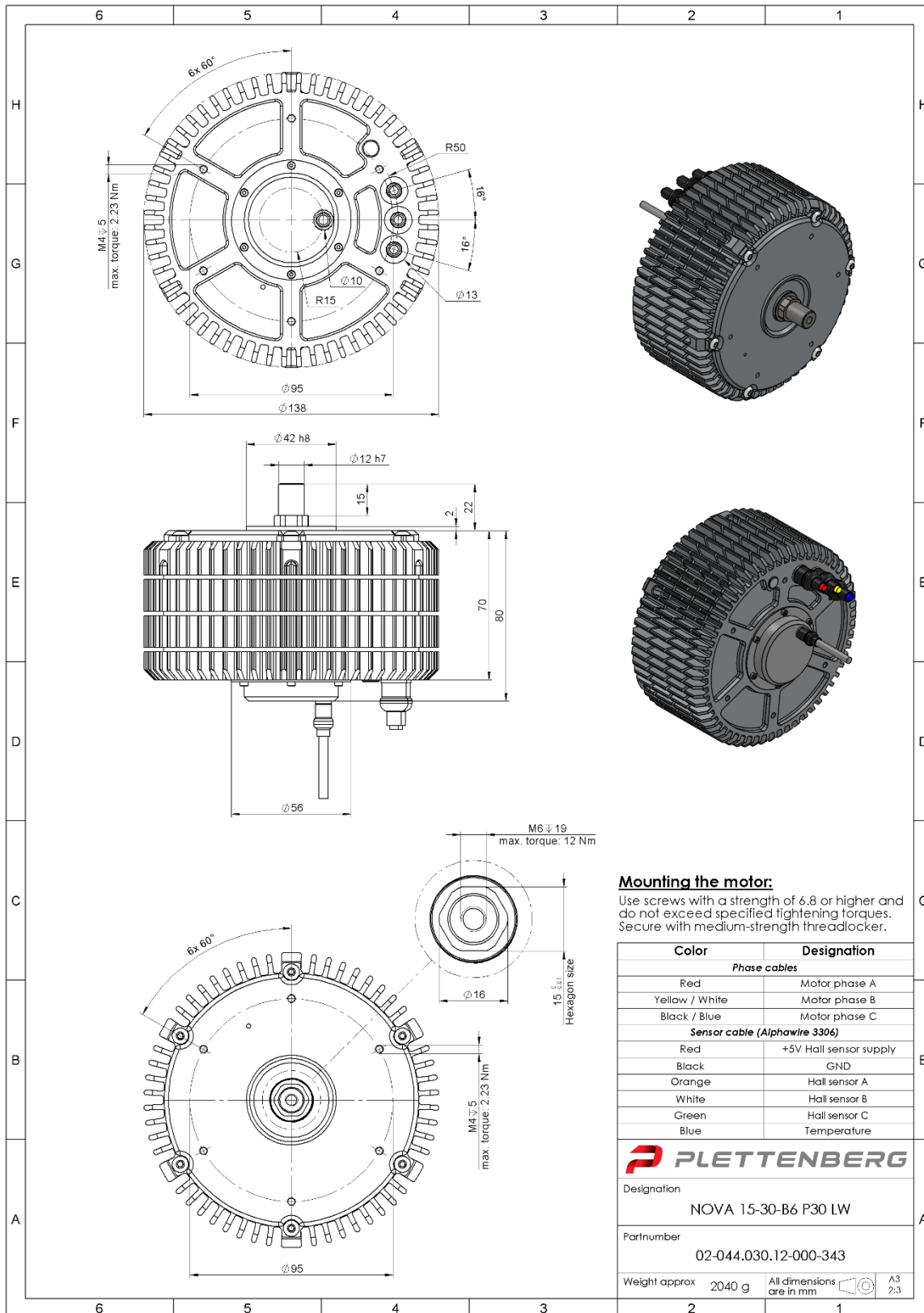
### Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 15-30-B6 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-30-B10 P30 LW

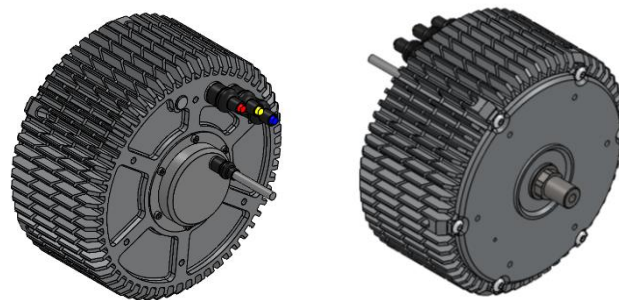
Inrunner BLDC motor with closed housing

## Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



## Specifications

Part number	02-044.030.12-000-344	
Peak output power	9	kW
Peak torque (max. 5s) <sup>(1)</sup>	24	Nm
Max. speed	8,000	rpm
Voltage range	30-120	V
Speed constant (kV)	65	rpm/V
Diameter	138	mm
Length	70	mm
Weight	2,040	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	4	mm <sup>2</sup>
	12	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	10	
Peak thrust	48 kg with 40x13.3" prop	

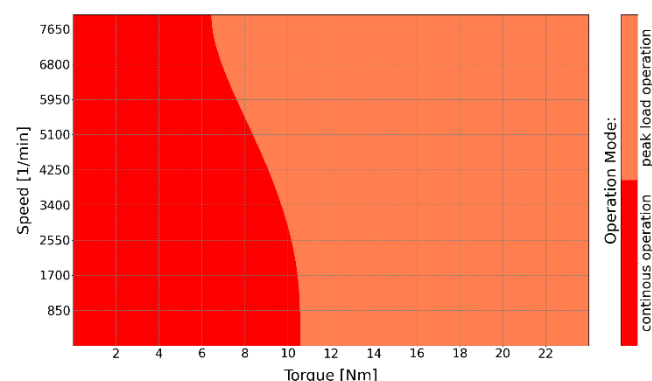
### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

## Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 60-130, MST 60-260, MST 80-240, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

## Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

## Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



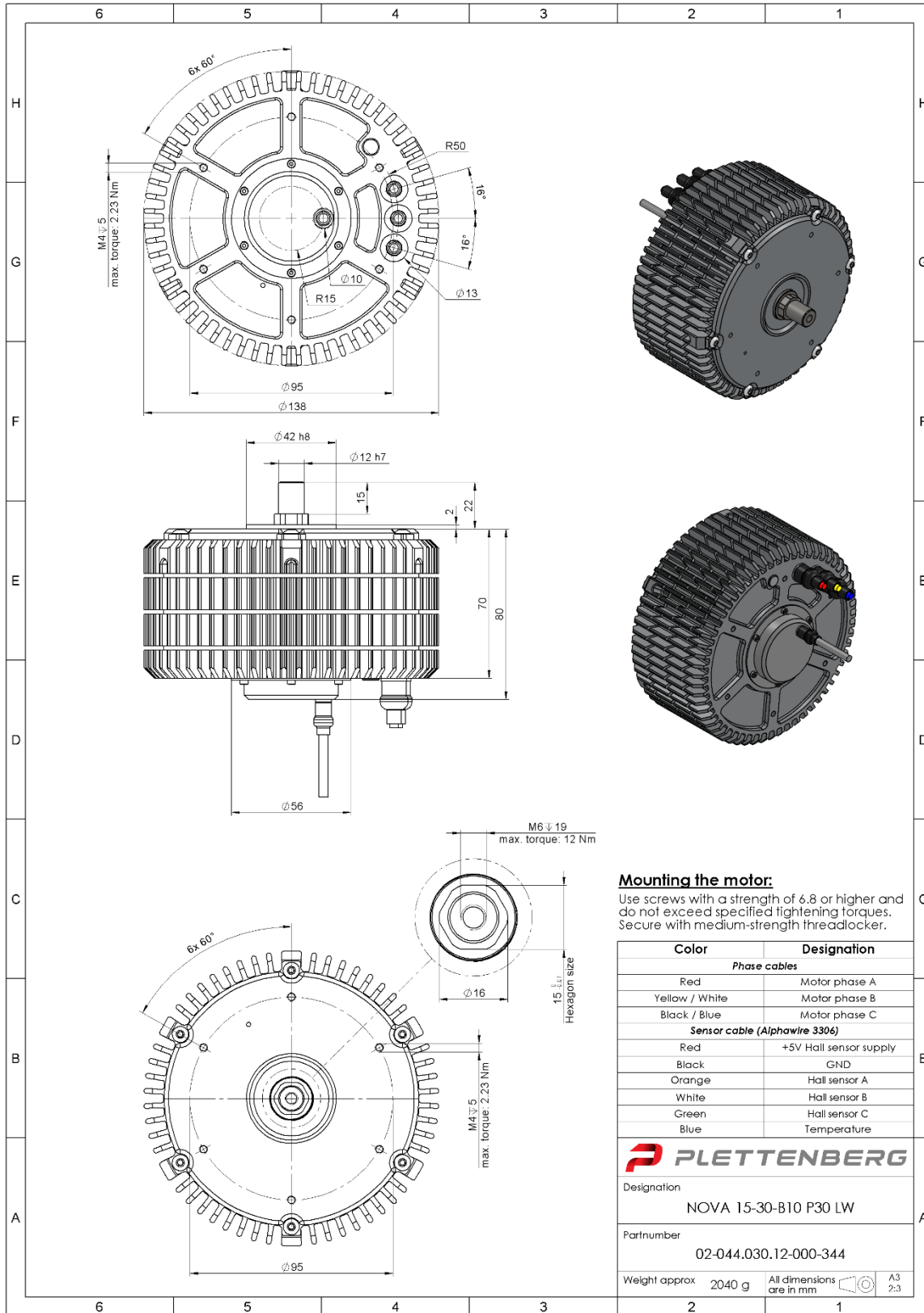


NOVA Series



# NOVA 15-30-B10 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-40-B4 P30 LW

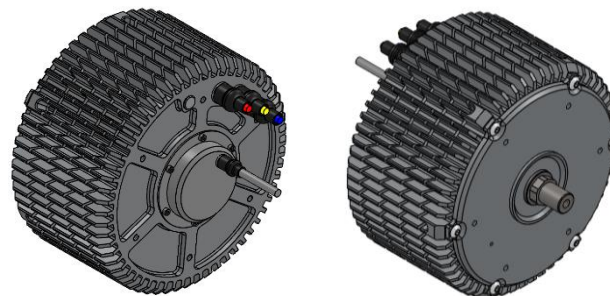
Inrunner BLDC motor with closed housing

## Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettberg propeller coupling



## Specifications

Part number	02-044.040.12-000-345	
Peak output power	12	kW
Peak torque (max. 5s) <sup>(1)</sup>	32	Nm
Max. speed	8,000	rpm
Voltage range	15-60	V
Speed constant (kV)	125	rpm/V
Diameter	138	mm
Length	80	mm
Weight	2,460	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	10	mm <sup>2</sup>
	7	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	
Peak thrust	60 kg with 40x13.3" prop	

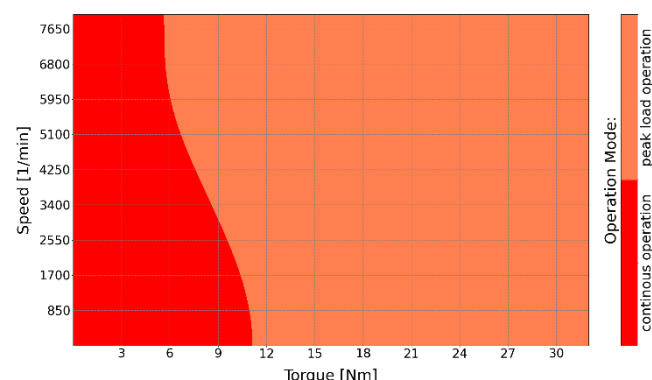
### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

## Complementary Products

- Plettberg propeller coupling: PC LW 6K 12
- Plettberg ESCs: MST 60-260, MST 60-290, MST 80-240
- Third party ESC from Allocortech
- Plettberg gold connectors: GC6-00 / GC6-90

## Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

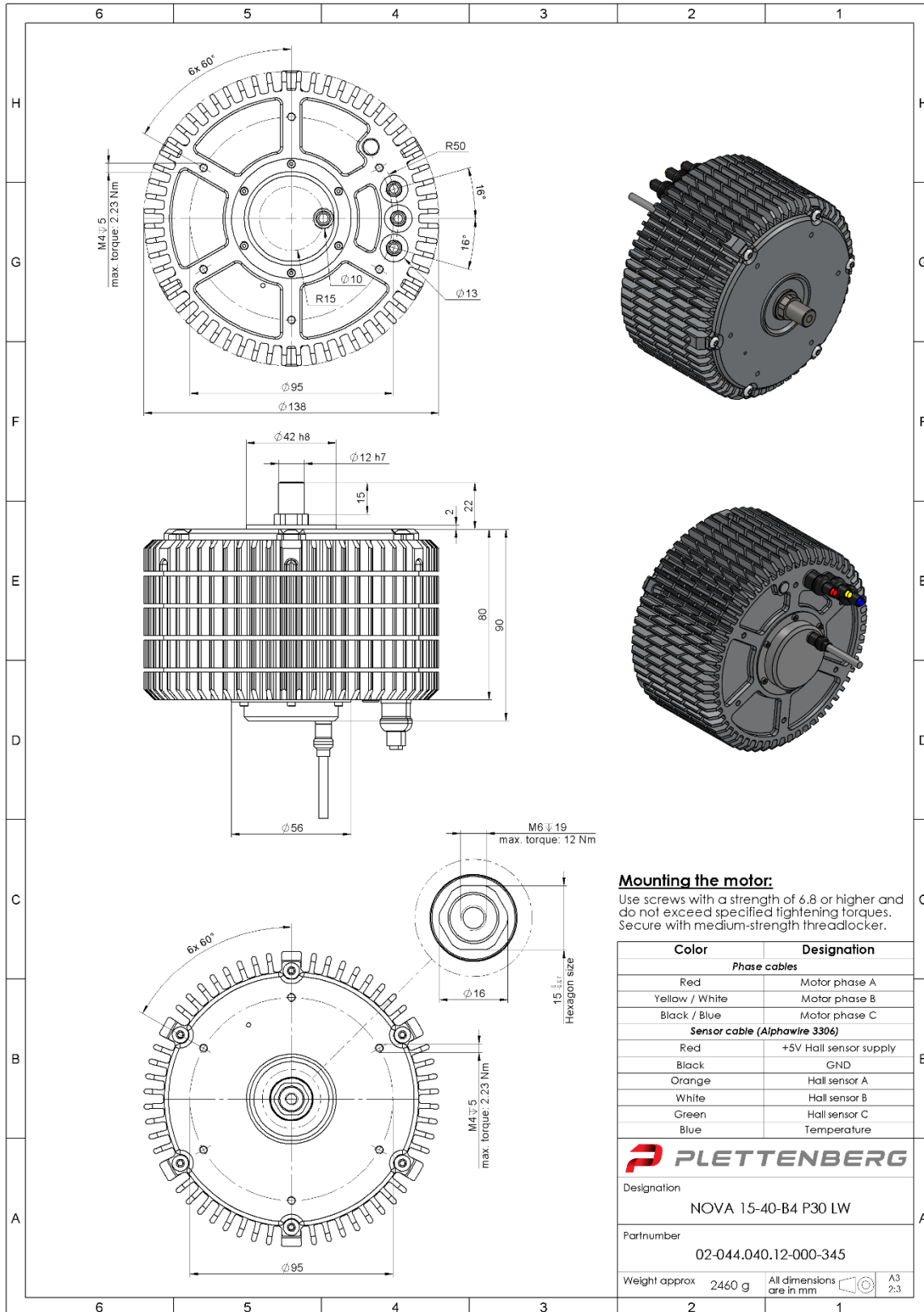
## Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 15-40-B4 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-40-B8 P30 LW

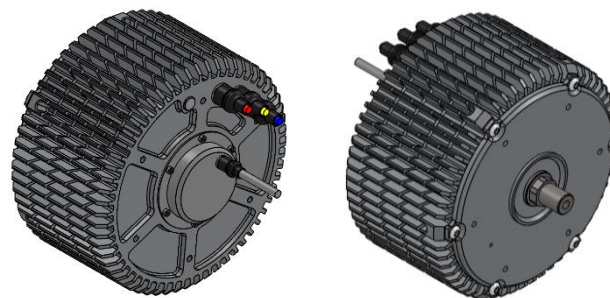
Inrunner BLDC motor with closed housing

## Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



## Specifications

Part number	02-044.040.12-000-346	
Peak output power	12	kW
Peak torque (max. 5s) <sup>(1)</sup>	32	Nm
Max. speed	8,000	rpm
Voltage range	40-120	V
Speed constant (kV)	62	rpm/V
Diameter	138	mm
Length	80	mm
Weight	2,460	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	6	mm <sup>2</sup>
	10	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	8	
Peak thrust	60 kg with 40x13.3" prop	

