



Plettenberg Drive Solutions

COTS PRODUCT BROCHURE

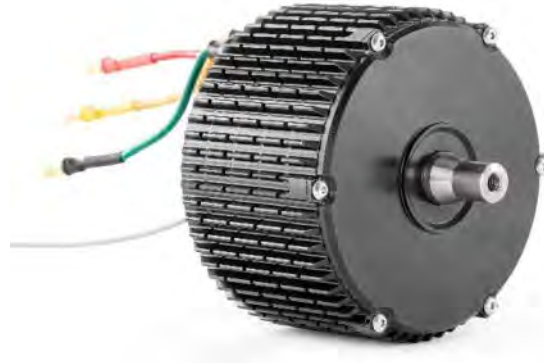


COTS SOLUTIONS

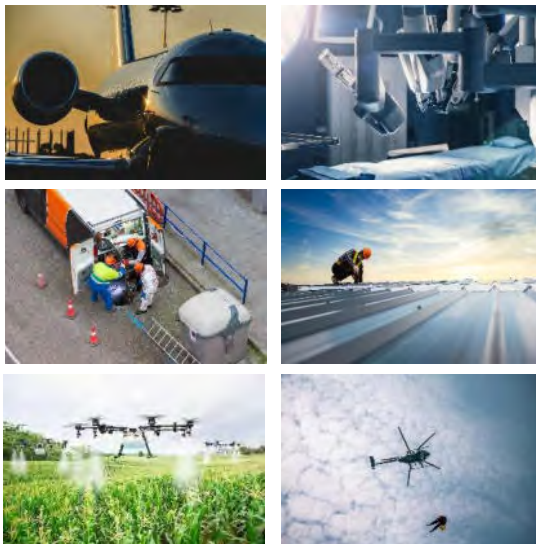
Plettenberg is a leading developer and manufacturer of rugged electric drive solutions for mission critical applications. Our portfolio of commercial-off-the-shelf ("COTS") drive solutions has been designed to cover a wide range of applications in demanding end-markets, such as aerospace, uncrewed systems,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

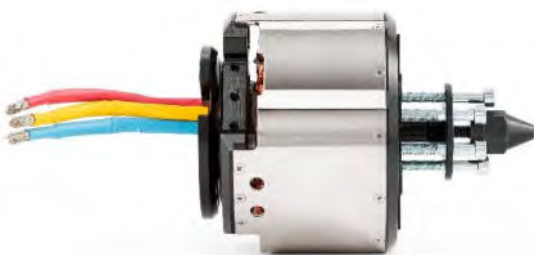
Our NOVA series of inrunners feature an extra rugged closed housing design with ingress protection class of IP54. The motors can be applied in the harshest environments, such as desert, snow and sea water operations. At the same time, the NOVA motors are designed to be extremely efficient and have market 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

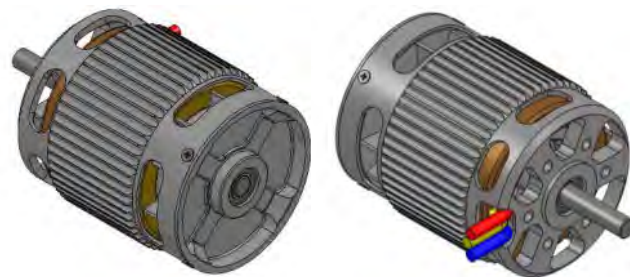
The ADVANCE 1 is from our family of weight optimized inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

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

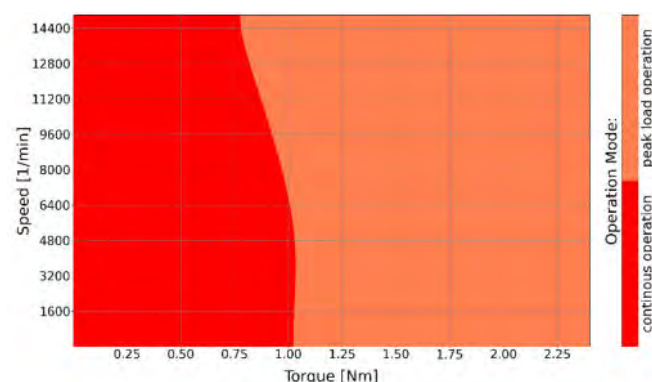
Part number	02-045.030.00-000-021
Peak output power	2 kW
Peak torque (max. 5s)	2.4 Nm
Max. speed	15,000 rpm
Voltage range	15-40 V
Speed constant (kV)	430 rpm/V
Diameter	55 mm
Length	64 mm
Weight	420 g
Phase cable length	100 mm
Recommended phase cable extension	2.5 mm ² 13 AWG
Protection class	IP20
Mounting	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

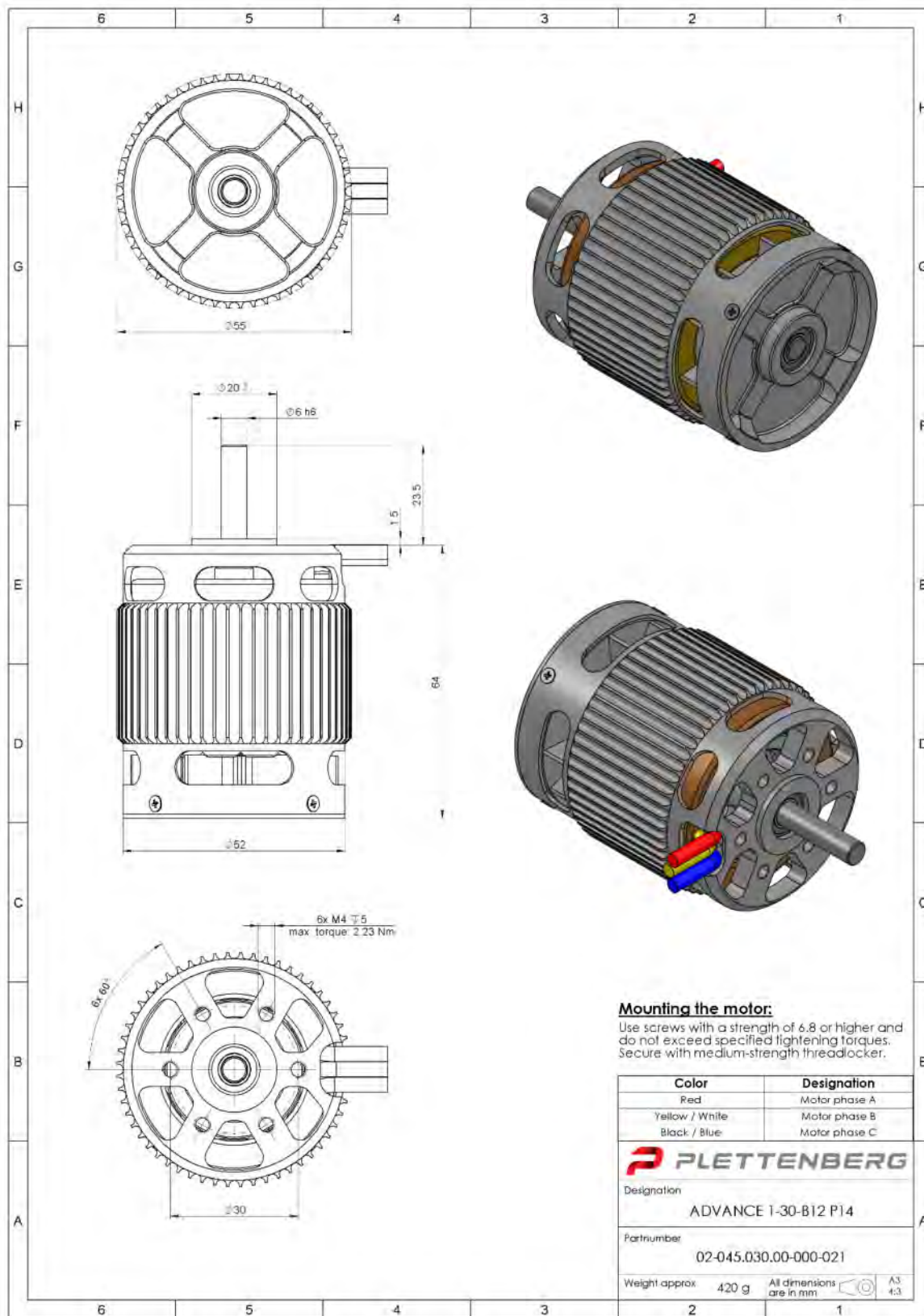


ADVANCE Series



ADVANCE 1-30-B12 P14

Inrunner BLDC motor with open housing



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ADVANCE Series

ADVANCE 1-30-B20 P14

Inrunner BLDC motor with open housing



Overview

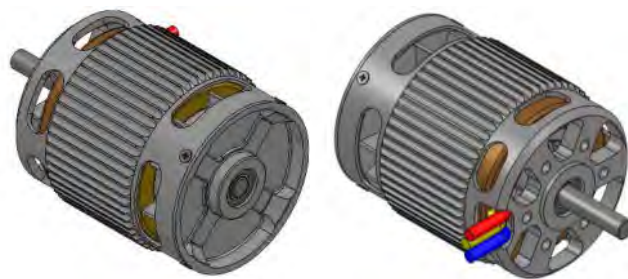
The ADVANCE 1 is from our family of weight optimized inrunner BLDC motors and has been specifically designed for mission critical applications, including uncrewed systems and aerospace.