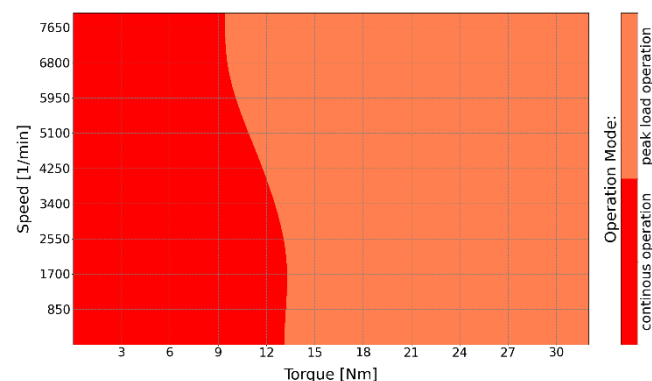
### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

## Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 60-260, MST 60-290, MST 80-240, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

## Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

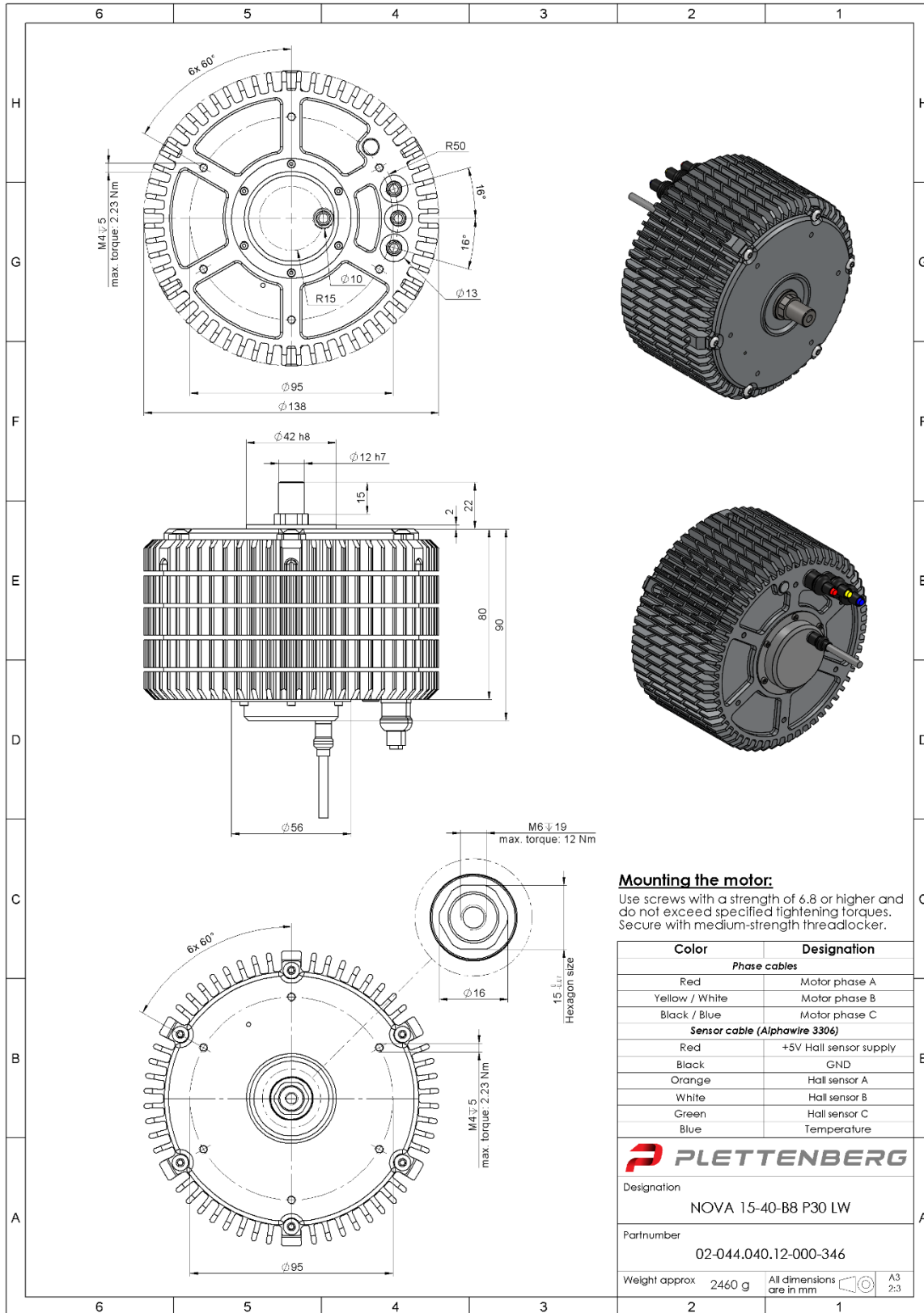
## Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 15-40-B8 P30 LW

Inrunner BLDC motor with closed housing



**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.

Color	Designation
<b>Phase cables</b>	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C
<b>Sensor cable (Alphawire 3306)</b>	
Red	+5V Hall sensor supply
Black	GND
Orange	Hall sensor A
White	Hall sensor B
Green	Hall sensor C
Blue	Temperature

Designation	NOVA 15-40-B8 P30 LW
Partnumber	02-044.040.12-000-346
Weight approx	2460 g
All dimensions are in mm	A3 2:3

Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-50-B4 P30 LW

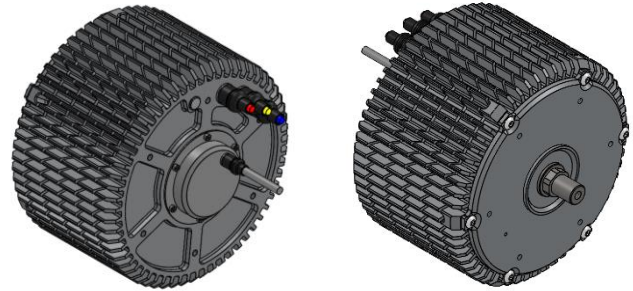
Inrunner BLDC motor with closed housing

### Overview

The NOVA 15 Light-Weight (“LW”) is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-044.050.12-000-347	
Peak output power	15	kW
Peak torque (max. 5s) <sup>(1)</sup>	40	Nm
Max. speed	8,000	rpm
Voltage range	15-80	V
Speed constant (kV)	99	rpm/V
Diameter	138	mm
Length	90	mm
Weight	2,860	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	10	mm <sup>2</sup>
	7	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	
Peak thrust	67 kg with 42x15.2” prop	

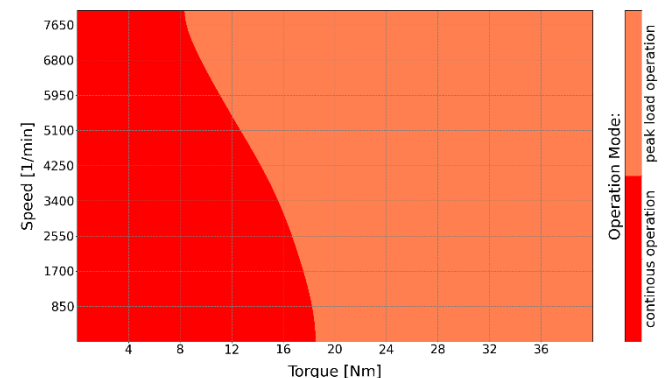
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 60-260, MST 60-290, MST 60-130, MST 80-240, MST 80-350
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



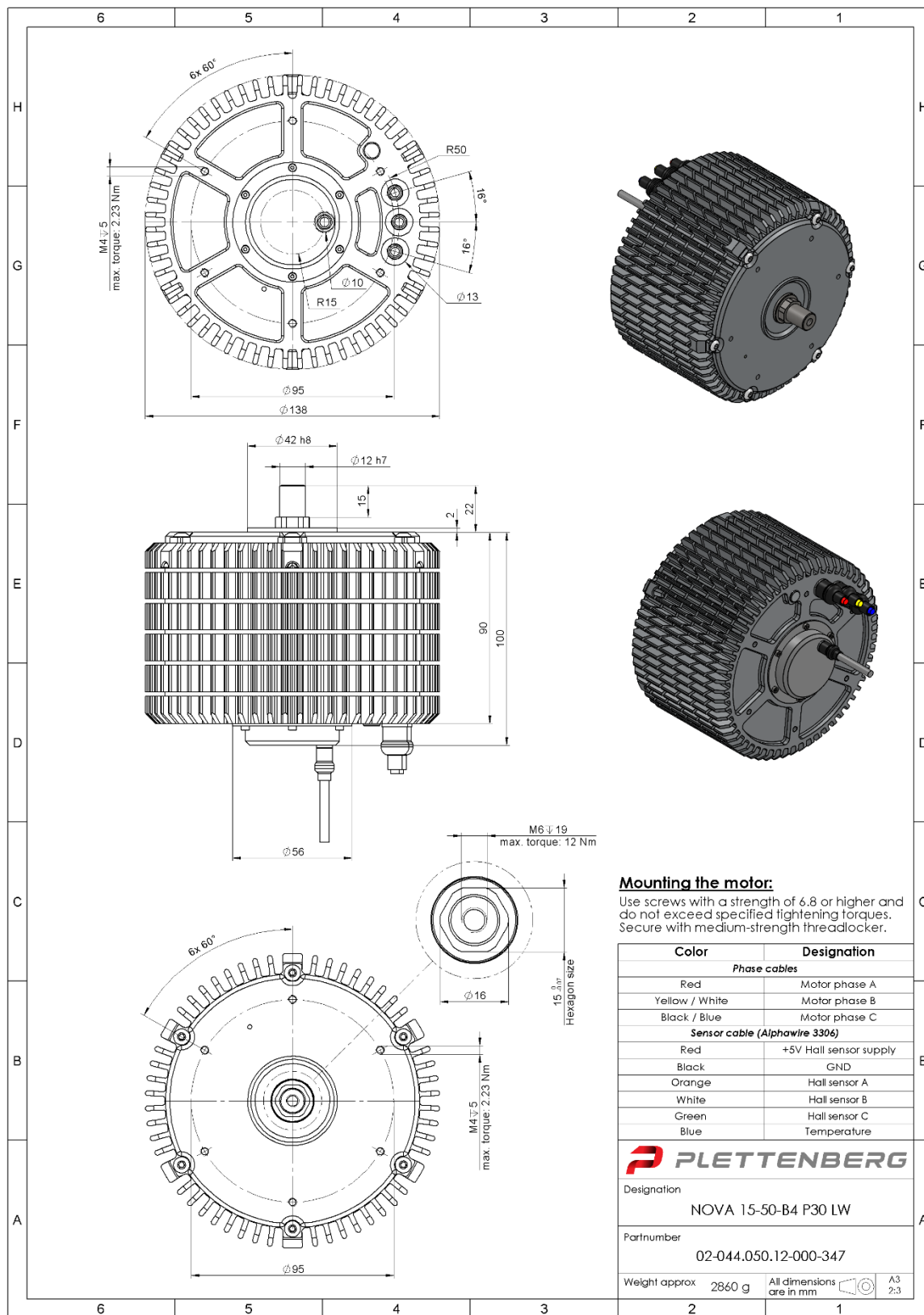
### Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



# NOVA 15-50-B4 P30 LW

Inrunner BLDC motor with closed housing



### 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.

Color	Designation
<b>Phase cables</b>	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C
<b>Sensor cable (Alphawire 3306)</b>	
Red	+5V Hall sensor supply
Black	GND
Orange	Hall sensor A
White	Hall sensor B
Green	Hall sensor C
Blue	Temperature

Designation	NOVA 15-50-B4 P30 LW
Partnumber	02-044.050.12-000-347
Weight approx	2860 g
All dimensions are in mm	A3 2:3

Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-50-B4 P30 WK

Inrunner BLDC motor with closed housing

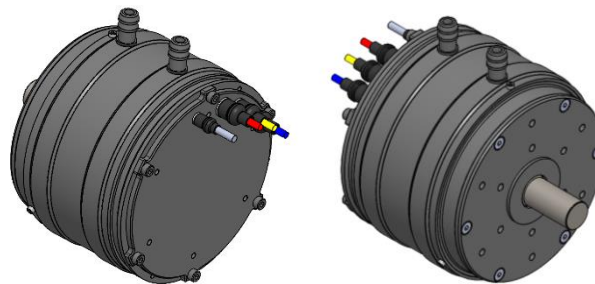


### Overview

The NOVA 15 Water-Cooled ("WK") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Wear-free position and temperature sensors included in standard



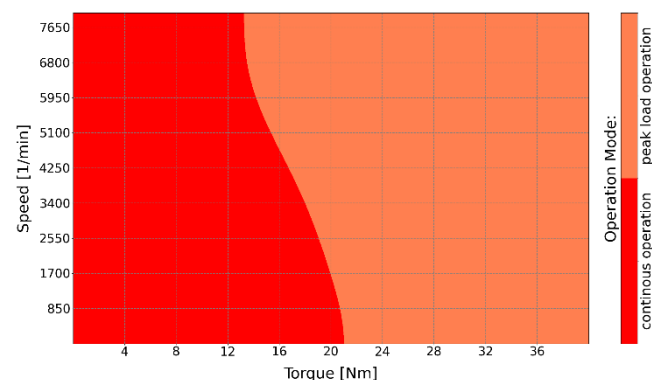
### Specifications

Part number	02-044.050.01-000-350
Peak output power	15 kW
Peak torque (max. 5s) <sup>(1)</sup>	40 Nm
Max. speed	8,000 rpm
Voltage range	15-80 V
Speed constant (kV)	99 rpm/V
Diameter (ex. water inlet)	131 mm
Length	97 mm
Weight	3,200 g
Phase cable length	100 mm
Sensor cable length	400 mm
Recommended phase cable extension	10 mm <sup>2</sup>
	7 AWG
Protection class	IP54
Mounting	Front & back
Direction of rotation	Both
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.

### Complementary Products

- Plettenberg ESCs: MST 60-260, MST 60-290, MST 60-130, MST 80-240, MST 80-350
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



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

### Options & Customization

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

#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

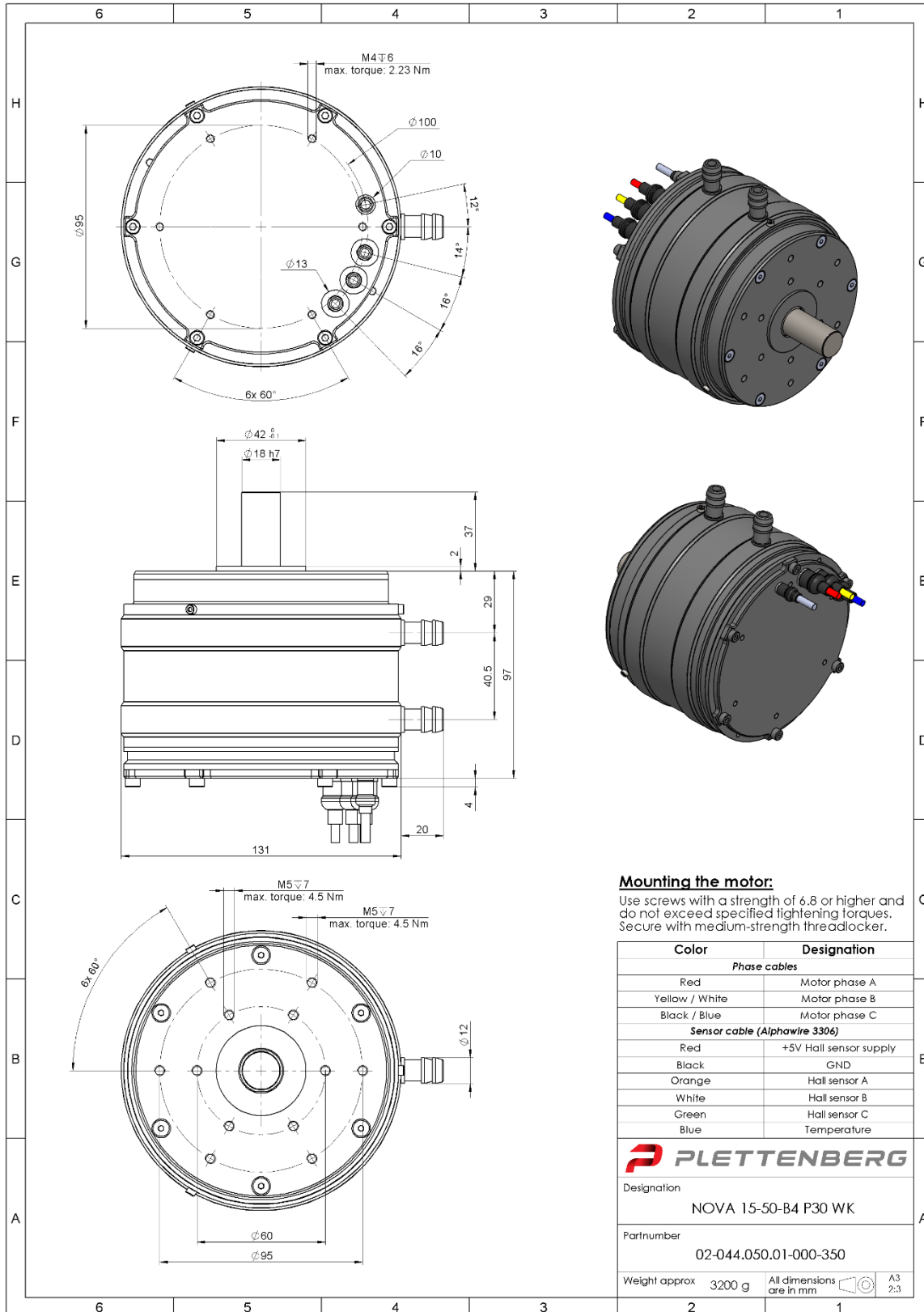
Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.