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

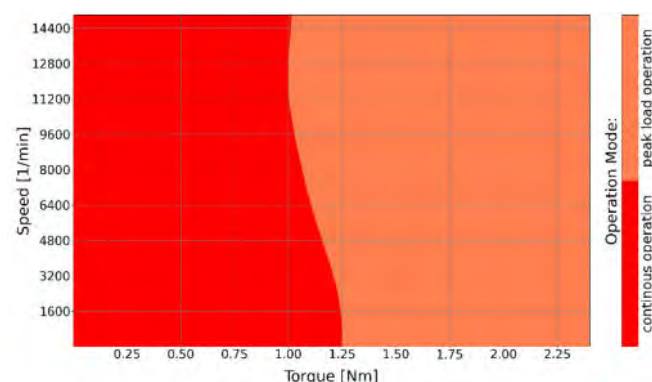
Part number	02-045.030.00-000-022
Peak output power	2 kW
Peak torque (max. 5s)	2.4 Nm
Max. speed	15,000 rpm
Voltage range	20-60 V
Speed constant (kV)	255 rpm/V
Diameter	55 mm
Length	64 mm
Weight	420 g
Phase cable length	100 mm
Recommended phase cable extension	1.5 mm ² AWG
Protection class	IP20
Mounting	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
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- Corrosion protection version
- Removal of integrated fan

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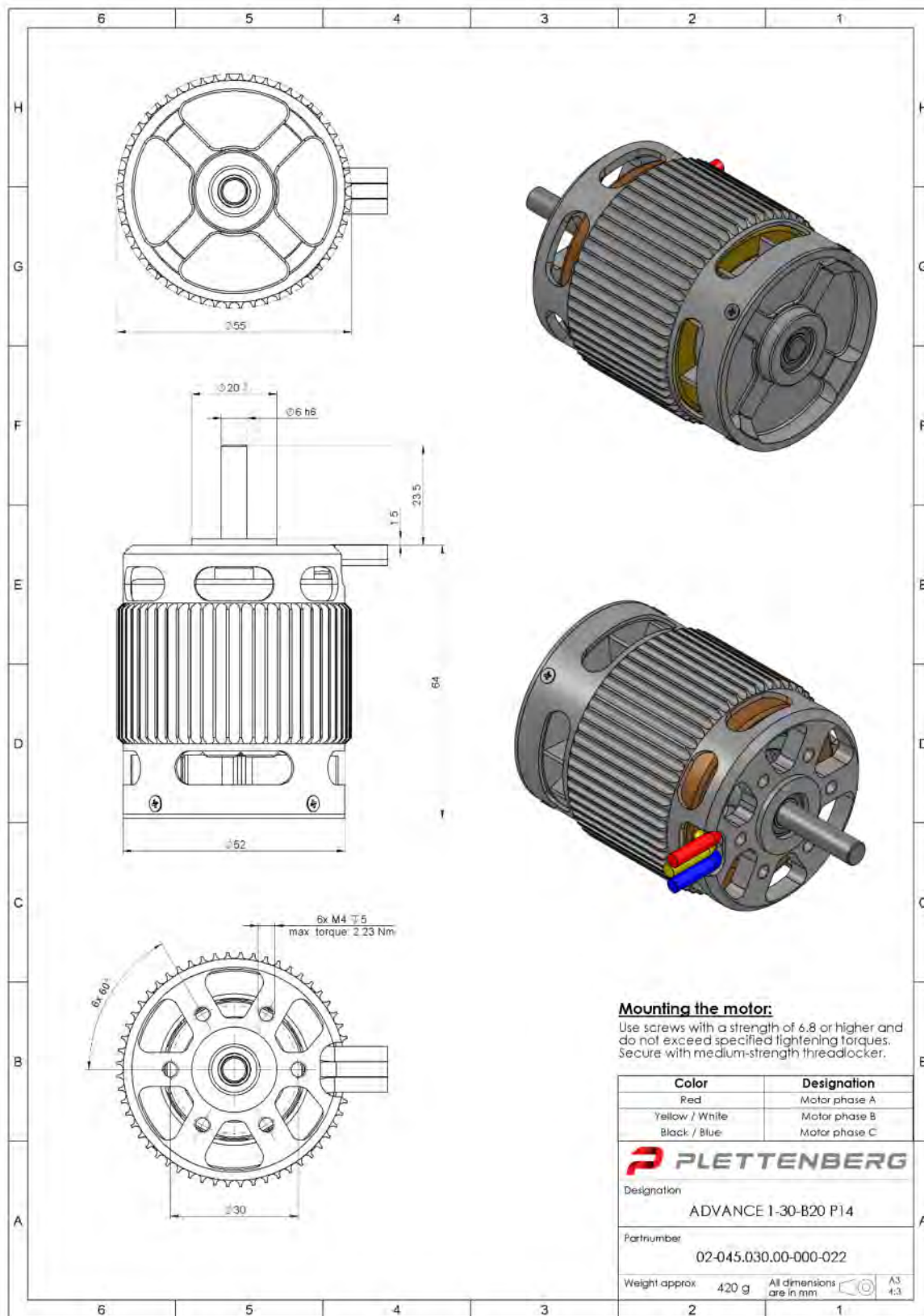


ADVANCE Series



ADVANCE 1-30-B20 P14

Inrunner BLDC motor with open 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
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C

PLETTENBERG

Designation
ADVANCE 1-30-B20 P14

Partnumber
02-045.030.00-000-022

Weight approx. 420 g All dimensions are in mm

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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

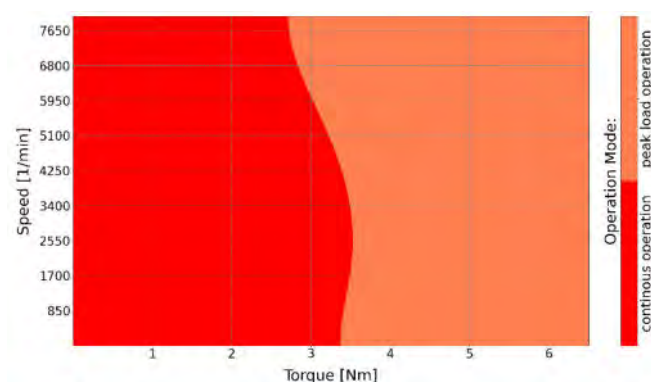
Part number	02-029.050.00-000-051
Peak output power	5 kW
Peak torque (max. 5s)	6.5 Nm
Max. speed	8,000 rpm
Voltage range	15-40 V
Speed constant (kV)	210 rpm/V
Diameter	68 mm
Length	85 mm
Weight	820 g
Phase cable length	100 mm
Recommended phase cable extension	6 mm ² AWG
Protection class	IP20
Mounting	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

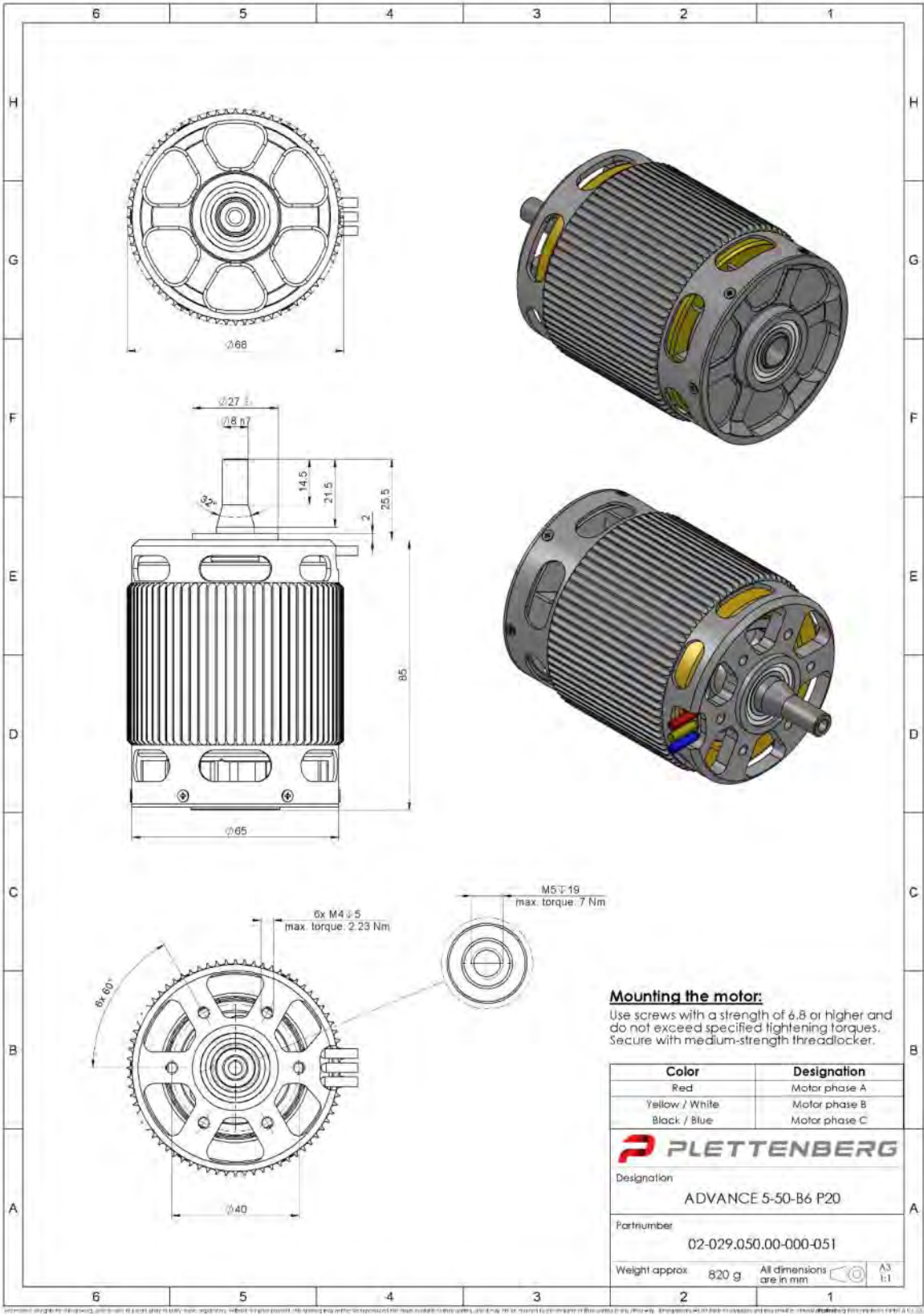


ADVANCE Series



ADVANCE 5-50-B6 P20

Inrunner BLDC motor with open housing



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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

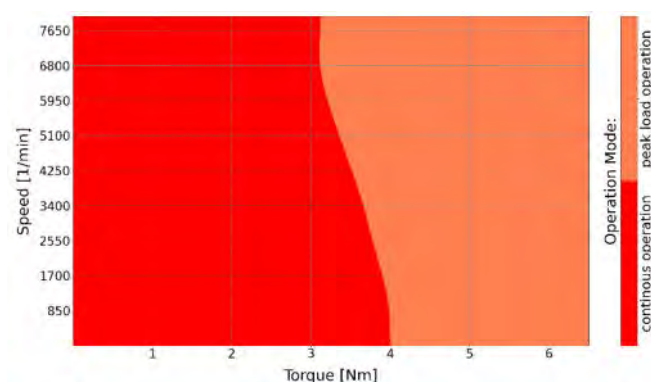
Part number	02-029.050.00-000-052
Peak output power	5 kW
Peak torque (max. 5s)	6.5 Nm
Max. speed	8,000 rpm
Voltage range	15-60 V
Speed constant (kV)	132 rpm/V
Diameter	68 mm
Length	85 mm
Weight	820 g
Phase cable length	100 mm
Recommended phase cable extension	4 mm ² AWG
Protection class	IP20
Mounting	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



Note: Assuming 25°C ambient temperature.

Options & Customization

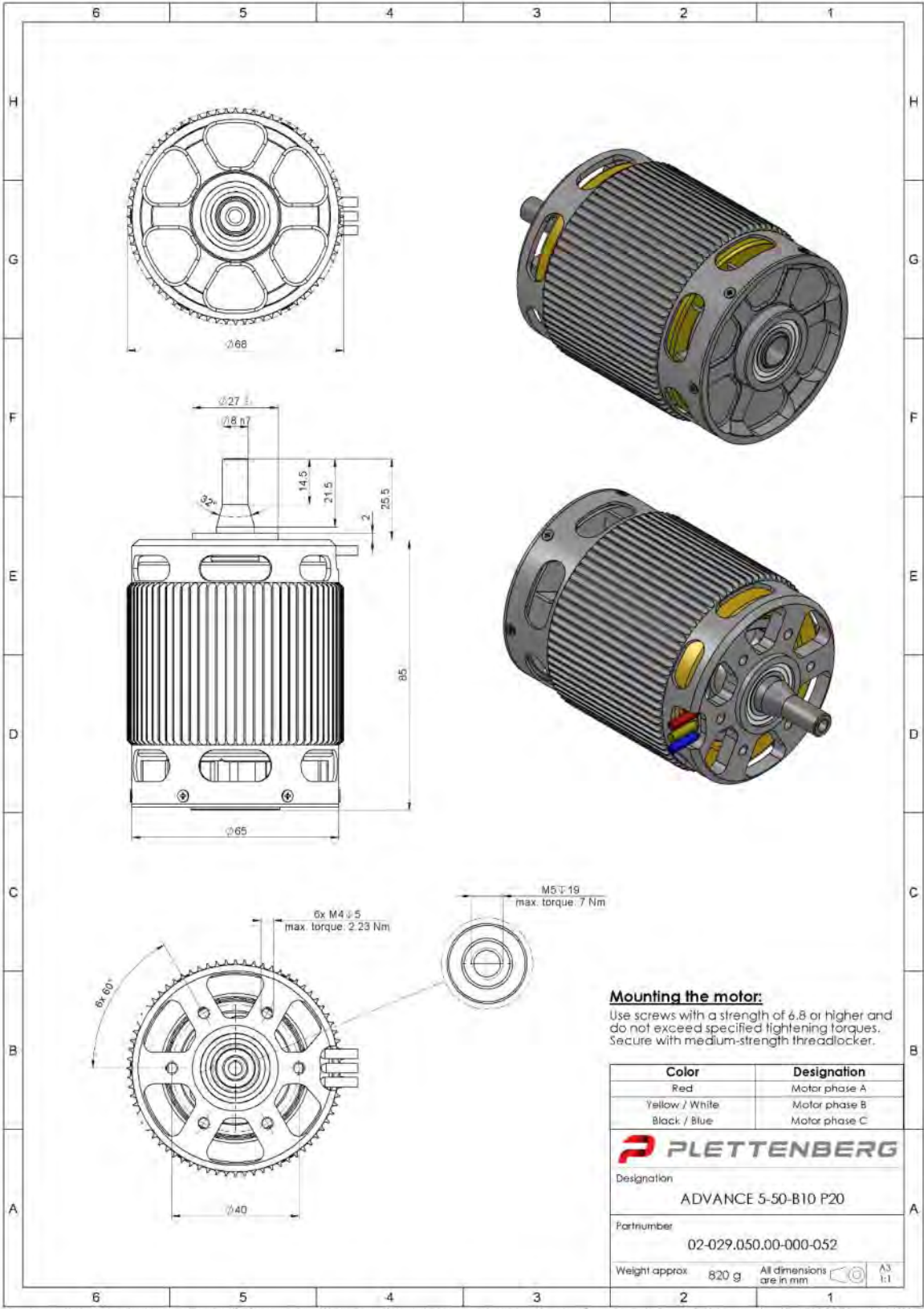
- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Removal of integrated fan



ADVANCE Series

ADVANCE 5-50-B10 P20

Inrunner BLDC motor with open housing



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NOVA SERIES

Inrunner BLDC motors with closed housing design

NOVA Series



NOVA 4-30-B8 P20 LW

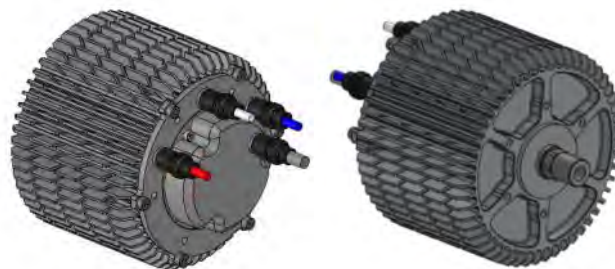
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ²
	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	