# NOVA 15-50-B4 P30 WK

Inrunner BLDC motor with closed housing



**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.

Color	Designation
<b>Phase cables</b>	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C
<b>Sensor cable (Alphawire 3306)</b>	
Red	+5V Hall sensor supply
Black	GND
Orange	Hall sensor A
White	Hall sensor B
Green	Hall sensor C
Blue	Temperature

**PLETTENBERG**

Designation: NOVA 15-50-B4 P30 WK

Partnumber: 02-044.050.01-000-350

Weight approx: 3200 g

All dimensions are in mm

A3 2:3

Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



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

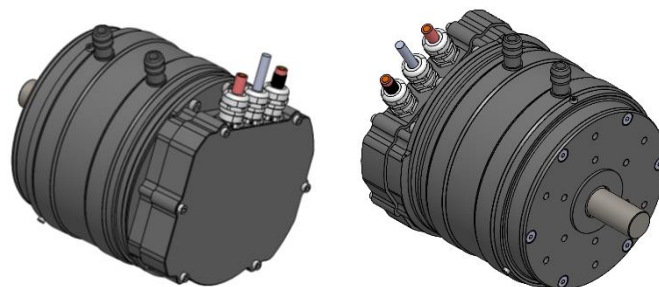
Inrunner BLDC motor with closed housing

## 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>

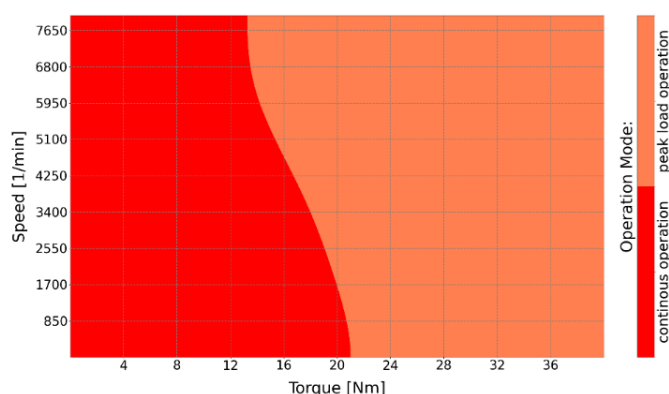
Continuous power	17.6	kW	
Electric RPM limit	240,000	1/min	
Voltage range	15-80	V	
Continuous current	220 A (at 25°C ambient temperature)		
	175 A (at 50°C ambient temperature)		
	125 A (at 75°C ambient temperature)		
Maximum current	400 A (max. 2 seconds)		
Interfaces	RS232 plus either CAN bus 2.0A 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)

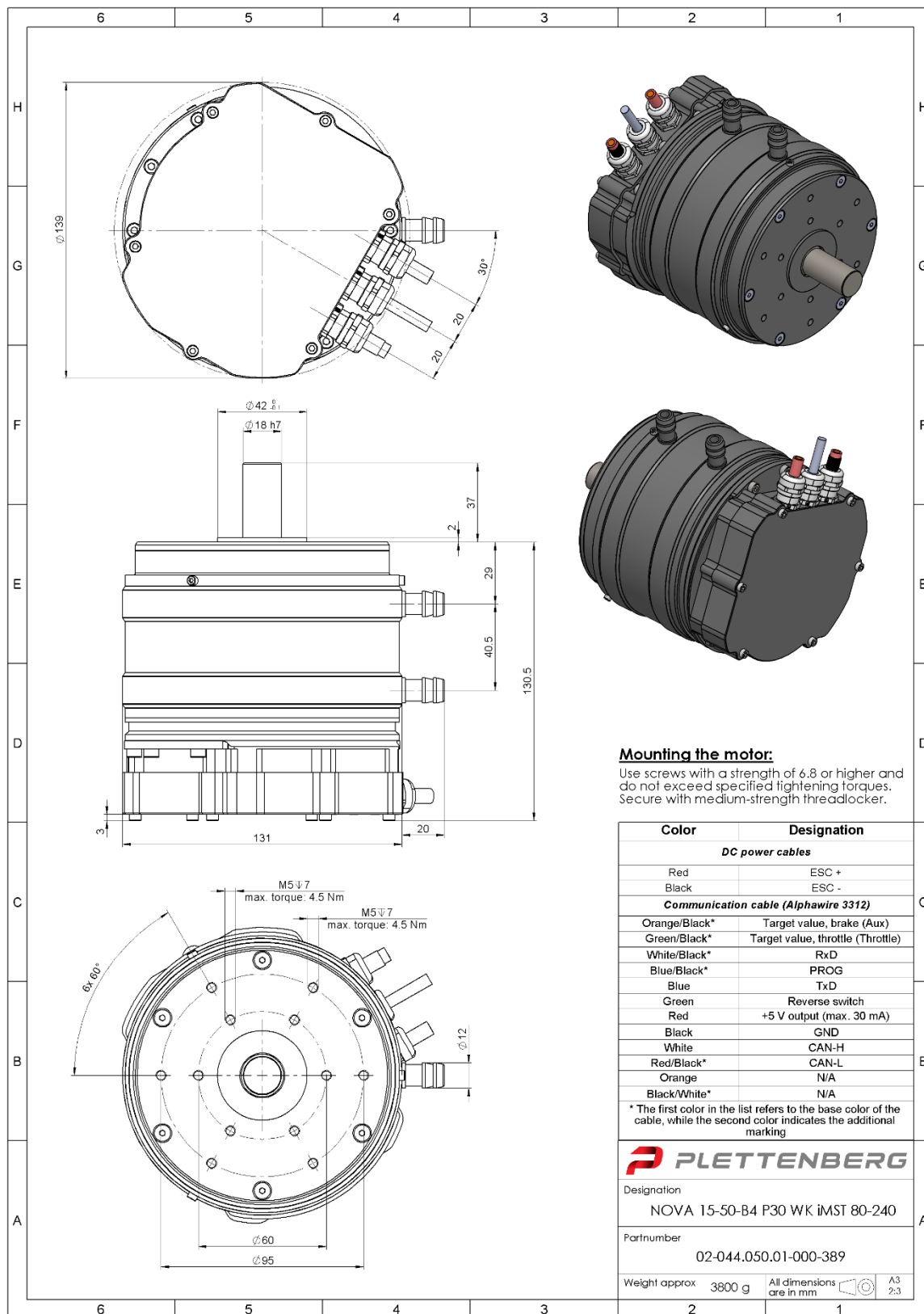
## Options & Customization

- 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



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

Inrunner BLDC motor with closed housing



**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.



## NOVA Series

# NOVA 15-50-B6 P30 LW

Inrunner BLDC motor with closed housing

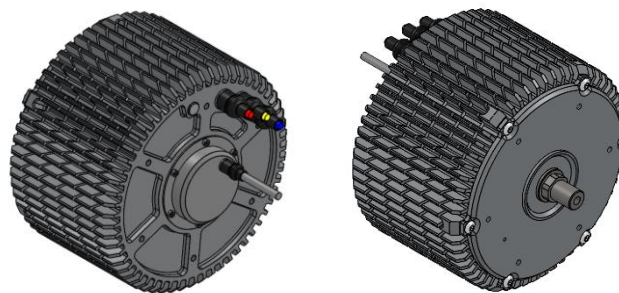


### Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-044.050.12-000-348
Peak output power	15 kW
Peak torque (max. 5s) <sup>(1)</sup>	40 Nm
Max. speed	8,000 rpm
Voltage range	30-120 V
Speed constant (kV)	65 rpm/V
Diameter	138 mm
Length	90 mm
Weight	2,860 g
Phase cable length	100 mm
Sensor cable length	400 mm
Recommended phase cable extension	8 mm <sup>2</sup> AWG
Protection class	IP54
Mounting	Front & back
Direction of rotation	Both
Cooling	Air 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	6
Peak thrust	67 kg with 42x15.2" prop

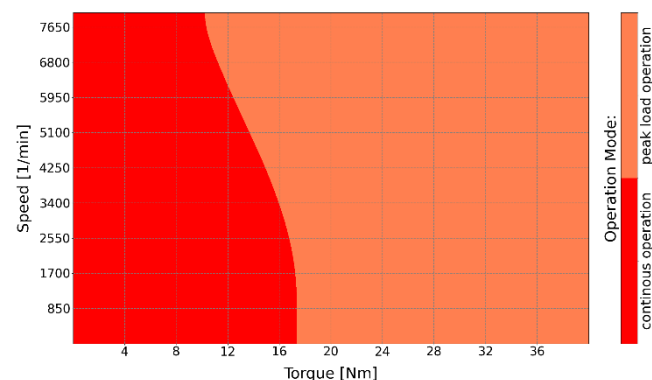
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 60-260, MST 60-290, MST 60-130, MST 80-240, MST 80-350, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

### Options & Customization

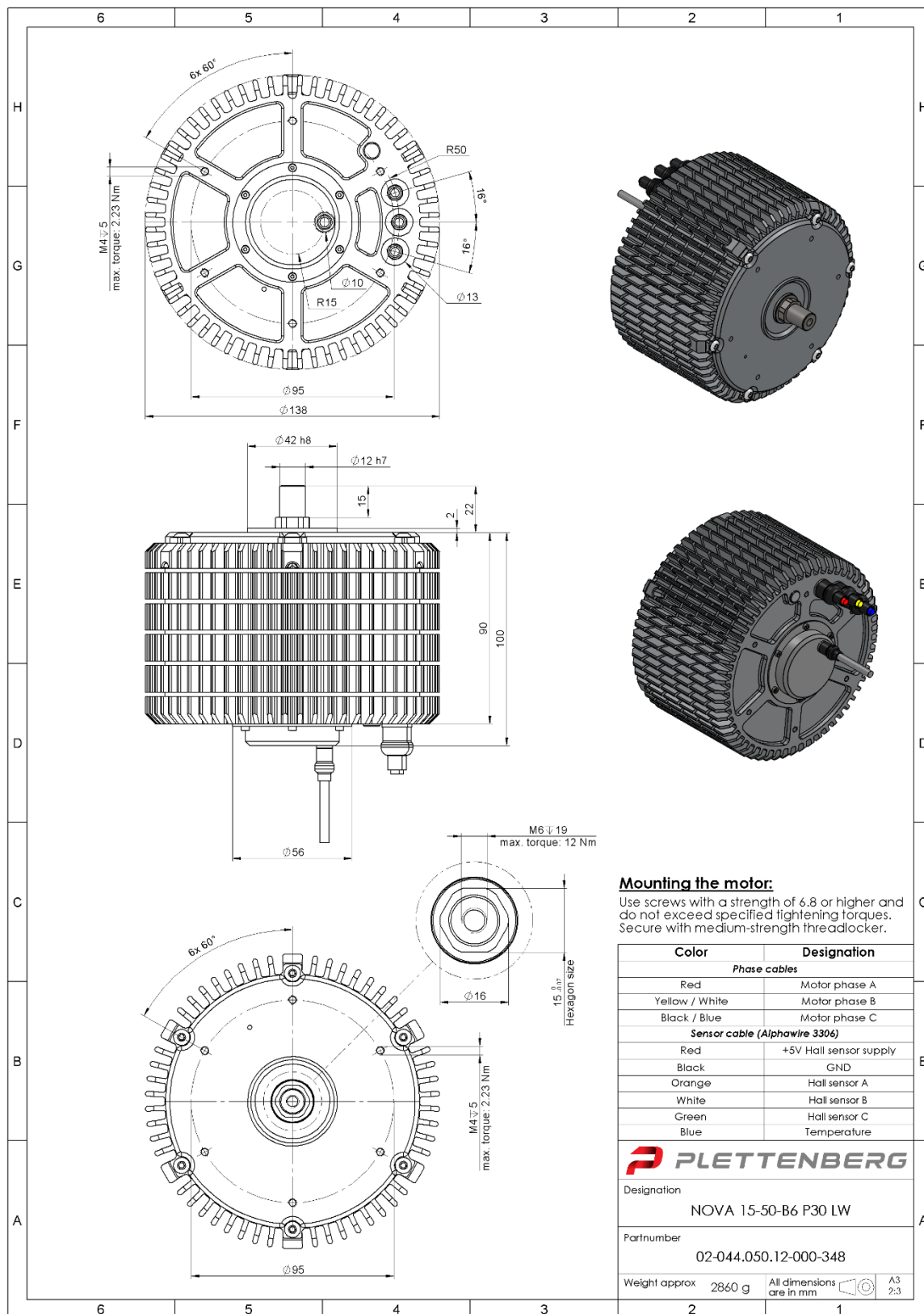
- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification

Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-50-B6 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-50-B6 P30 WK

Inrunner BLDC motor with closed housing

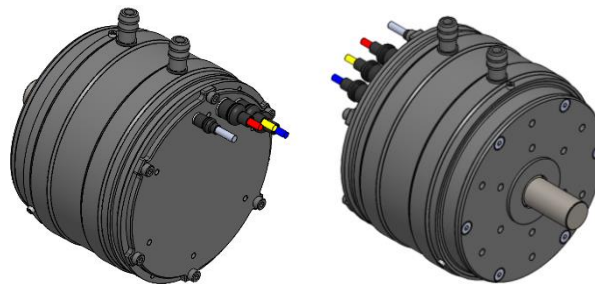


### Overview

The NOVA 15 Water-Cooled ("WK") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Wear-free position and temperature sensors included in standard



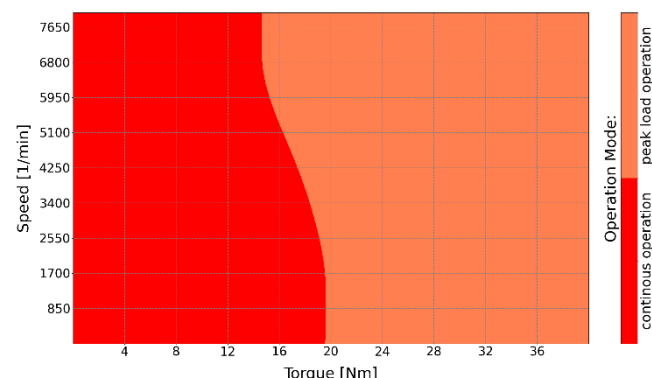
### Specifications

Part number	02-044.050.01-000-351
Peak output power	15 kW
Peak torque (max. 5s) <sup>(1)</sup>	40 Nm
Max. speed	8,000 rpm
Voltage range	30-120 V
Speed constant (kV)	65 rpm/V
Diameter (ex. water inlet)	131 mm
Length	97 mm
Weight	3,200 g
Phase cable length	100 mm
Sensor cable length	400 mm
Recommended phase cable extension	8 mm <sup>2</sup> 8 AWG
Protection class	IP54
Mounting	Front & back
Direction of rotation	Both
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	6
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.