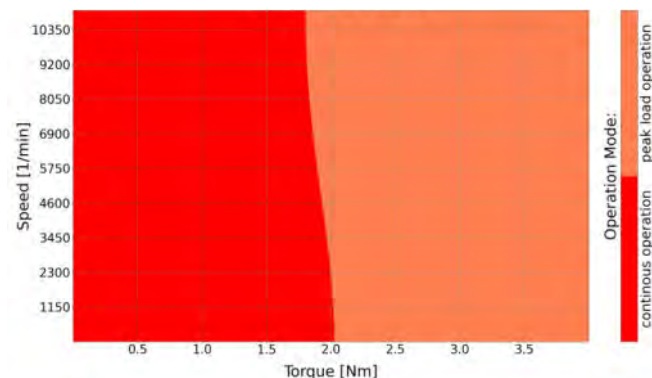
Notes:

⁽¹⁾ 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

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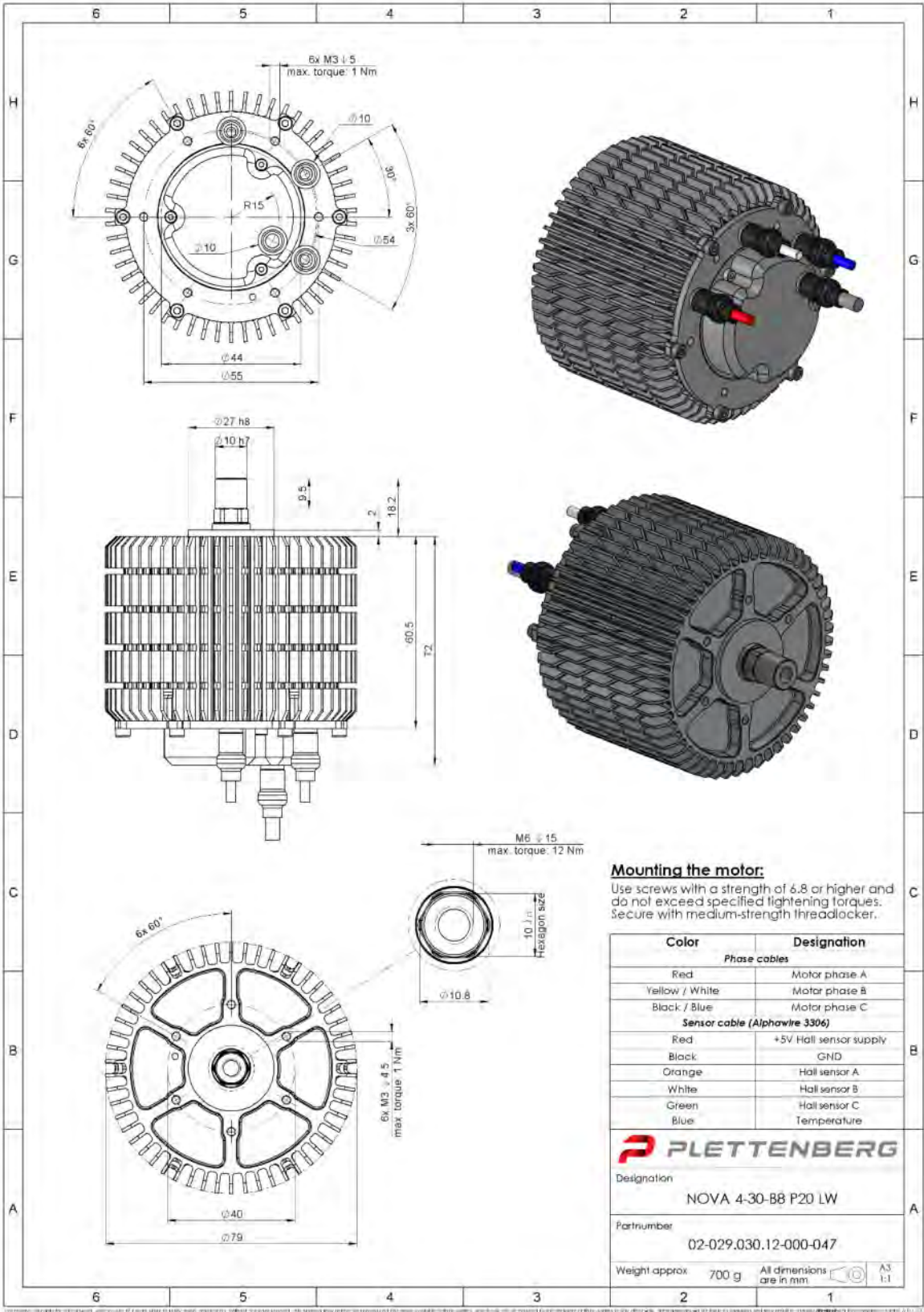
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NOVA 4-30-B8 P20 LW

Inrunner BLDC motor with closed housing



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NOVA Series



NOVA 4-30-B12 P20 LW

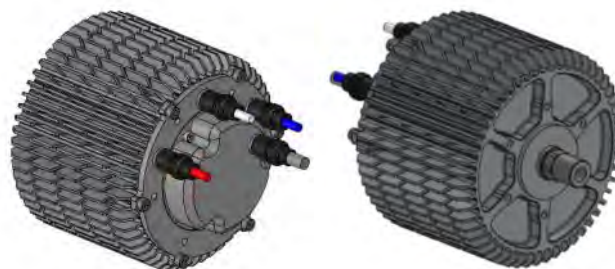
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ²
	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	

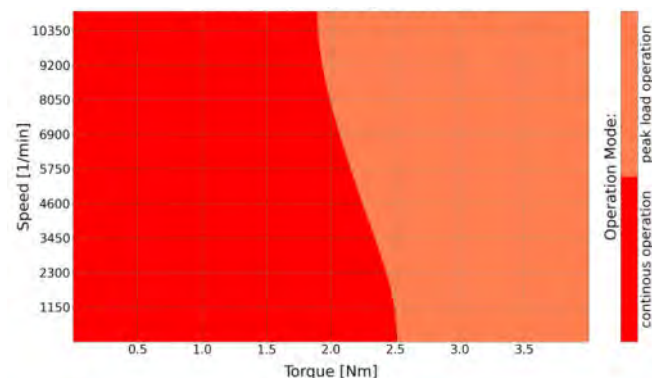
Notes:

⁽¹⁾ 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.

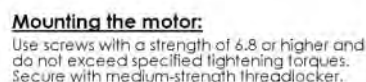
Options & Customization

- 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



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Inrunner BLDC motor with closed housing



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

 PLETTENBERG	
Designation	NOVA 4-30-B12 P20 LW
Partnumber	02-029.030.12-000-048
Weight approx.	700 g
All dimensions	



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

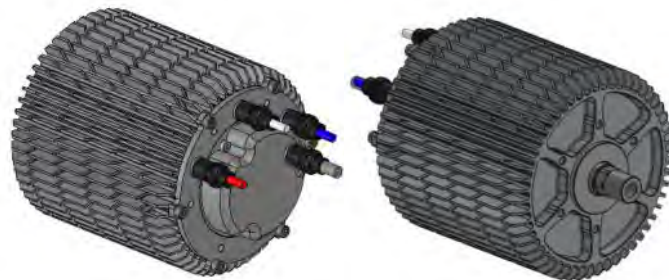
- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller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

Specifications

Part number	02-029.050.12-000-049	
Peak output power	4	kW
Peak torque (max. 5s) ⁽¹⁾	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 ²
	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:

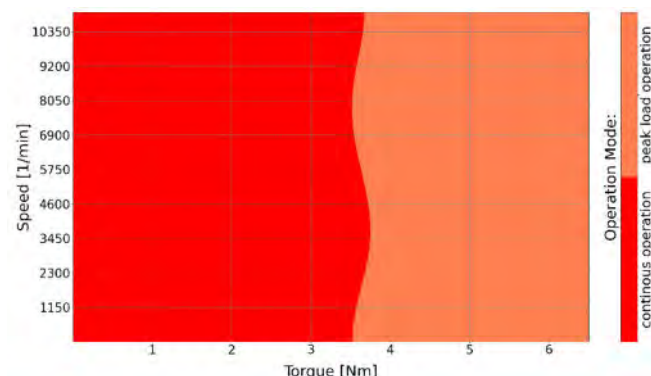
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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