### Complementary Products

- Plettenberg ESCs: MST 60-260, MST 60-290, MST 60-130, MST 80-240, MST 80-350, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



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

### Options & Customization

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

#### Notes:

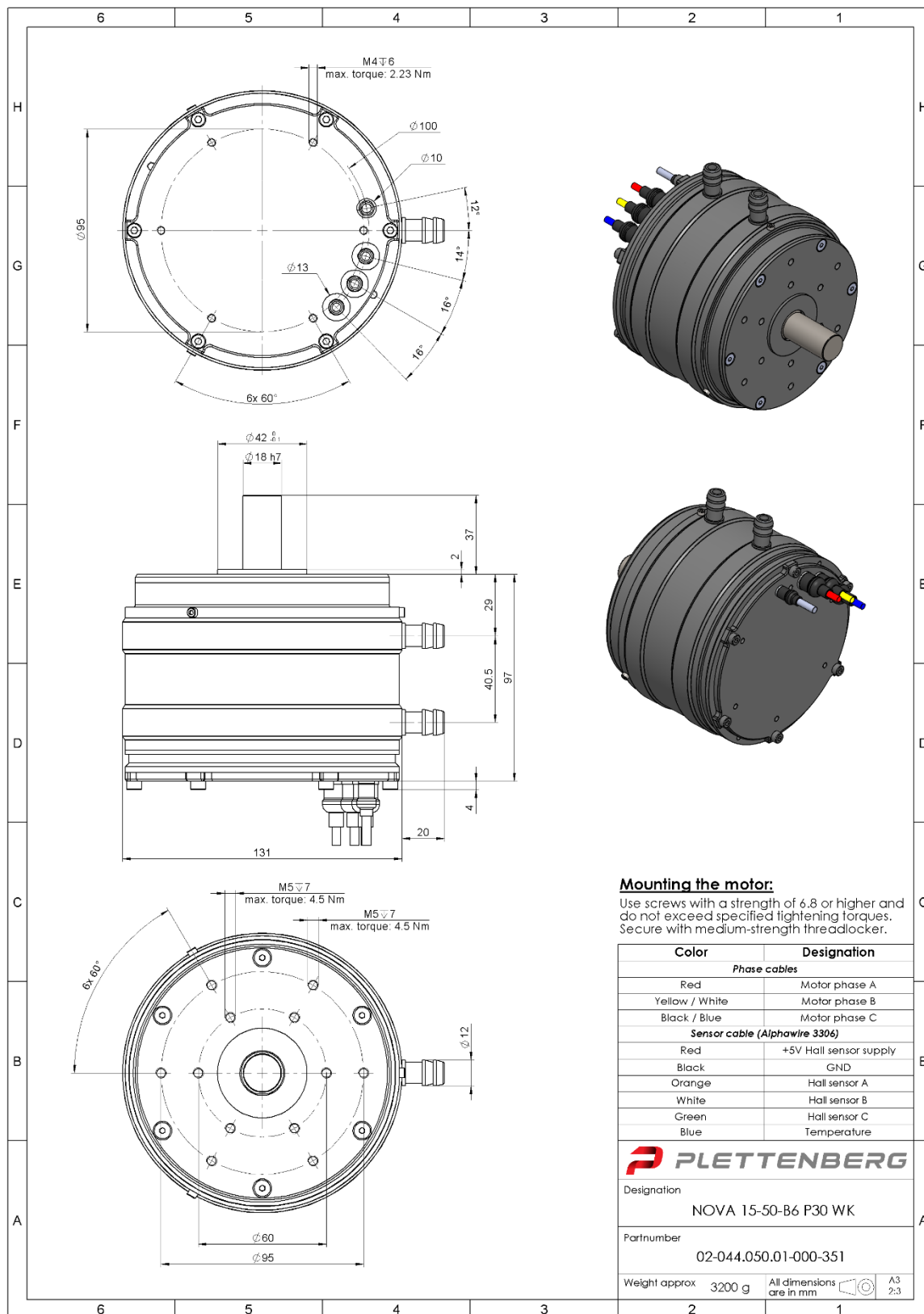
<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-50-B6 P30 WK

Inrunner BLDC motor with closed housing



### 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.

Color	Designation
<b>Phase cables</b>	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C
<b>Sensor cable (Alphawire 3306)</b>	
Red	+5V Hall sensor supply
Black	GND
Orange	Hall sensor A
White	Hall sensor B
Green	Hall sensor C
Blue	Temperature

Designation	NOVA 15-50-B6 P30 WK
Partnumber	02-044.050.01-000-351
Weight approx	3200 g
All dimensions are in mm	
A3 2:3	

Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-50-B8 P30 LW

Inrunner BLDC motor with closed housing

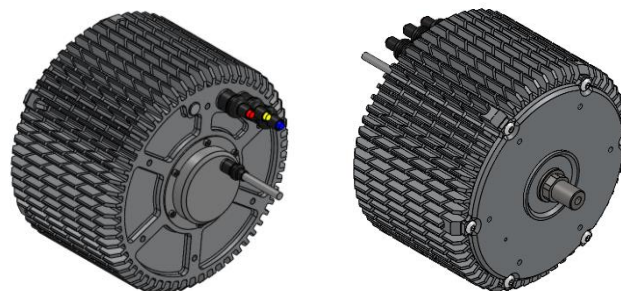


### Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-044.050.12-000-349
Peak output power	15 kW
Peak torque (max. 5s) <sup>(1)</sup>	40 Nm
Max. speed	8,000 rpm
Voltage range	30-160 V
Speed constant (kV)	48 rpm/V
Diameter	138 mm
Length	90 mm
Weight	2,860 g
Phase cable length	100 mm
Sensor cable length	400 mm
Recommended phase cable extension	6 mm <sup>2</sup>
	10 AWG
Protection class	IP54
Mounting	Front & back
Direction of rotation	Both
Cooling	Air 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	8
Peak thrust	67 kg with 42x15.2" prop

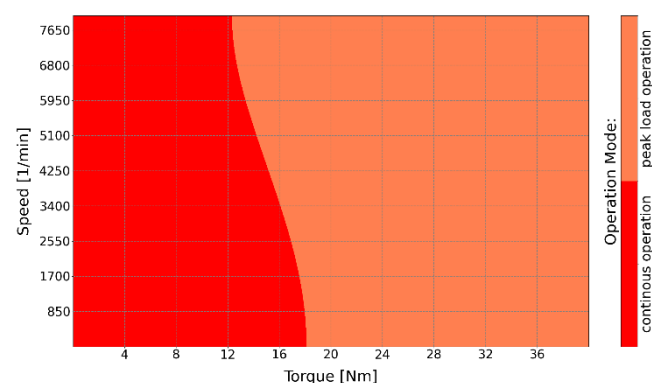
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 60-260, MST 60-290, MST 60-130, MST 80-240, MST 80-350, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

### Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification

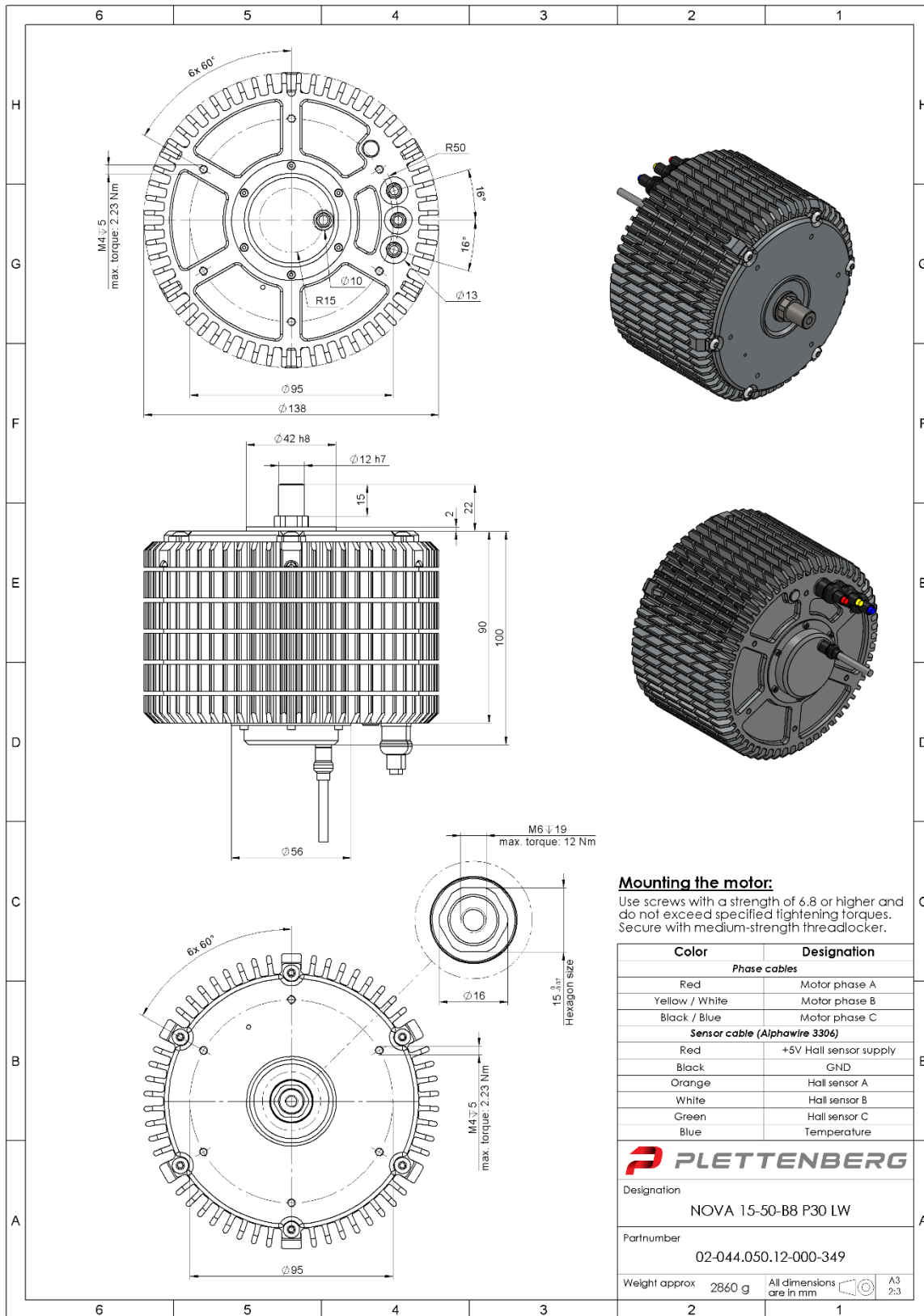
Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.





# NOVA 15-50-B8 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-50-B8 P30 WK

Inrunner BLDC motor with closed housing

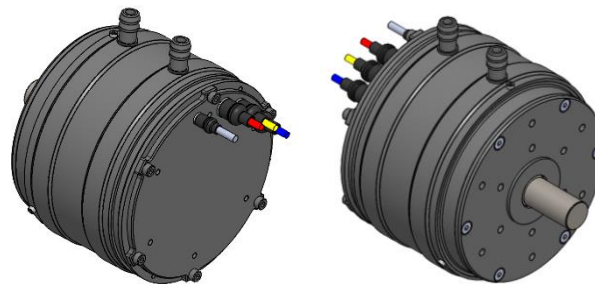


### Overview

The NOVA 15 Water-Cooled ("WK") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Wear-free position and temperature sensors included in standard



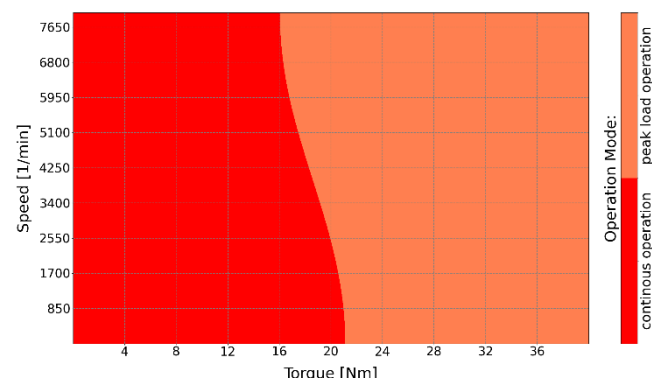
### Specifications

Part number	02-044.050.01-000-352	
Peak output power	15	kW
Peak torque (max. 5s) <sup>(1)</sup>	40	Nm
Max. speed	8,000	rpm
Voltage range	30-160	V
Speed constant (kV)	48	rpm/V
Diameter (ex. water inlet)	131	mm
Length	97	mm
Weight	3,200	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	6	mm <sup>2</sup>
	10	AWG
Protection class	IP54	
Mounting	Front & back	
Direction of rotation	Both	
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	8	
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.	

### Complementary Products

- Plettenberg ESCs: MST 60-260, MST 60-290, MST 60-130, MST 80-240, MST 80-350, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



### Options & Customization

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

#### Notes:

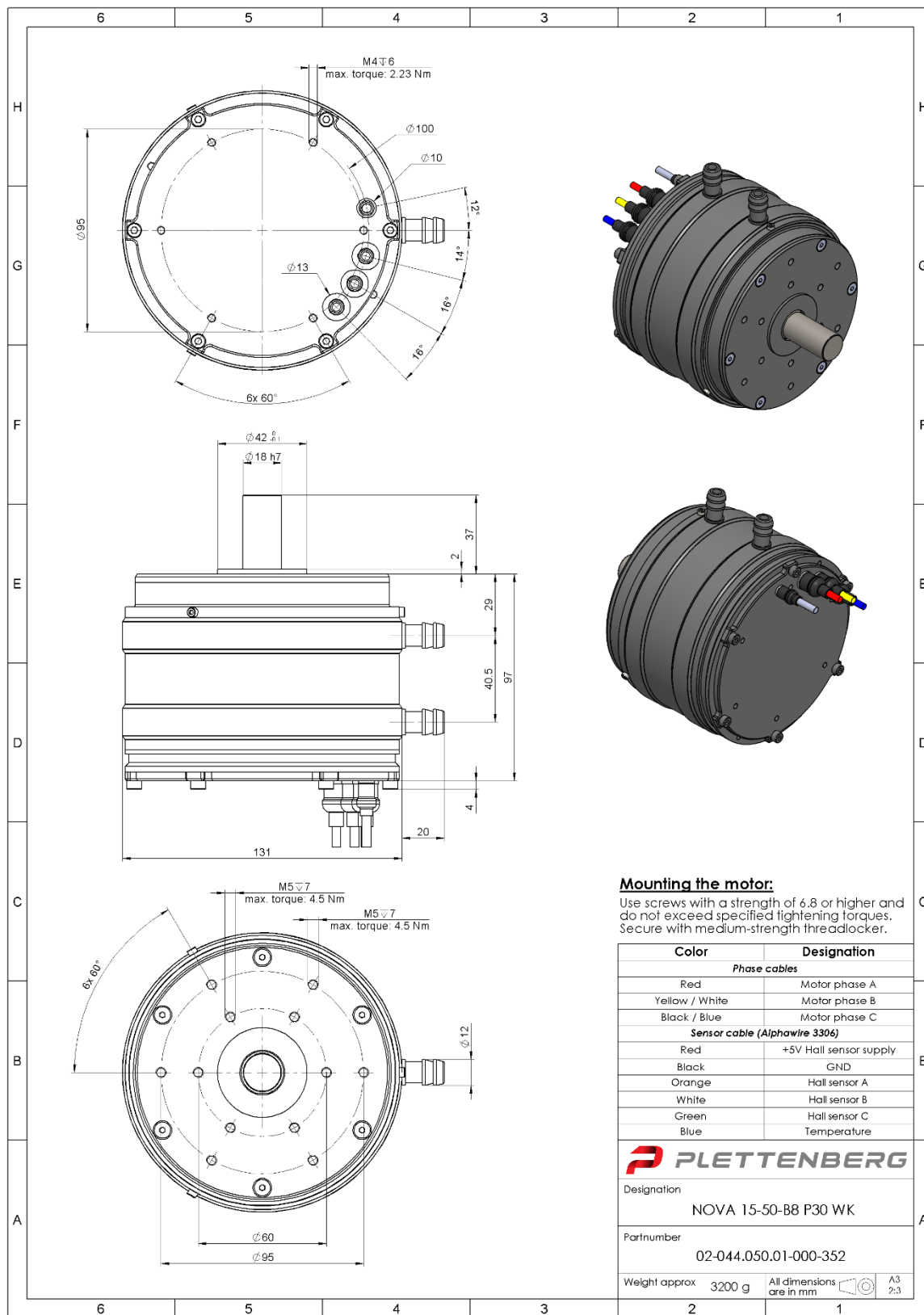
<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-50-B8 P30 WK

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-70-A2 P30 LW

Inrunner BLDC motor with closed housing

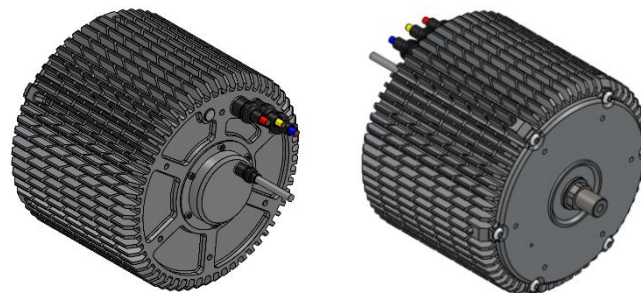


### Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part Number	02-044.070.12-000-354
Peak output power	20 kW
Peak torque (max. 5s) <sup>(1)</sup>	55 Nm
Max. speed	8,000 rpm
Voltage range	30-100 V
Speed constant (kV)	83 rpm/V
Diameter	138 mm
Length	110 mm
Weight	3,660 g
Phase cable length	100 mm
Sensor cable length	400 mm
Recommended phase cable extension	10 mm <sup>2</sup> 7 AWG
Protection class	IP54
Mounting	Front & back
Direction of rotation	Both
Cooling	Air 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	2
Peak thrust	90 kg with 48x16.4" prop

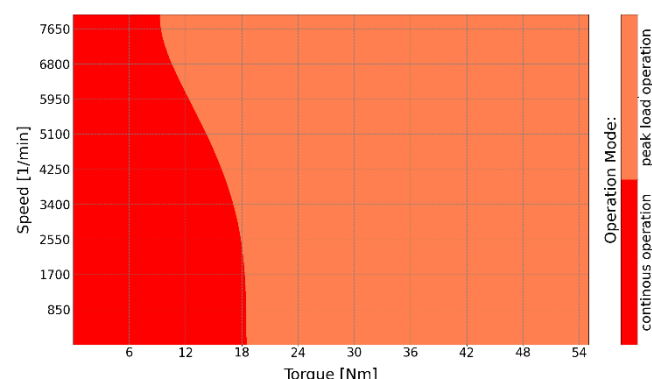
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 80-240, MST 80-350, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

### Options & Customization

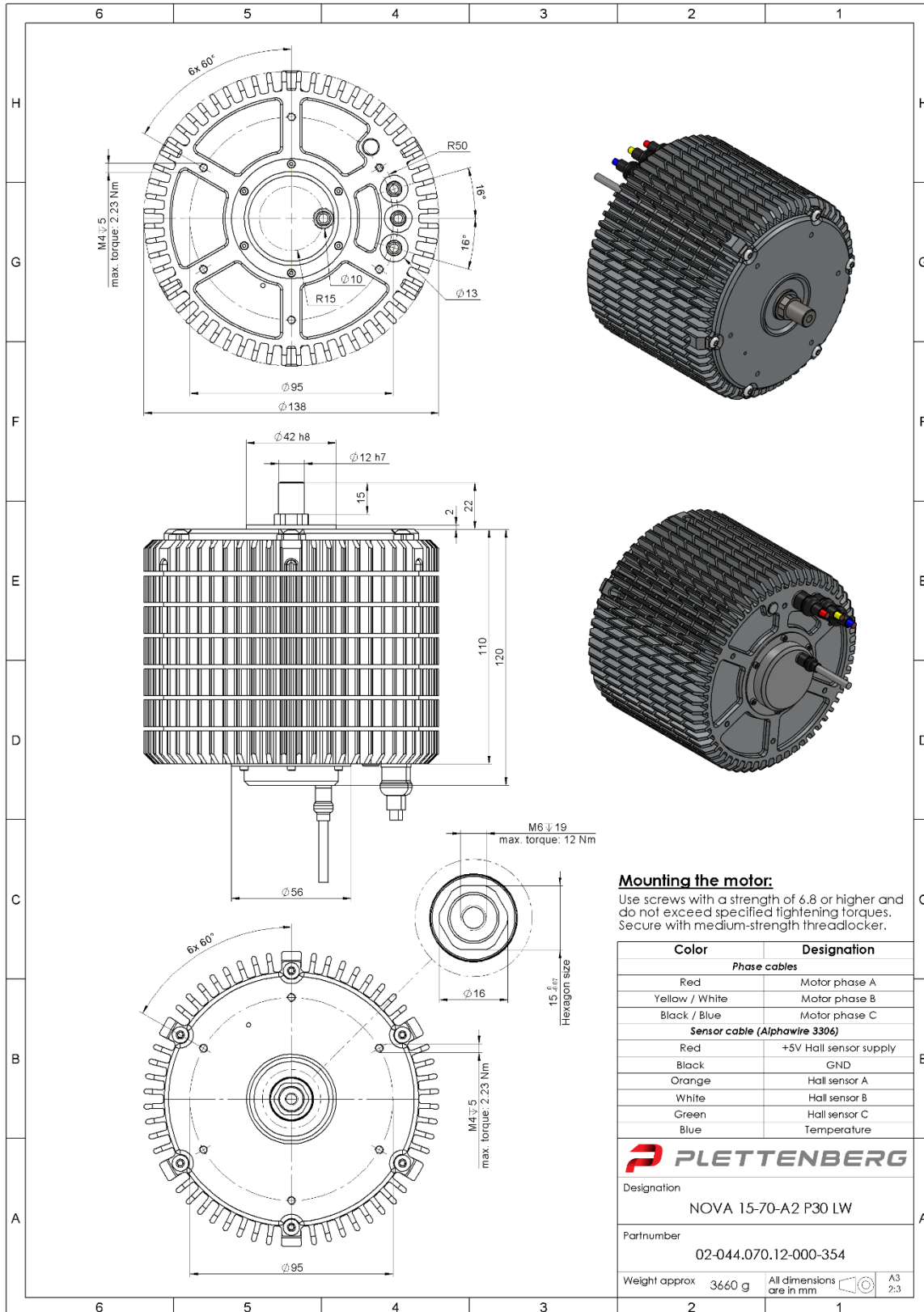
- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification

Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 15-70-A2 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



## NOVA Series

# NOVA 15-70-B6 P30 LW

Inrunner BLDC motor with closed housing

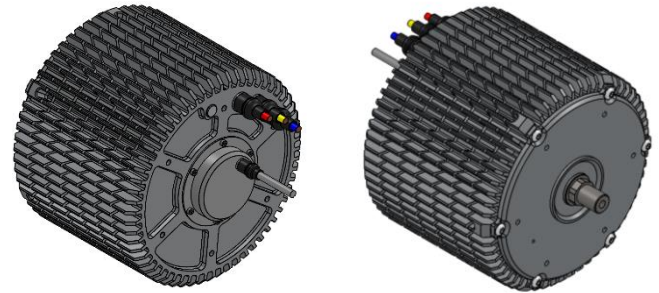


### Overview

The NOVA 15 Light-Weight ("LW") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

Part number	02-044.070.12-000-353
Peak output power	20 kW
Peak torque (max. 5s) <sup>(1)</sup>	55 Nm
Max. speed	8,000 rpm
Voltage range	40-160 V
Speed constant (kV)	48 rpm/V
Diameter	138 mm
Length	110 mm
Weight	3,660 g
Phase cable length	100 mm
Sensor cable length	400 mm
Recommended phase cable extension	8 mm <sup>2</sup> AWG
Protection class	IP54
Mounting	Front & back
Direction of rotation	Both
Cooling	Air 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	6
Peak thrust	90 kg with 48x16.4" prop

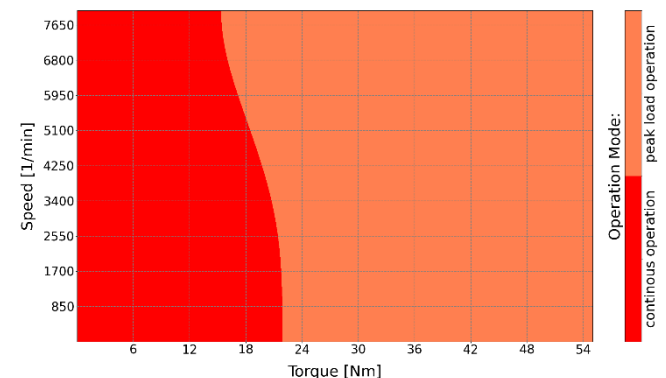
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12
- Plettenberg ESCs: MST 80-240, MST 80-350, MST 140-200
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

### Options & Customization

- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification

Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.

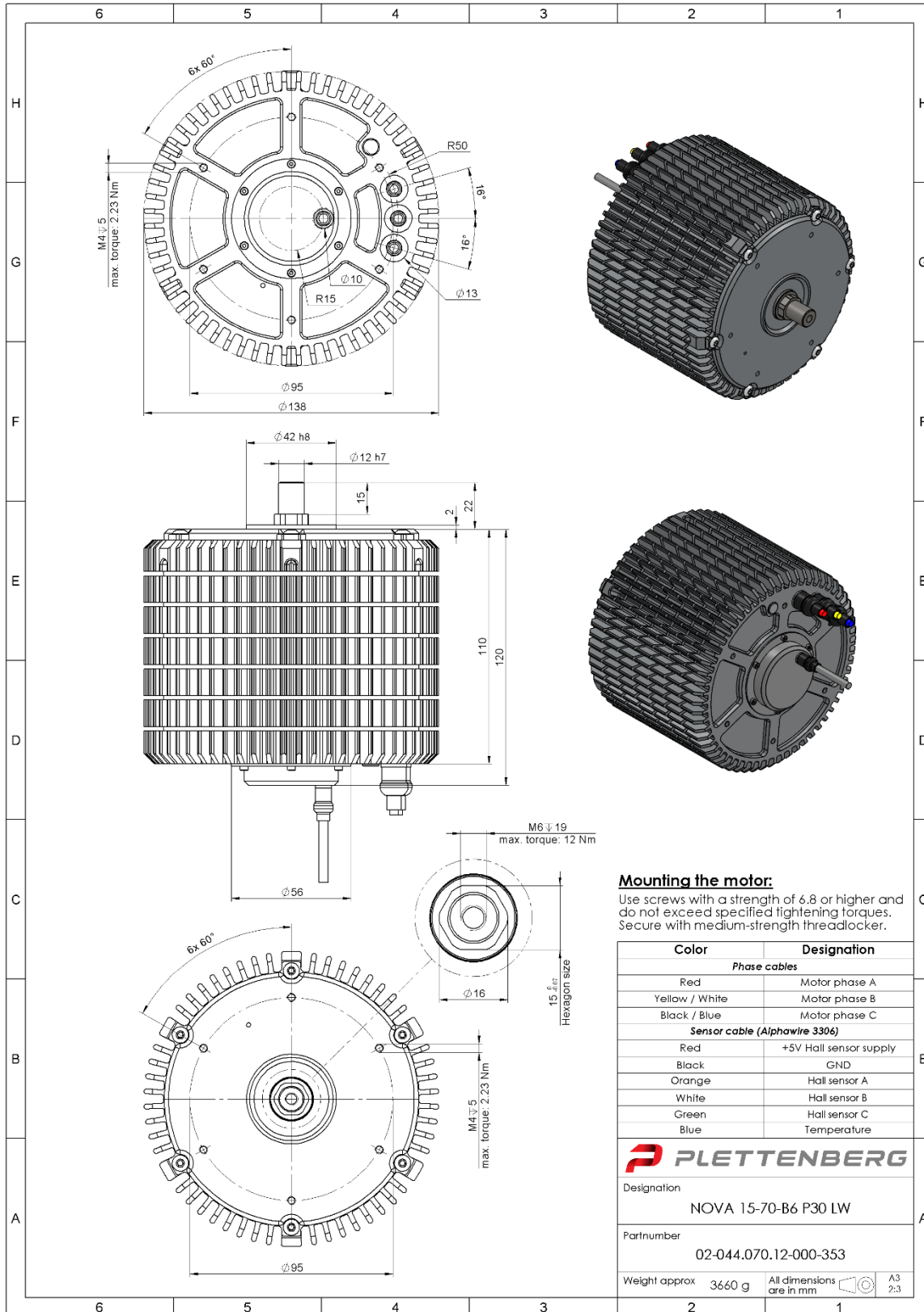


NOVA Series



# NOVA 15-70-B6 P30 LW

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 30-50-B4 P50

Inrunner BLDC motor with closed housing

## Overview

The NOVA 30 is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



## Specifications

Part number	02-043.050.10-000-096	
Peak output power	30	kW
Peak torque (max. 5s) <sup>(1)</sup>	80	Nm
Max. speed	5,000	rpm
Voltage range	30-120	V
Speed constant (kV)	37	rpm/V
Diameter	198	mm
Length	93	mm
Weight	5,600	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	16	mm <sup>2</sup>
	5	AWG
Protection class	IP53	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	50	
Number of windings	4	
Peak thrust	115 kg with 60x21" prop	

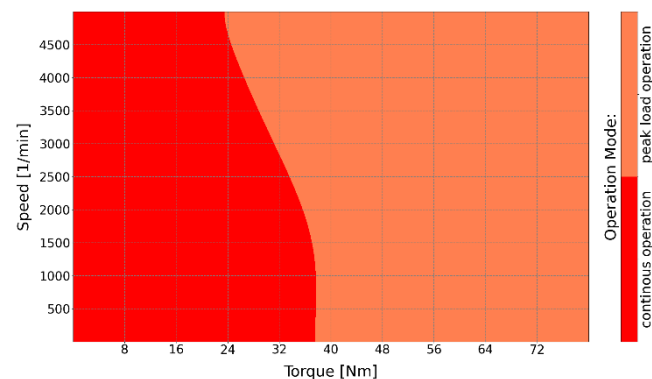
### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

## Complementary Products

- Plettenberg propeller coupling: PC LW 6K 16
- Plettenberg ESCs: MST 140-200, MST 140-250 WK
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

## Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

## Options & Customization

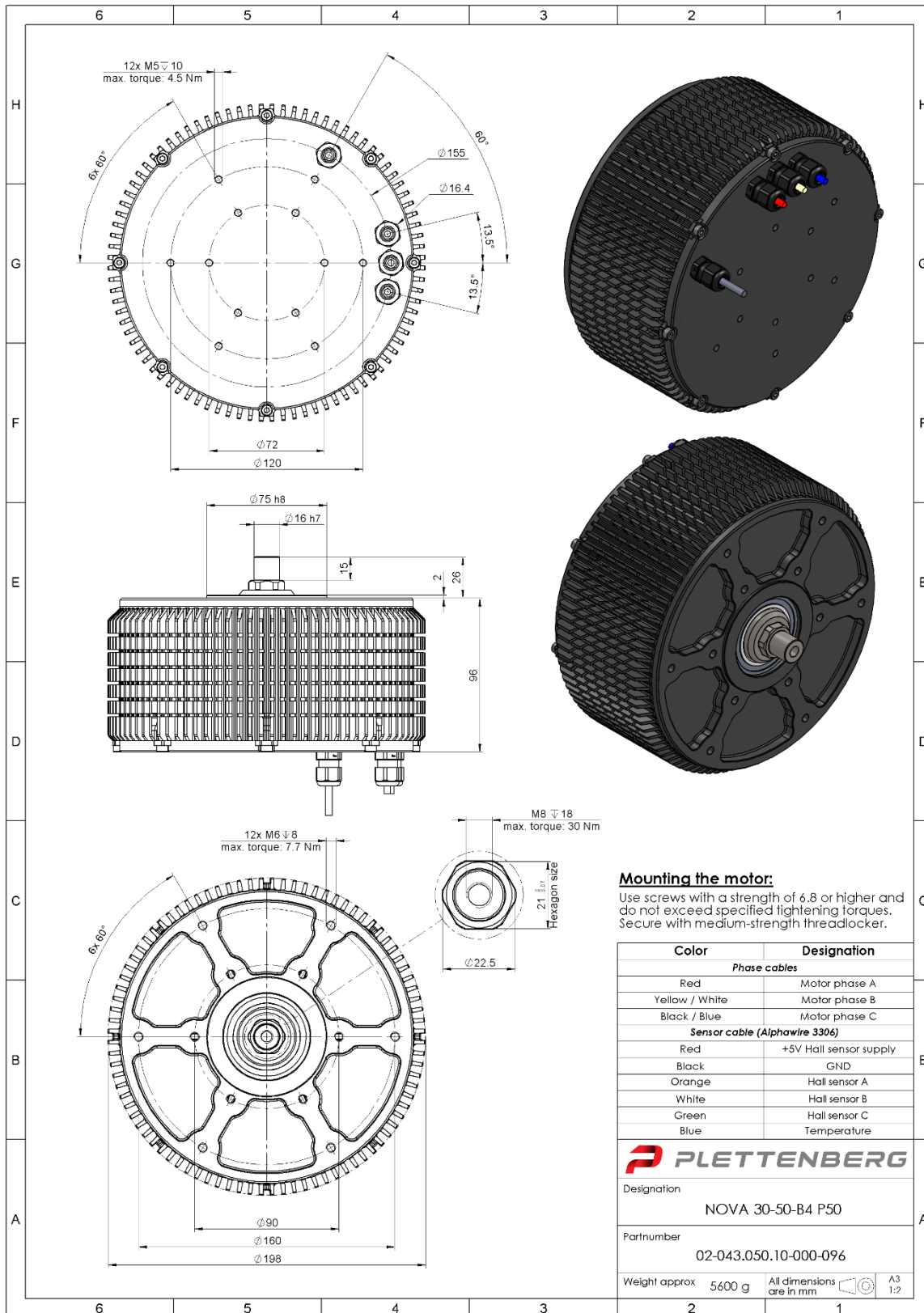
- Custom winding/kV versions
- MIL-STD 810H or RTCA DO160 qualification
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study