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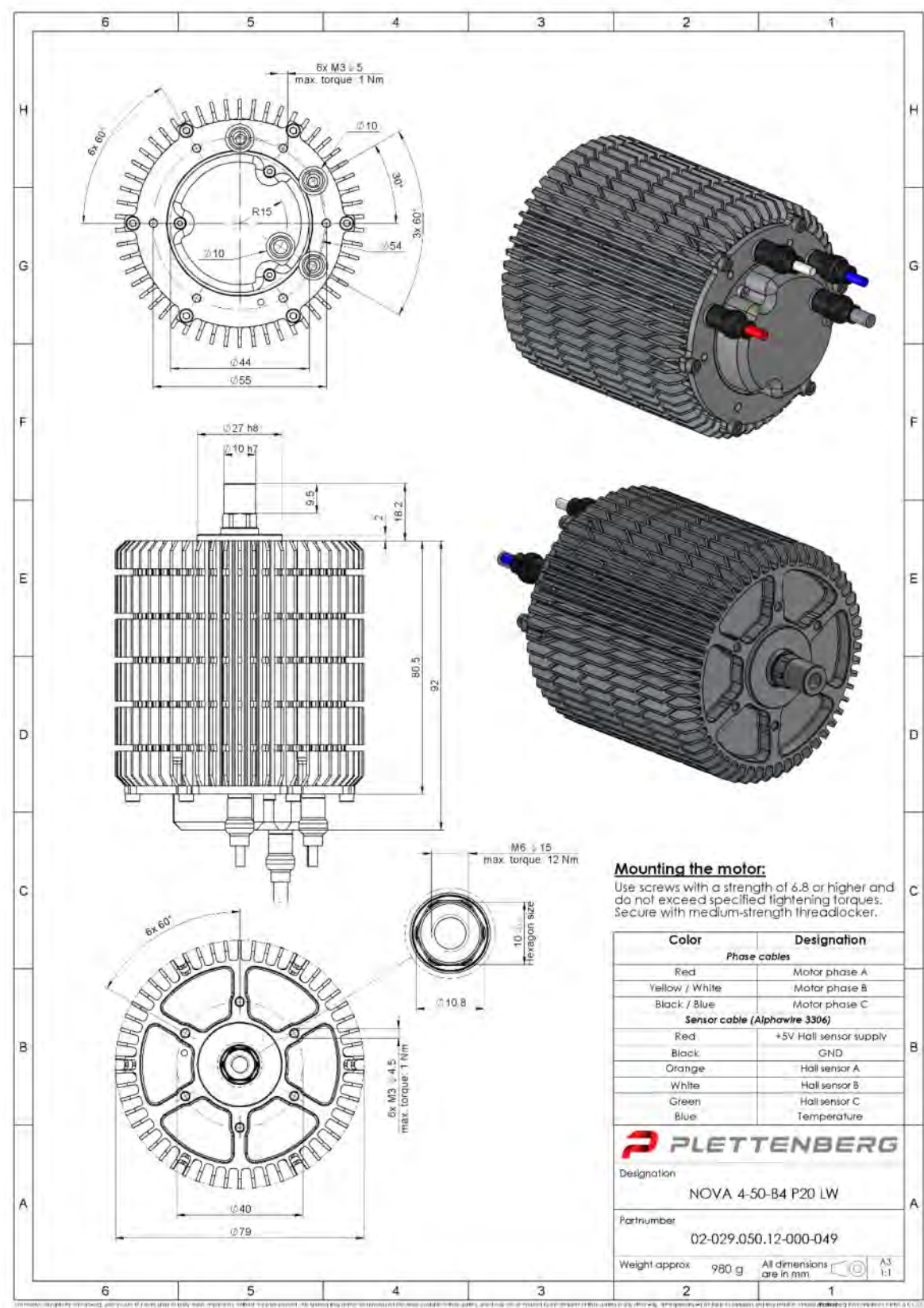
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NOVA Series

NOVA 4-50-B4 P20 LW

Inrunner BLDC motor with closed housing



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NOVA 4-50-B8 P20 LW

Inrunner BLDC motor with closed housing

Overview

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Features

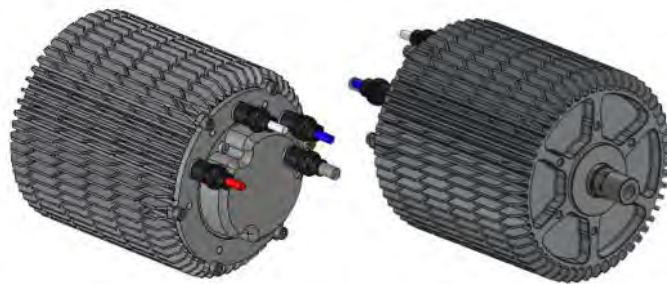
- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller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

Specifications

Part number	02-029.050.12-000-050
Peak output power	4 kW
Peak torque (max. 5s) ⁽¹⁾	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 ² 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:

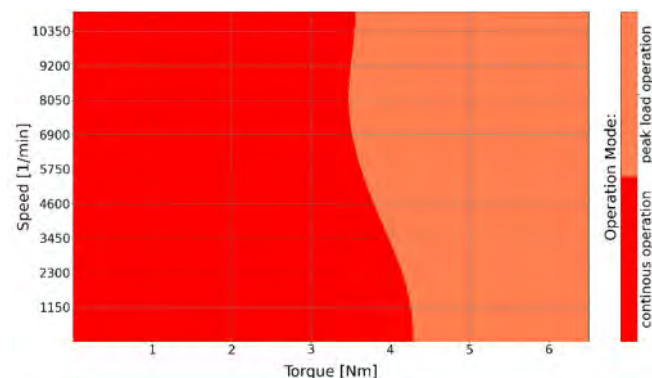
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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

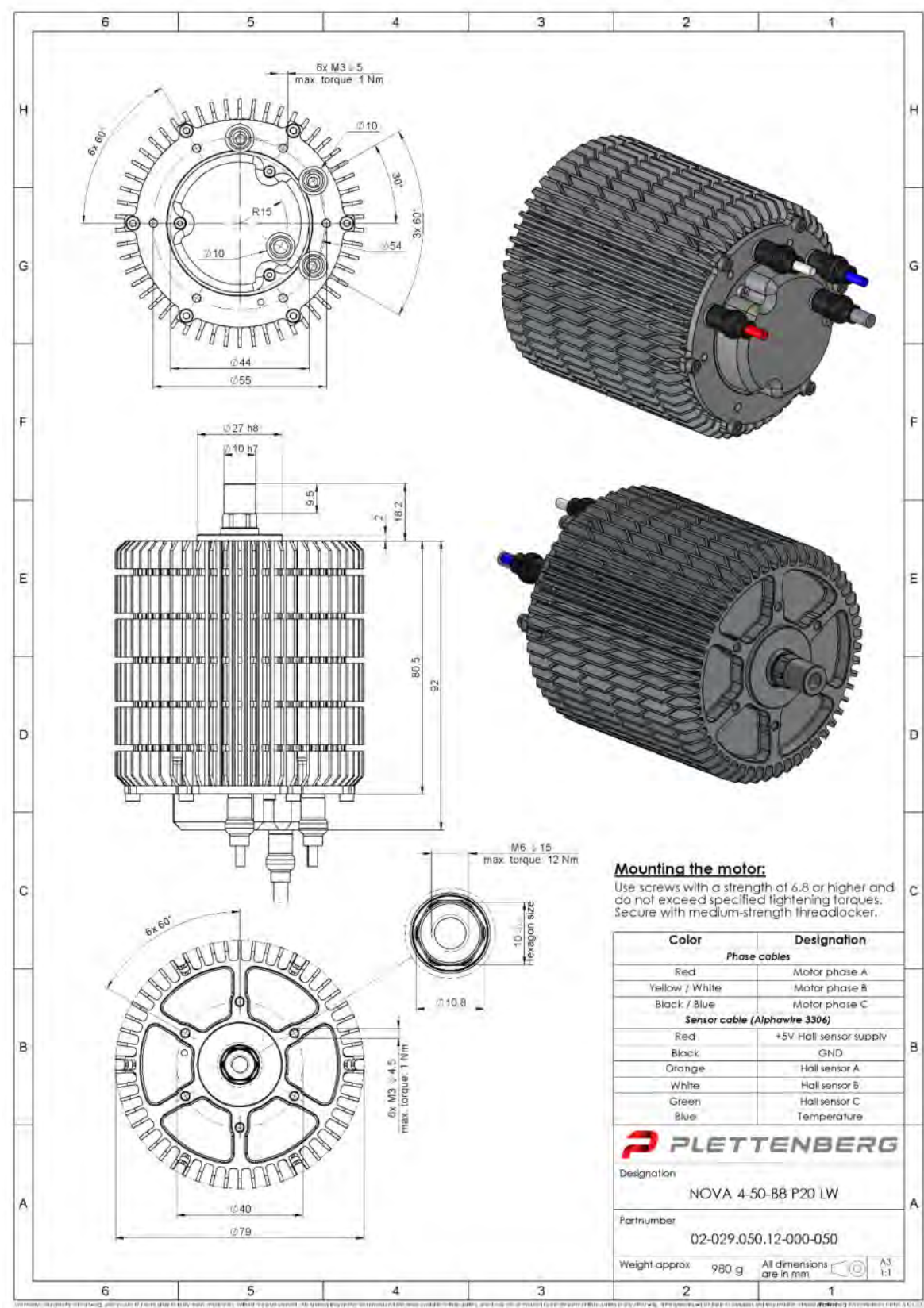


NOVA Series



NOVA 4-50-B8 P20 LW

Inrunner BLDC motor with closed housing



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NOVA 15-20-B4 P30 LW

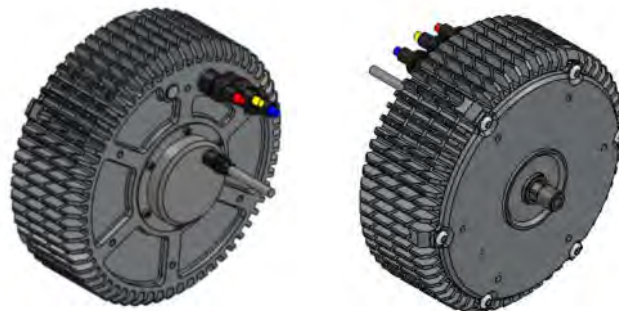
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ² 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