# NOVA 30-50-B4 P50

Inrunner BLDC motor with closed housing



## NOVA Series

# NOVA 30-50-B4 P50 WK

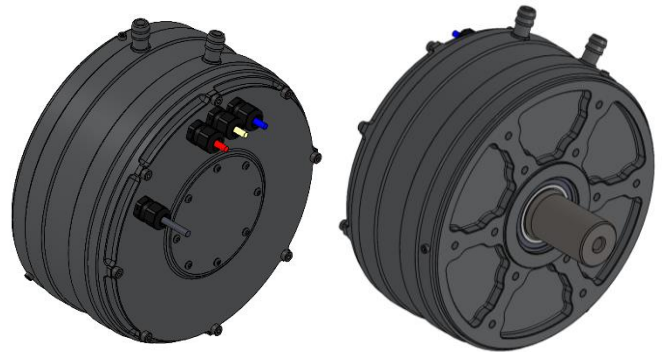
Inrunner BLDC motor with closed housing

### Overview

The NOVA 30 Water-Cooled ("WK") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications.

### Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard



### Specifications

Part number	02-043.050.01-000-098	
Peak output power	30	kW
Peak torque (max. 5s) <sup>(1)</sup>	80	Nm
Max. speed	5,000	rpm
Voltage range	30-120	V
Speed constant (kV)	37	rpm/V
Diameter (ex. water inlet)	197	mm
Length	93	mm
Weight	6,380	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	16	mm <sup>2</sup>
	5	AWG
Protection class	IP53	
Mounting	Front	
Direction of rotation	Both	
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	50	
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.	

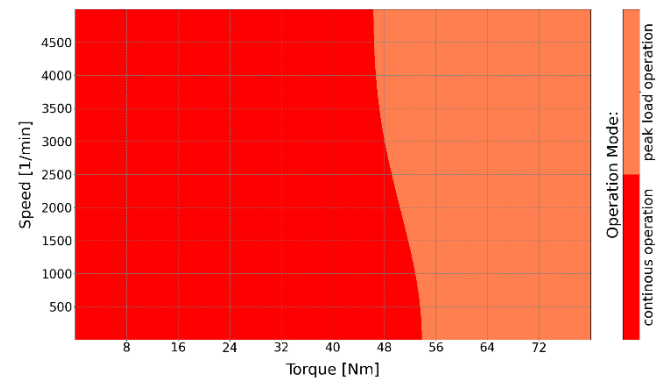
#### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

### Complementary Products

- Plettenberg ESCs: MST 140-200, MST 140-250 WK
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

### Heatmap



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

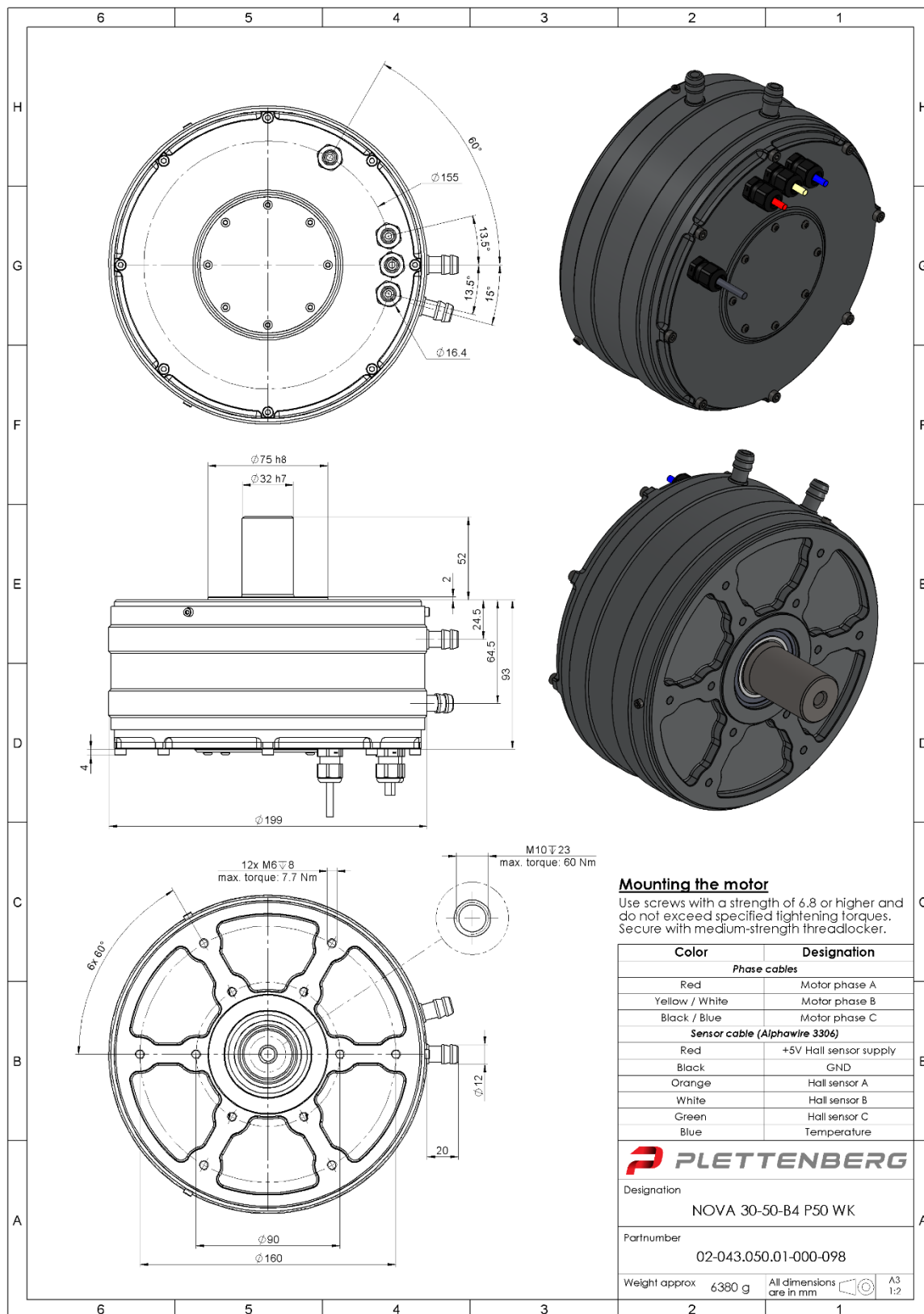
### Options & Customization

- 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/low temperature versions
- High RPM versions



# NOVA 30-50-B4 P50 WK

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettenbergmotors.com / sales@plettenbergmotors.com  
© 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# NOVA 30-50-B10 P50

Inrunner BLDC motor with closed housing

## Overview

The NOVA 30 is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



## Specifications

Part number	02-043.050.10-000-097	
Peak output power	30	kW
Peak torque (max. 5s) <sup>(1)</sup>	80	Nm
Max. speed	5,000	rpm
Voltage range	100-350	V
Speed constant (kV)	15	rpm/V
Diameter	198	mm
Length	93	mm
Weight	5,600	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	6	mm <sup>2</sup>
	10	AWG
Protection class	IP53	
Mounting	Front & back	
Direction of rotation	Both	
Cooling	Air 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	50	
Number of windings	10	
Peak thrust	115 kg with 60x21" prop	

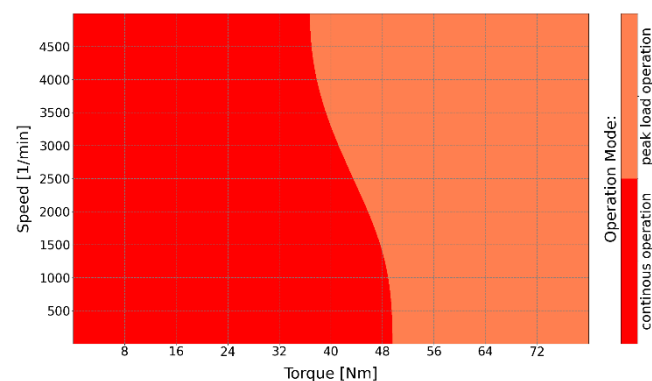
Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

## Complementary Products

- Plettenberg propeller coupling: PC LW 6K 16
- Plettenberg ESCs: MST 140-200, MST 140-250 WK, MST 400-200 WK, MST 400-133
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

## Heatmap



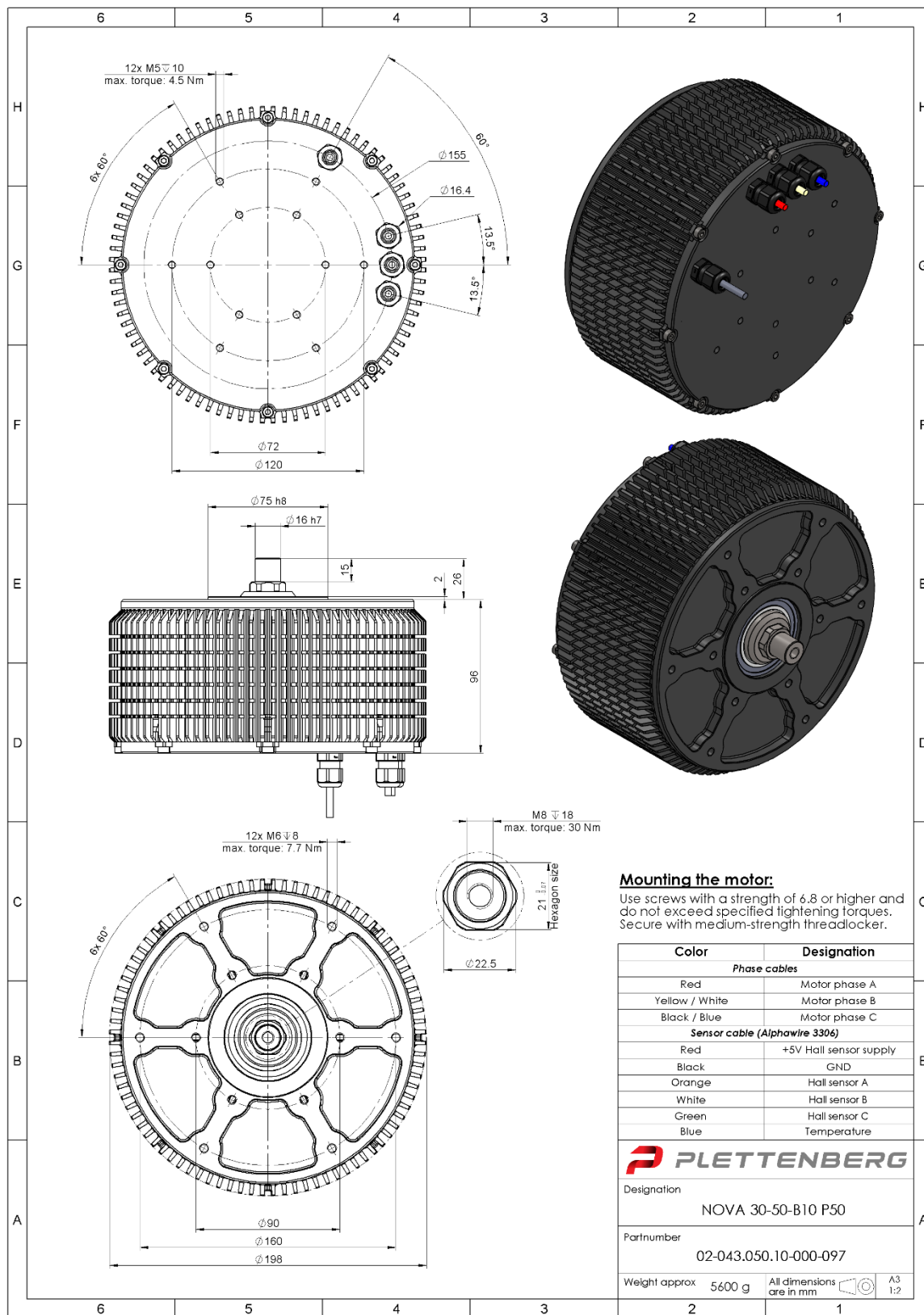
## Options & Customization

- 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 or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study



# NOVA 30-50-B10 P50

Inrunner BLDC motor with closed housing



# NOVA 30-50-B10 P50 WK

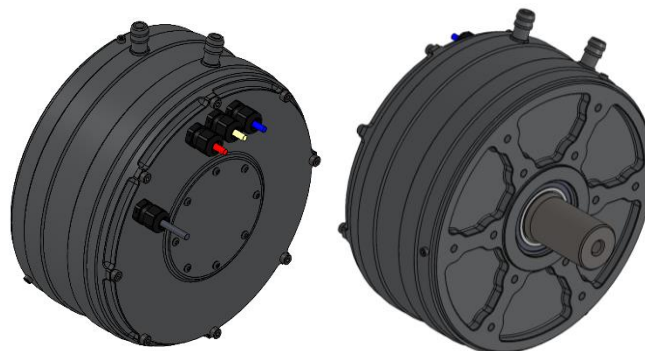
Inrunner BLDC motor with closed housing

## Overview

The NOVA 30 Water-Cooled ("WK") is from our family of super rugged inrunner BLDC motors and has been specifically designed for mission critical applications.

## Features

- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard



## Specifications

Part number	02-043.050.01-000-099	
Peak output power	30	kW
Peak torque (max. 5s) <sup>(1)</sup>	80	Nm
Max. speed	5,000	rpm
Voltage range	100-350	V
Speed constant (kV)	15	rpm/V
Diameter (ex. water inlet)	197	mm
Length	93	mm
Weight	6,380	g
Phase cable length	100	mm
Sensor cable length	400	mm
Recommended phase cable extension	6	mm <sup>2</sup>
	10	AWG
Protection class	IP53	
Mounting	Front	
Direction of rotation	Both	
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	50	
Number of windings	10	
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.	

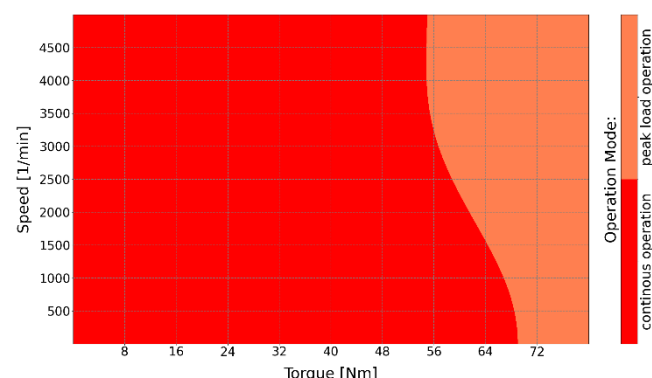
### Notes:

<sup>(1)</sup> Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.

## Complementary Products

- Plettenberg ESCs: MST 140-200, MST 140-250 WK, MST 400-200 WK, MST 400-133
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

## Heatmap



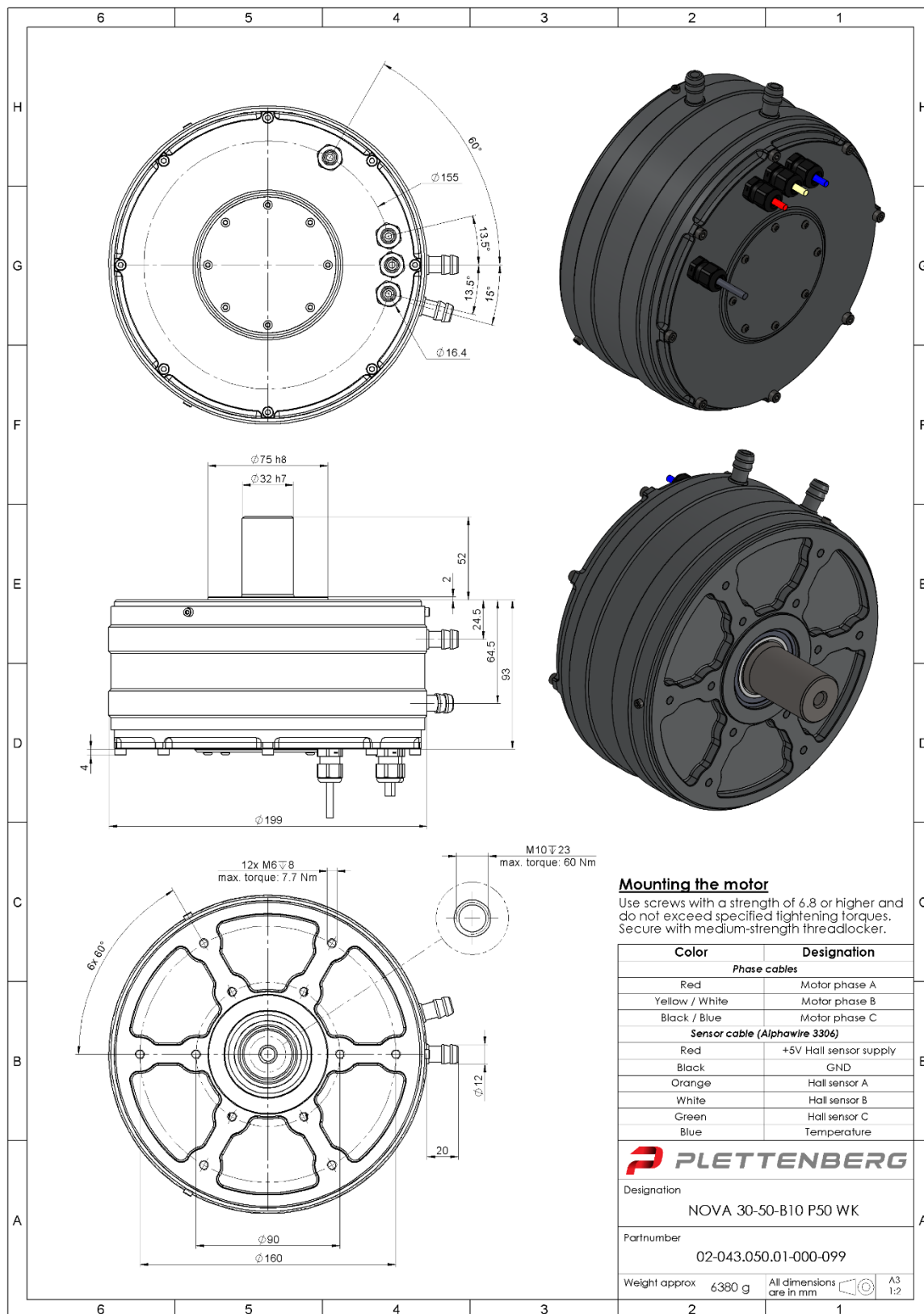
## Options & Customization

- 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/low temperature versions
- High RPM versions



# NOVA 30-50-B10 P50 WK

Inrunner BLDC motor with closed housing



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# ORBIT SERIES

Outrunner BLDC motors



## ORBIT Series

# ORBIT 15-30-B6 P20

Outrunner BLDC motor

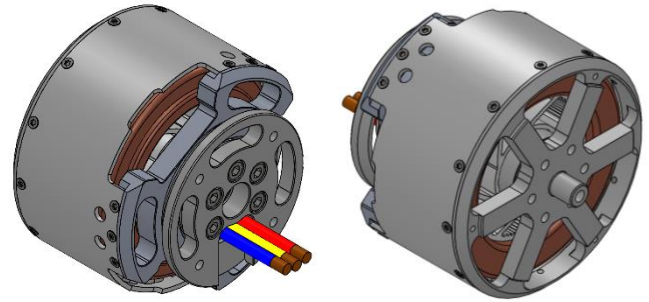


### Overview

The ORBIT 15 is from our family of weight optimized rugged outrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

### Features

- Ultra-light housing for weight sensitive applications
- Designed for high shock and vibration loads
- Increased robustness through three bearing design, adding additional support to housing
- Useful for applications with high torque requirements
- Designed for use with sensorless ESCs



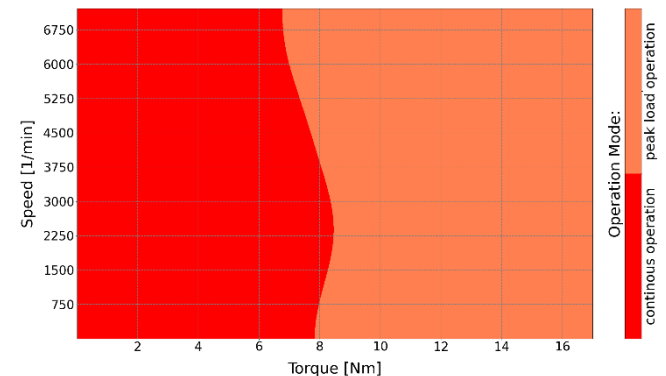
### Specifications

Part number	03-049.030.00-000-042
Peak output power	9 kW
Peak torque (max. 5s)	17 Nm
Max. speed	7,000 rpm
Voltage range	15-36 V
Speed constant (kV)	185 rpm/V
Diameter	103 mm
Length	74.5 mm
Weight	1,590 g
Phase cable length	100 mm
Recommended phase cable extension	10 mm <sup>2</sup> 7 AWG
Mounting	Back
Direction of rotation	Both
Cooling	Air cooled
Ambient temperature range	-20 to +60 °C
Number of poles	20
Number of windings	6
Peak thrust	40 kg with 32x10.6" prop

### Complementary Products

- Sensorless third party ESCs (e.g. Hargrave/APD or Allocortech)

### Heatmap



### Options & Customization

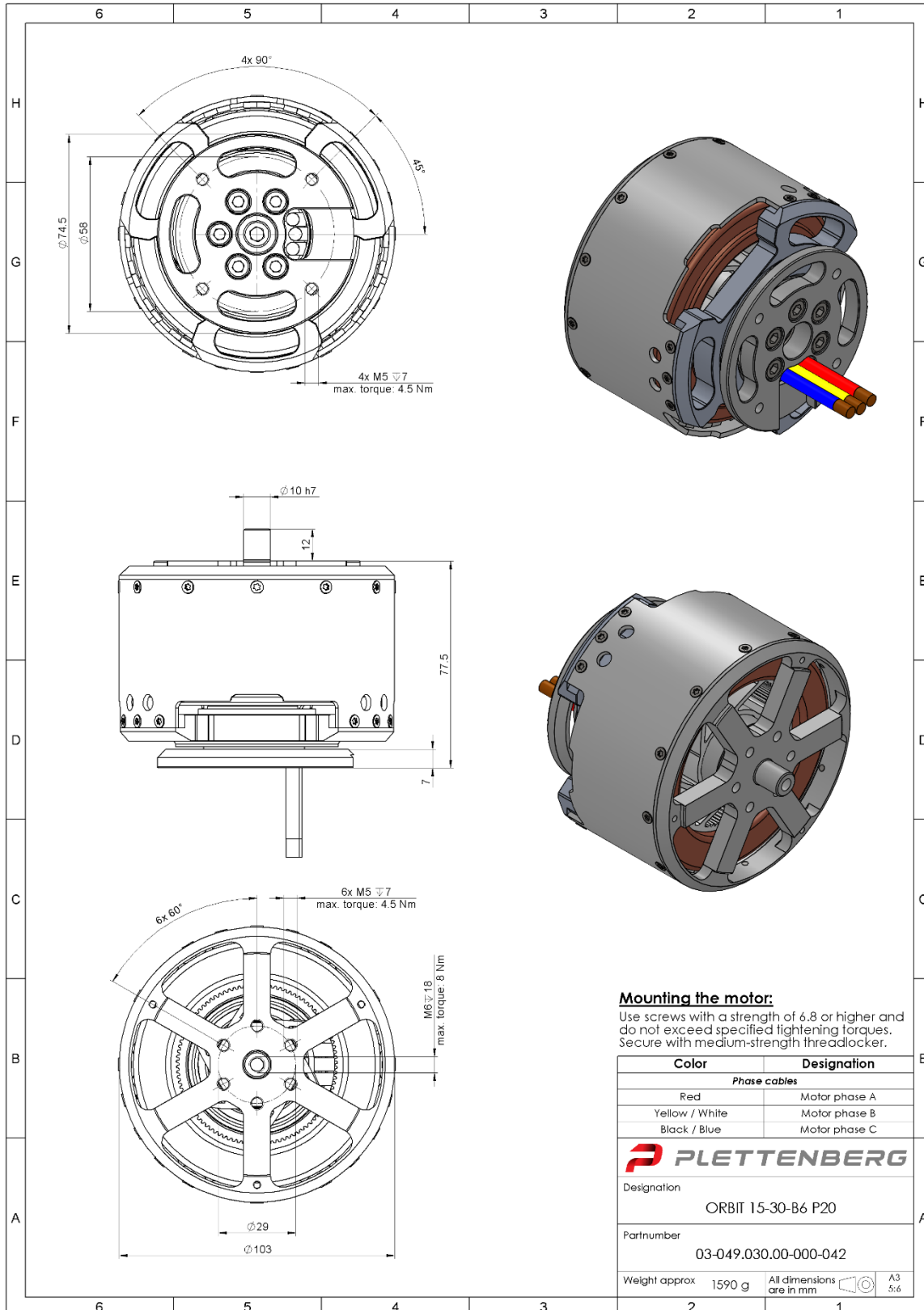
- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Position and temperature sensors

Plettberg Elektromotoren GmbH & Co. KG  
Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
www.plettbergmotors.com / sales@plettbergmotors.com  
© 2025 Plettberg Elektromotoren GmbH & Co. KG. All rights reserved.



# ORBIT 15-30-B6 P20

Outrunner BLDC motor



**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.

Color	Designation
<i>Phase cables</i>	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C

Designation	ORBIT 15-30-B6 P20
Partnumber	03-049.030.00-000-042
Weight approx	1590 g
All dimensions are in mm	



# ORBIT 15-30-B8 P20

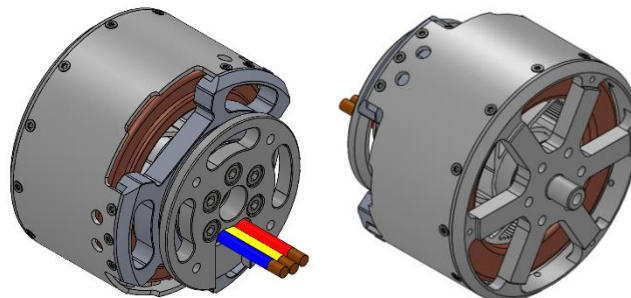
Outrunner BLDC motor

## Overview

The ORBIT 15 is from our family of weight optimized outrunner BLDC motors and has been specifically designed for the most demanding applications, including uncrewed systems and aerospace.

## Features

- Ultra-light housing for weight sensitive applications
- Increased robustness through three bearing design, adding additional support to housing
- Useful for applications with high torque requirements
- Designed for use with sensorless ESCs



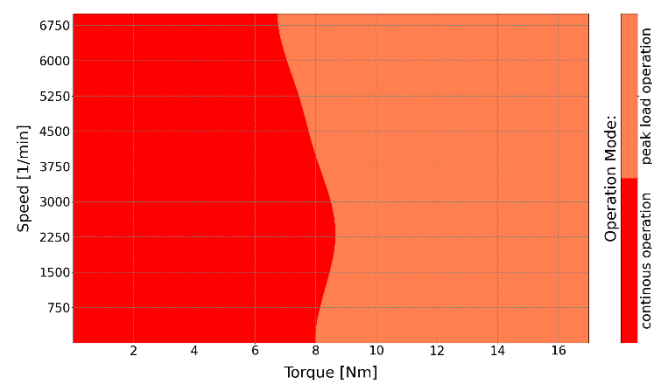
## Specifications

Part number	03-049.030.00-000-045	
Peak output power	9	kW
Peak torque (max. 5s)	17	Nm
Max. speed	7,000	rpm
Voltage range	15-50	V
Speed constant (kV)	139	rpm/V
Diameter	103	mm
Length	74.5	mm
Weight	1,590	g
Phase cable length	100	mm
Recommended phase cable extension	8	mm <sup>2</sup>
	8	AWG
Mounting	Back	
Direction of rotation	Both	
Cooling	Air cooled	
Ambient temperature range	-20 to +60	°C
Number of poles	20	
Number of windings	8	
Peak thrust	40 kg with 32x10.6" prop	

## Complementary Products

- Sensorless third party ESCs (e.g. Hargrave/APD or Allocortech)

## Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

## Options & Customization

- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Position and temperature sensors

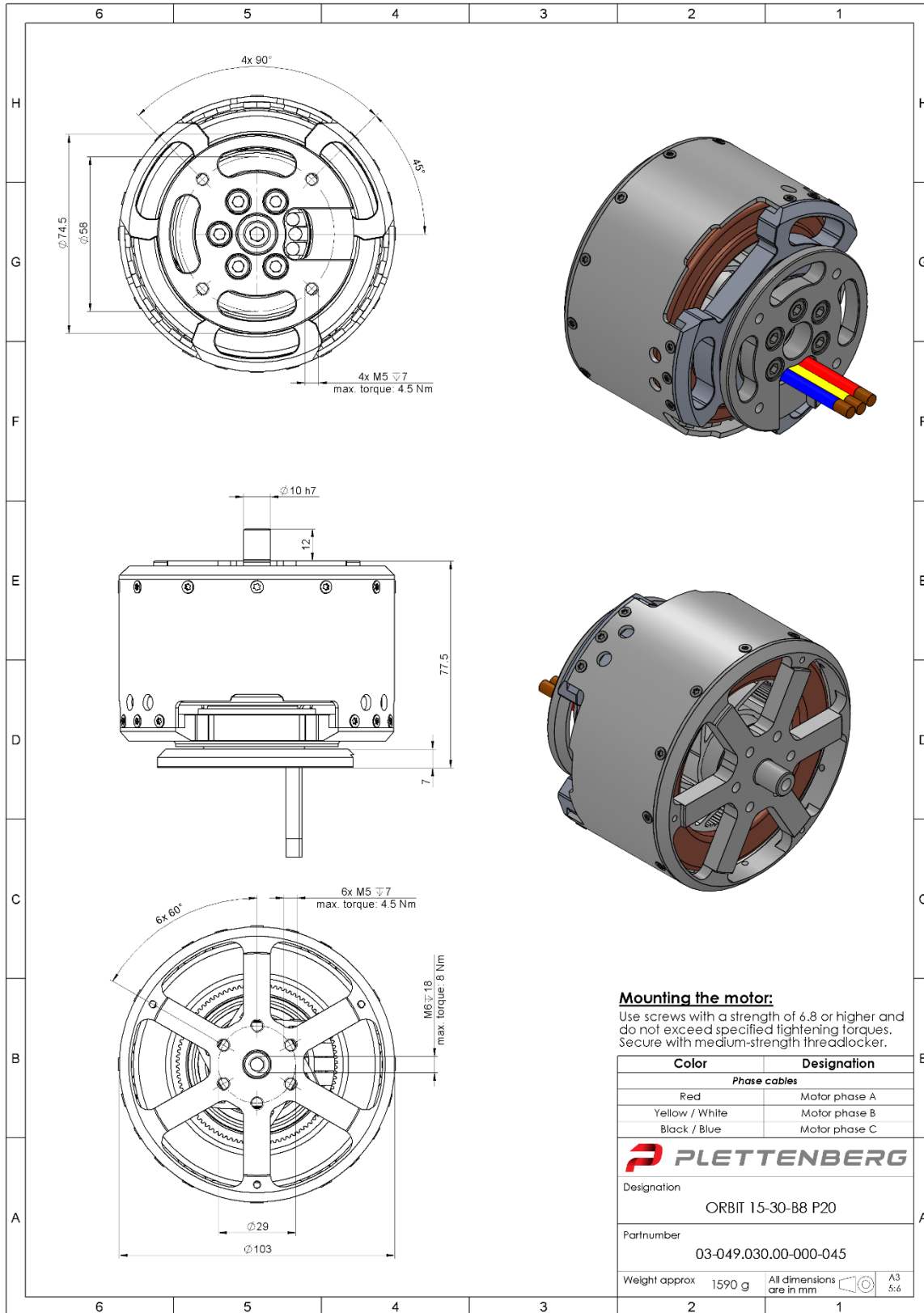


ORBIT Series



# ORBIT 15-30-B8 P20

Outrunner BLDC motor



**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.

Color	Designation
<i>Phase cables</i>	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C