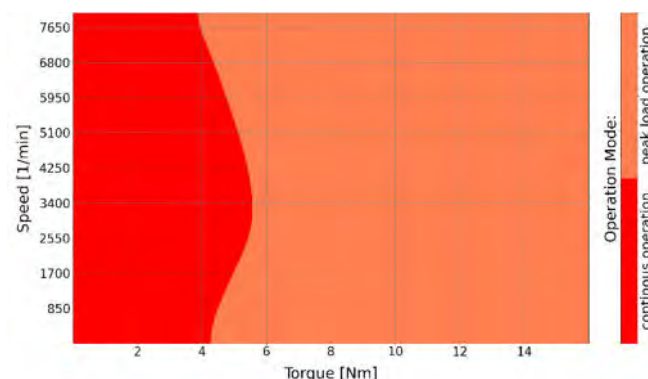
Notes:

⁽¹⁾ 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.

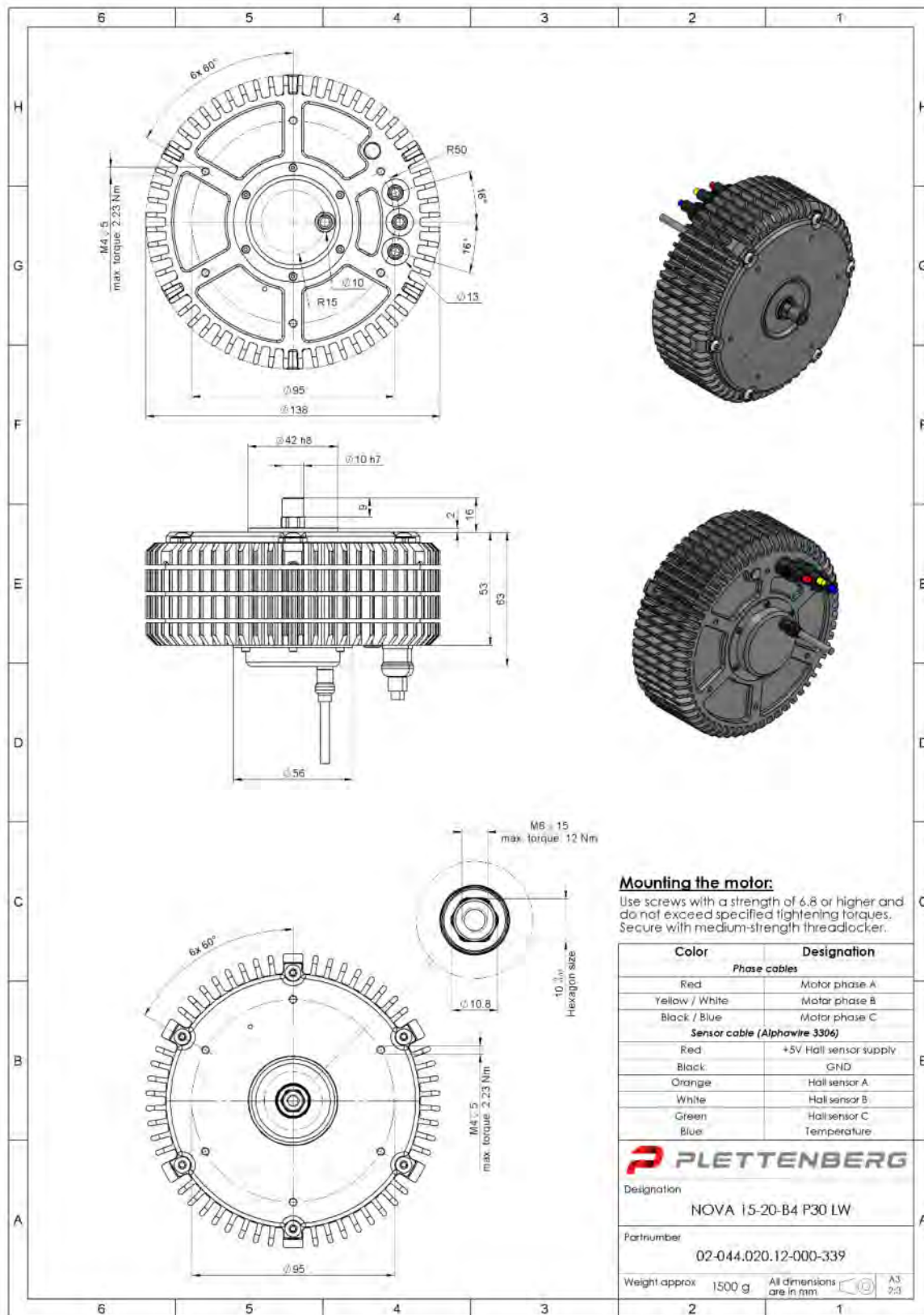
Options & Customization

- 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



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NOVA 15-20-B6 P30 LW

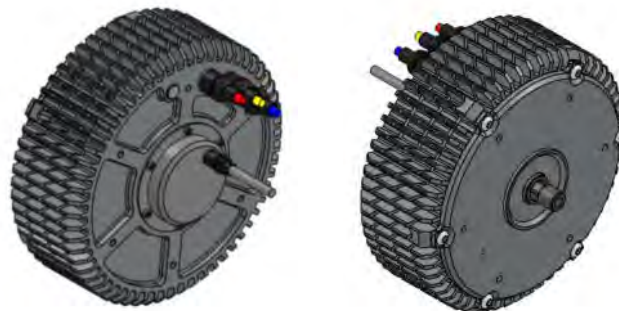
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ² 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

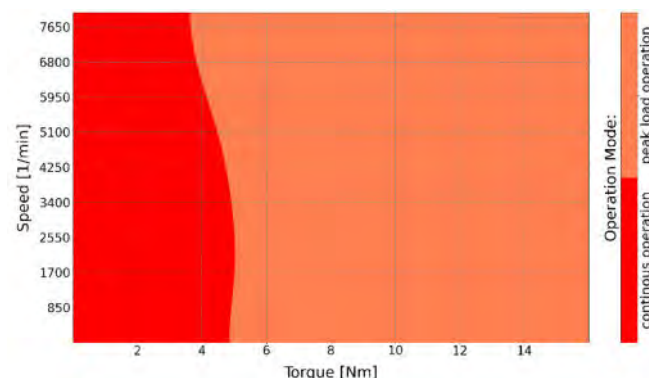
Notes:

⁽¹⁾ 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



Inrunner BLDC motor with closed housing



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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) ⁽¹⁾	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 ² 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:

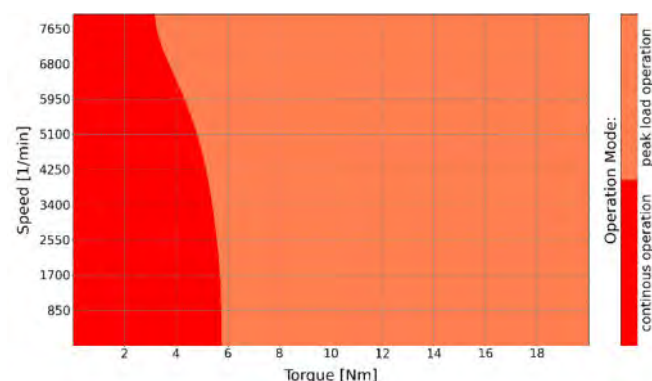
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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



Inrunner BLDC motor with closed housing



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

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Designation
NOVA 15-25-B6 P30 LW

Partnumber	02-044.025.12-000-341
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Weight approx	1860 g	All dimensions are in mm		A3 2-3
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NOVA 15-25-B12 P30 LW

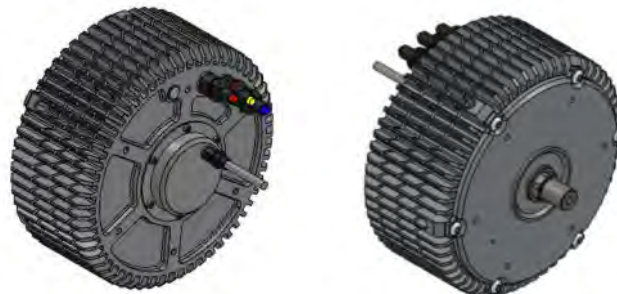
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ²
	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	

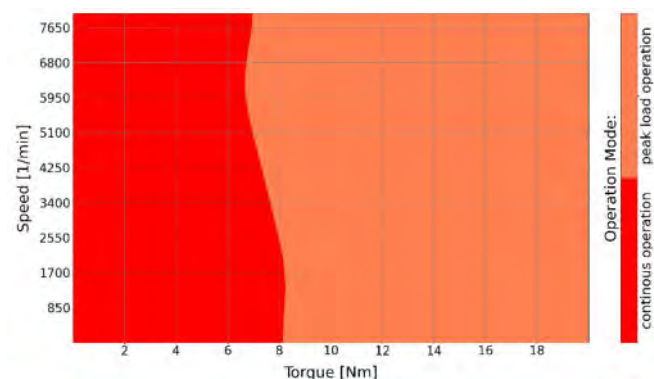
Notes:

⁽¹⁾ 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



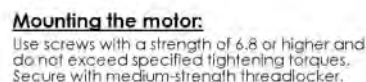
Note: Assuming 25°C ambient temperature and 10 m/s airflow.

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



Inrunner BLDC motor with closed housing



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

Designation	
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NOVA 15-25-B12 P30 LW

Partnumber

02-044.025.12-000-342

Weight approx	1860 g	All dimensions		A3 20
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2	1
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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

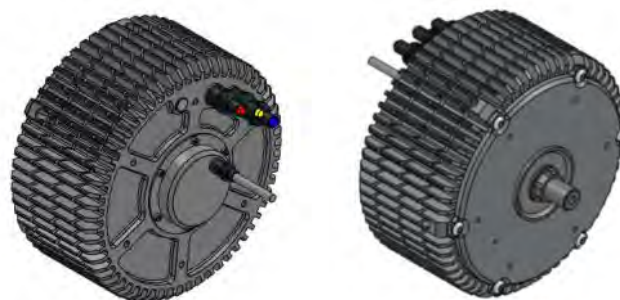
- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller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

Specifications

Part number	02-044.030.12-000-343
Peak output power	9 kW
Peak torque (max. 5s) ⁽¹⁾	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 ² 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:

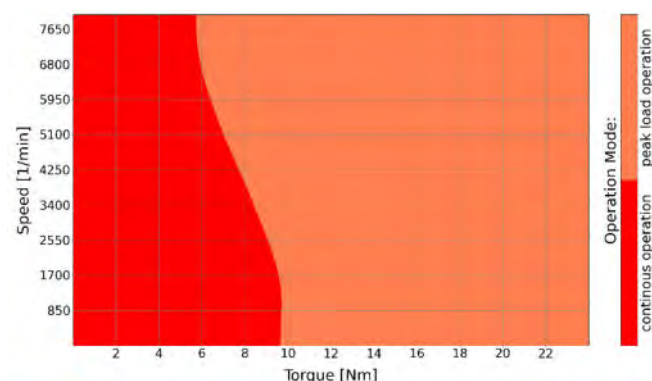
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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



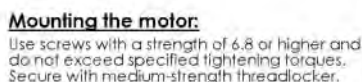
Note: Assuming 25°C ambient temperature and 10 m/s airflow.

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



Inrunner BLDC motor with closed housing



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

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Designation
NOVA 15-30-B6 P30 LW

Partnumber	02-044.030.12-000-343
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Weight approx	2040 g	All dimensions are in mm		A3 2:3
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NOVA 15-30-B10 P30 LW

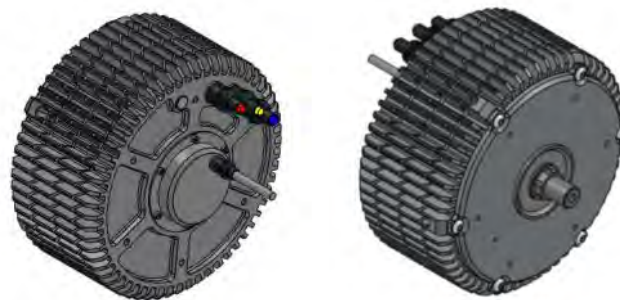
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ²
	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	

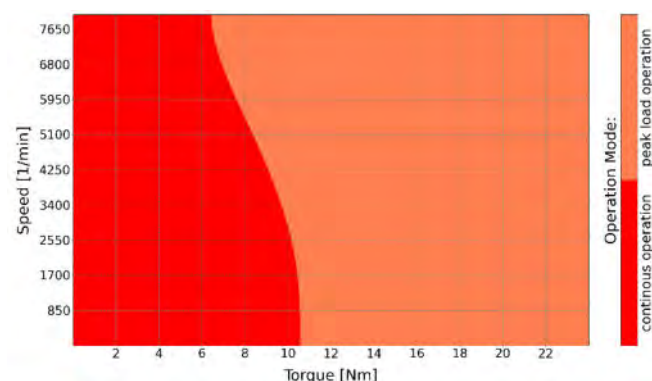
Notes:

⁽¹⁾ 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

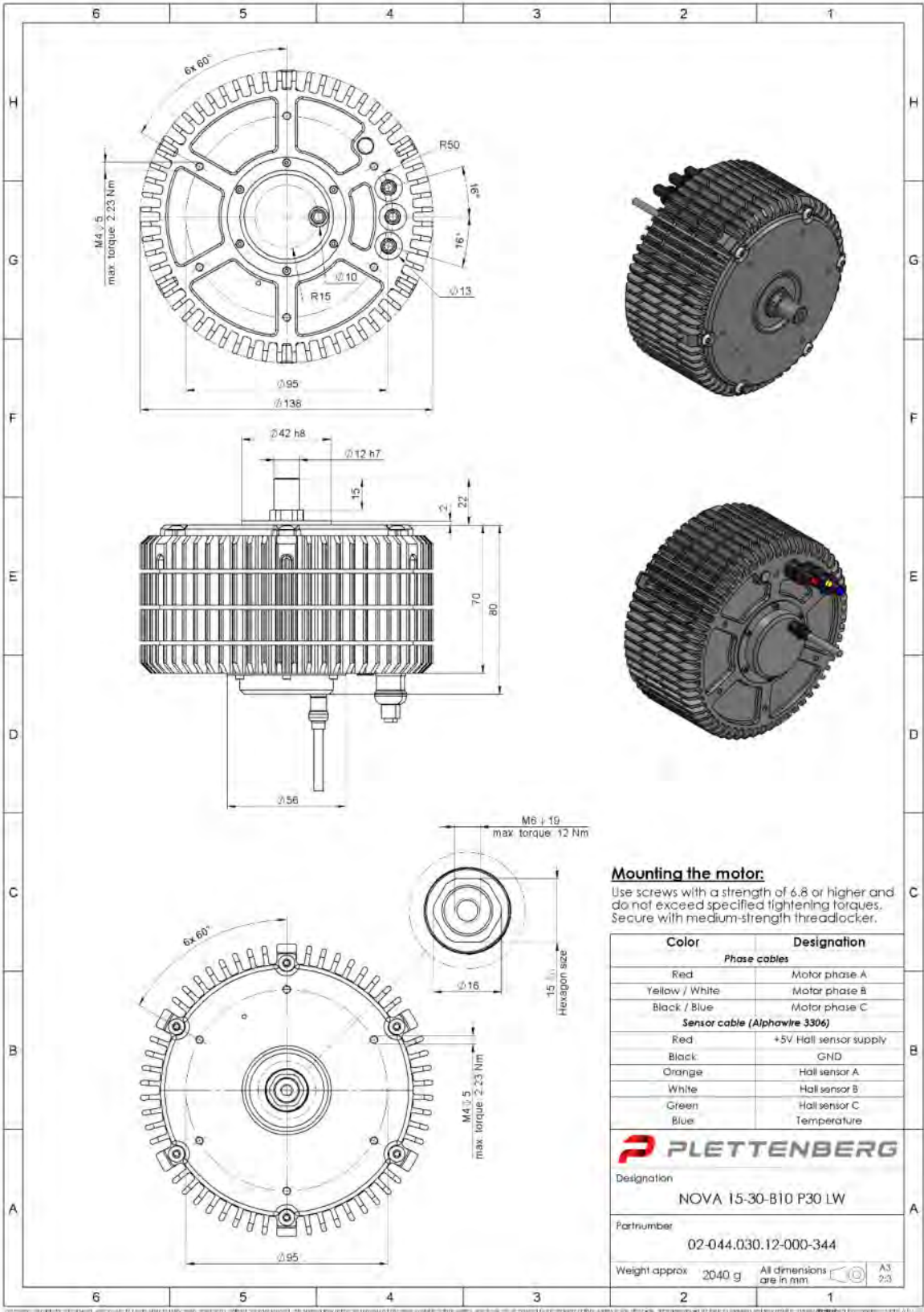


NOVA Series



NOVA 15-30-B10 P30 LW

Inrunner BLDC motor with closed housing



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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 Plettenberg propeller coupling