<b>PLETTENBERG</b>	
Designation	
ORBIT 15-30-B8 P20	
Partnumber	
03-049.030.00-000-045	
Weight approx	1590 g
All dimensions are in mm	
A3 5:6	

Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# ORBIT 15-37-B6 P20

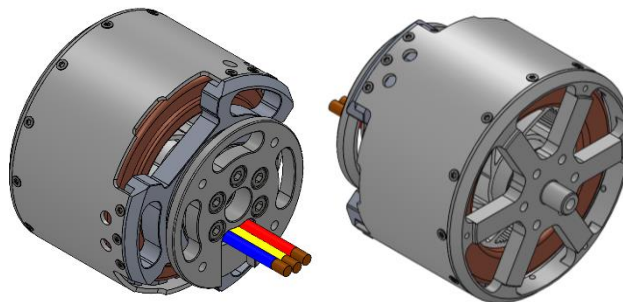
Outrunner BLDC motor

## Overview

The ORBIT 15 is from our family of weight optimized outrunner BLDC motors and has been specifically designed for the most demanding applications, including uncrewed systems and aerospace.

## Features

- Ultra-light housing for weight sensitive applications
- Increased robustness through three bearing design, adding additional support to housing
- Useful for applications with high torque requirements
- Designed for use with sensorless ESCs



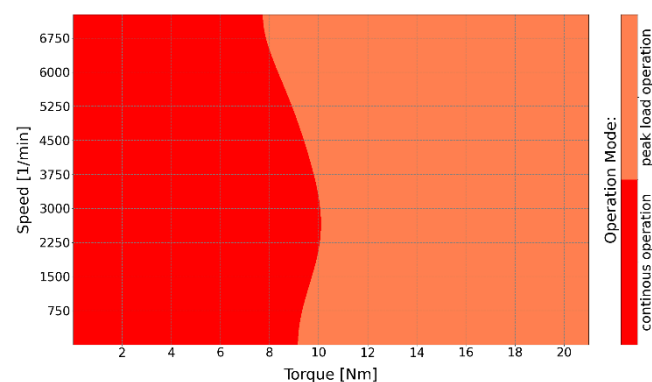
## Specifications

Part number	03-049.037.00-000-033	
Peak output power	11	kW
Peak torque (max. 5s)	21	Nm
Max. speed	7,000	rpm
Voltage range	20-45	V
Speed constant (kV)	153	rpm/V
Diameter	103	mm
Length	84.5	mm
Weight	1,900	g
Phase cable length	100	mm
Recommended phase cable extension	10	mm <sup>2</sup>
	7	AWG
Mounting	Back	
Cooling	Air cooled	
Direction of rotation	Both	
Ambient temperature range	-20 to +60	°C
Number of poles	20	
Number of windings	6	
Peak thrust	44 kg with 36x12" prop	

## Complementary Products

- Sensorless third party ESCs (e.g. Hargrave/APD or Allocortech)

## Heatmap



Note: Assuming 25°C ambient temperature and 10 m/s airflow.

## Options & Customization

- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Position and temperature sensors

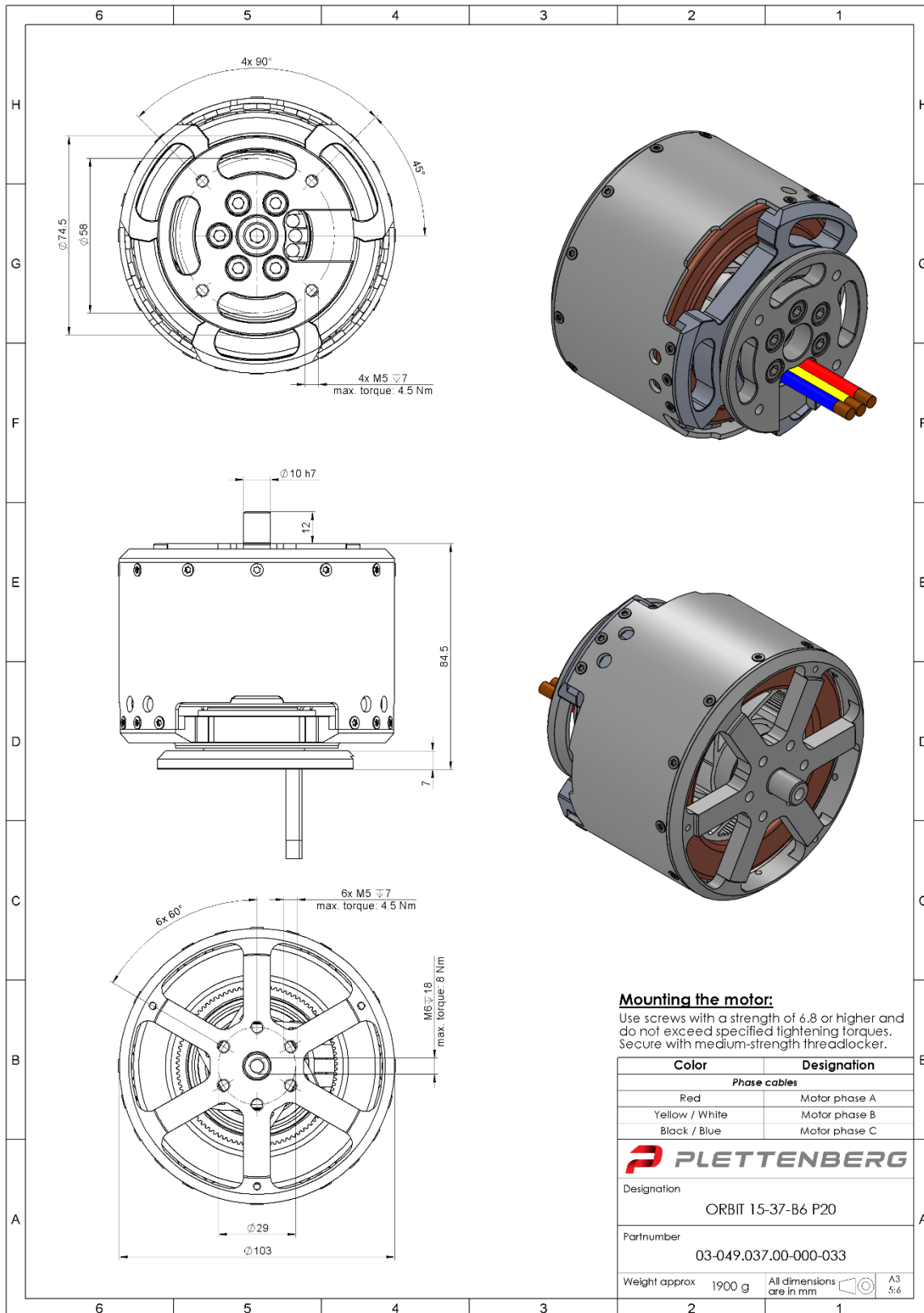


ORBIT Series



# ORBIT 15-37-B6 P20

Outrunner BLDC motor



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.



# ORBIT 15-37-B8 P20

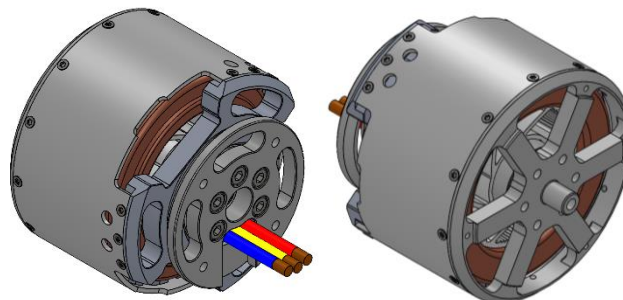
Outrunner BLDC motor

## Overview

The ORBIT 15 is from our family of weight optimized rugged outrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

## Features

- Ultra-light housing for weight sensitive applications
- Designed for high shock and vibration loads
- Increased robustness through three bearing design, adding additional support to housing
- Useful for applications with high torque requirements
- Designed for use with sensorless ESCs



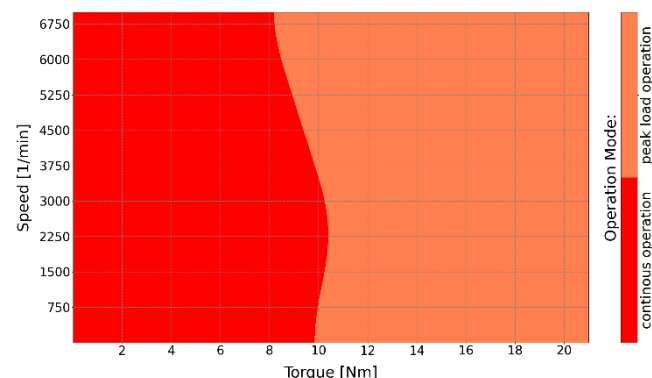
## Specifications

Part number	03-049.037.00-000-039	
Peak output power	11	kW
Peak torque (max. 5s)	21	Nm
Max. speed	7,000	rpm
Voltage range	20-60	V
Speed constant (kV)	115	rpm/V
Diameter	103	mm
Length	84.5	mm
Weight	1,900	g
Phase cable length	100	mm
Recommended phase cable extension	8	mm <sup>2</sup>
	8	AWG
Mounting	Back	
Direction of rotation	Both	
Cooling	Air cooled	
Ambient temperature range	-20 to +60	°C
Number of poles	20	
Number of windings	8	
Peak thrust	44 kg with 36x12" prop	

## Complementary Products

- Sensorless third party ESCs (e.g. Hargrave/APD or Allocortech)

## Heatmap



## Options & Customization

- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Position and temperature sensors

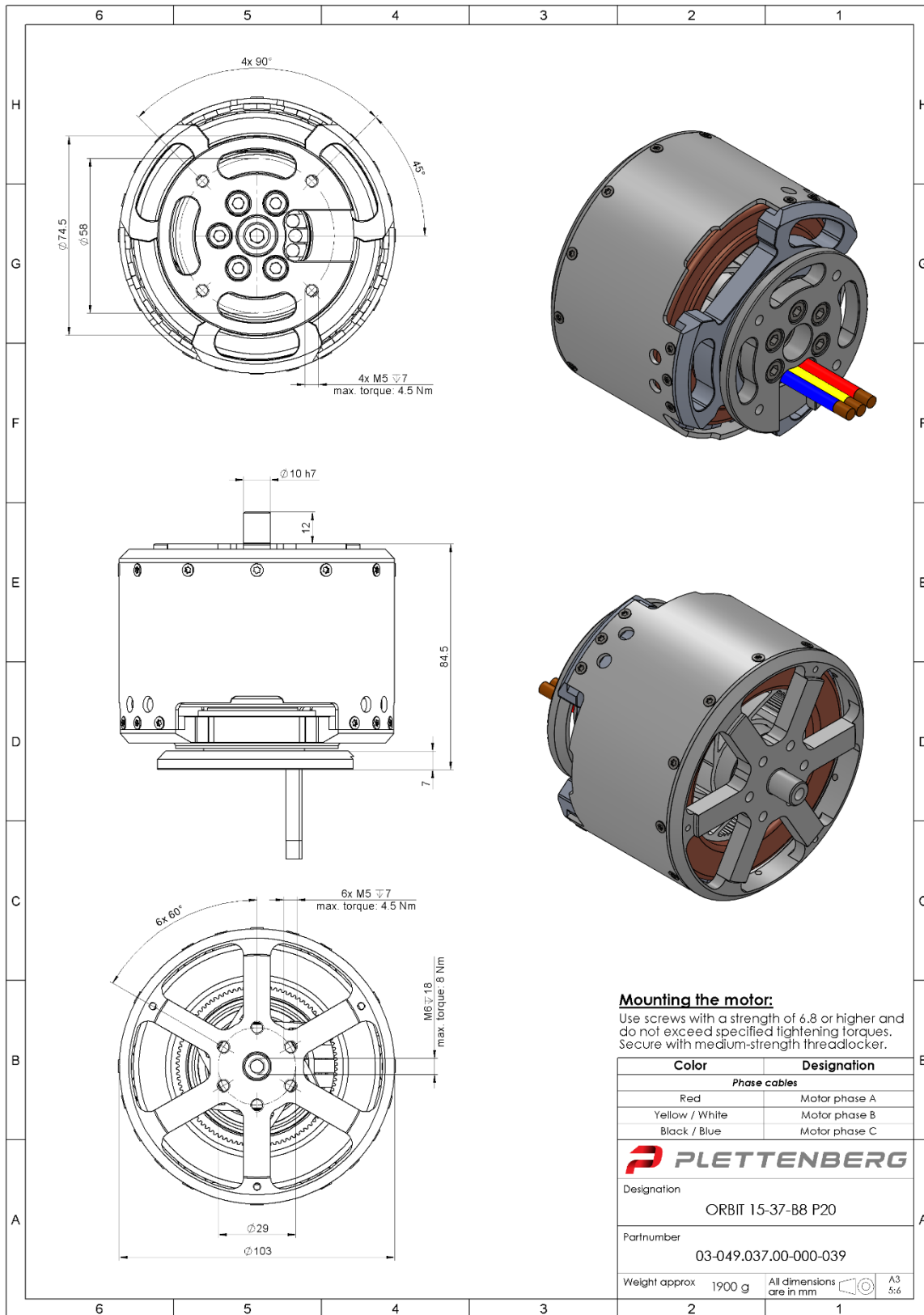


ORBIT Series



# ORBIT 15-37-B8 P20

Outrunner BLDC motor



Plettenberg Elektromotoren GmbH & Co. KG  
 Rostocker Straße 30  
 34225 Baunatal, Germany  
 T: +49 (0) 56 01 97 96-0  
 www.plettenbergmotors.com / sales@plettenbergmotors.com  
 © 2025 Plettenberg Elektromotoren GmbH & Co. KG. All rights reserved.





## COMPANY OVERVIEW

Plettenberg is a leading developer and manufacturer of electric drive solutions for mission critical applications, including aerospace & defense, uncrewed systems, maritime, racing and many others. We are the global leader in ultra-rugged high-performance inrunner BLDC motors. Our portfolio also includes outrunner BLDC motors, brushed DC motors, ESCs, starter & generator systems as well as accessories. It is our mission to help our customers to be successful, by solving their most demanding challenges with our cutting-edge tailored drive solutions and by providing the best power-to-weight-to-robustness ratio on the market. We manufacture 100% of our products at our HQ in Germany and have a quality system which is EN 9100:2018 certified.



**Plettenberg Elektromotoren GmbH & Co. KG**

Rostocker Straße 30  
34225 Baunatal, Germany  
T: +49 (0) 56 01 97 96-0  
[www.plettenbergmotors.com](http://www.plettenbergmotors.com)  
[sales@plettenbergmotors.com](mailto:sales@plettenbergmotors.com)



© 2025 Plettenberg Elektromotoren GmbH & Co. KG.  
All rights reserved.

COTS Product Brochure | Version 1.4 | 02.03.2025