Specifications

Part number	02-044.040.12-000-345	
Peak output power	12	kW
Peak torque (max. 5s) ⁽¹⁾	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 ²
	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	

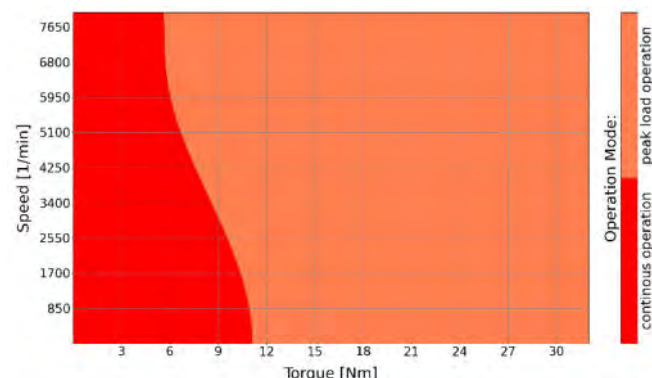
Notes:

⁽¹⁾ 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
- Third party ESC from Allocortech
- Plettenberg gold connectors: GC6-00 / GC6-90

Heatmap



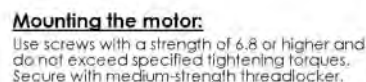
Note: Assuming 25°C ambient temperature and 10 m/s airflow.

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



Inrunner BLDC motor with closed housing



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


Designation	
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NOVA 15-40-B4 P30 LW

Portnummer:

02-044.040.12-000-345

Weight approx	0.110	All dimensions		A3
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Weight applied	2460 g	All dimensions are in mm		2.3
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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) ⁽¹⁾	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 ²
	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:

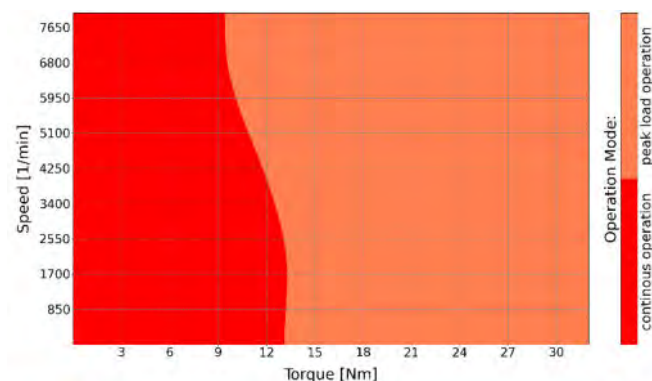
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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

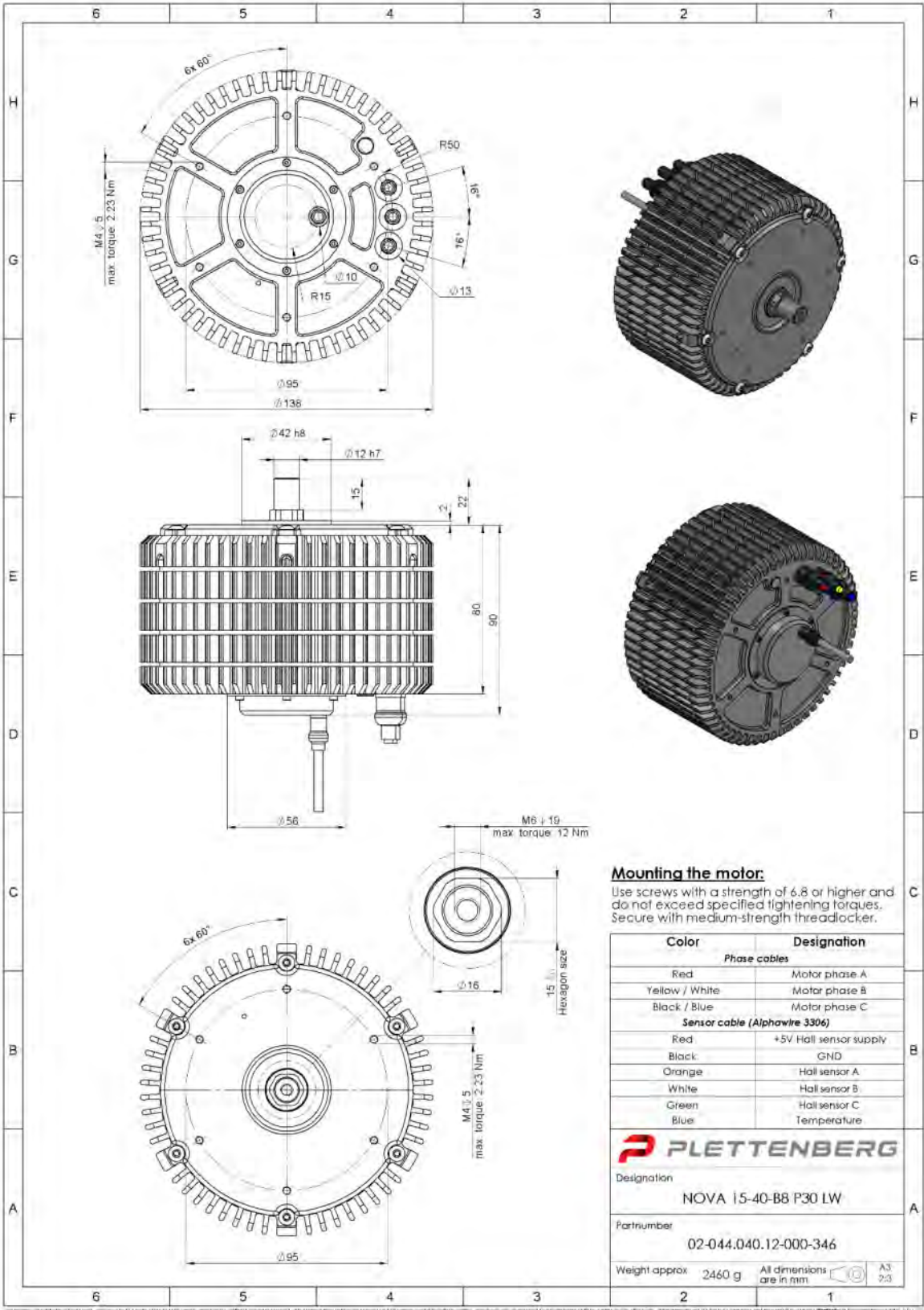
- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization or frameless kits
- High/low temperature versions
- High RPM versions
- Propeller study
- RTCA DO160 qualification



NOVA Series

NOVA 15-40-B8 P30 LW

Inrunner BLDC motor with closed housing



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NOVA 15-50-B4 P30 LW

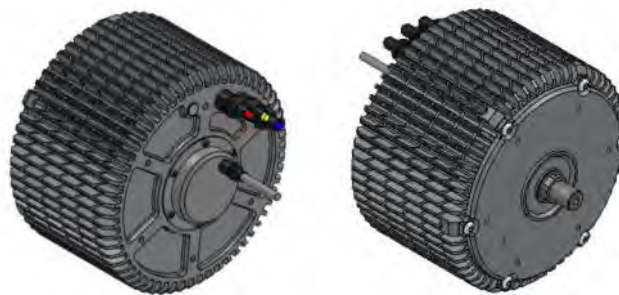
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ²
	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	

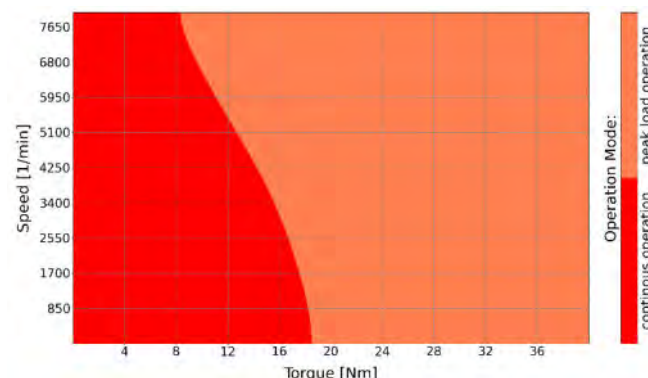
Notes:

⁽¹⁾ 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



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

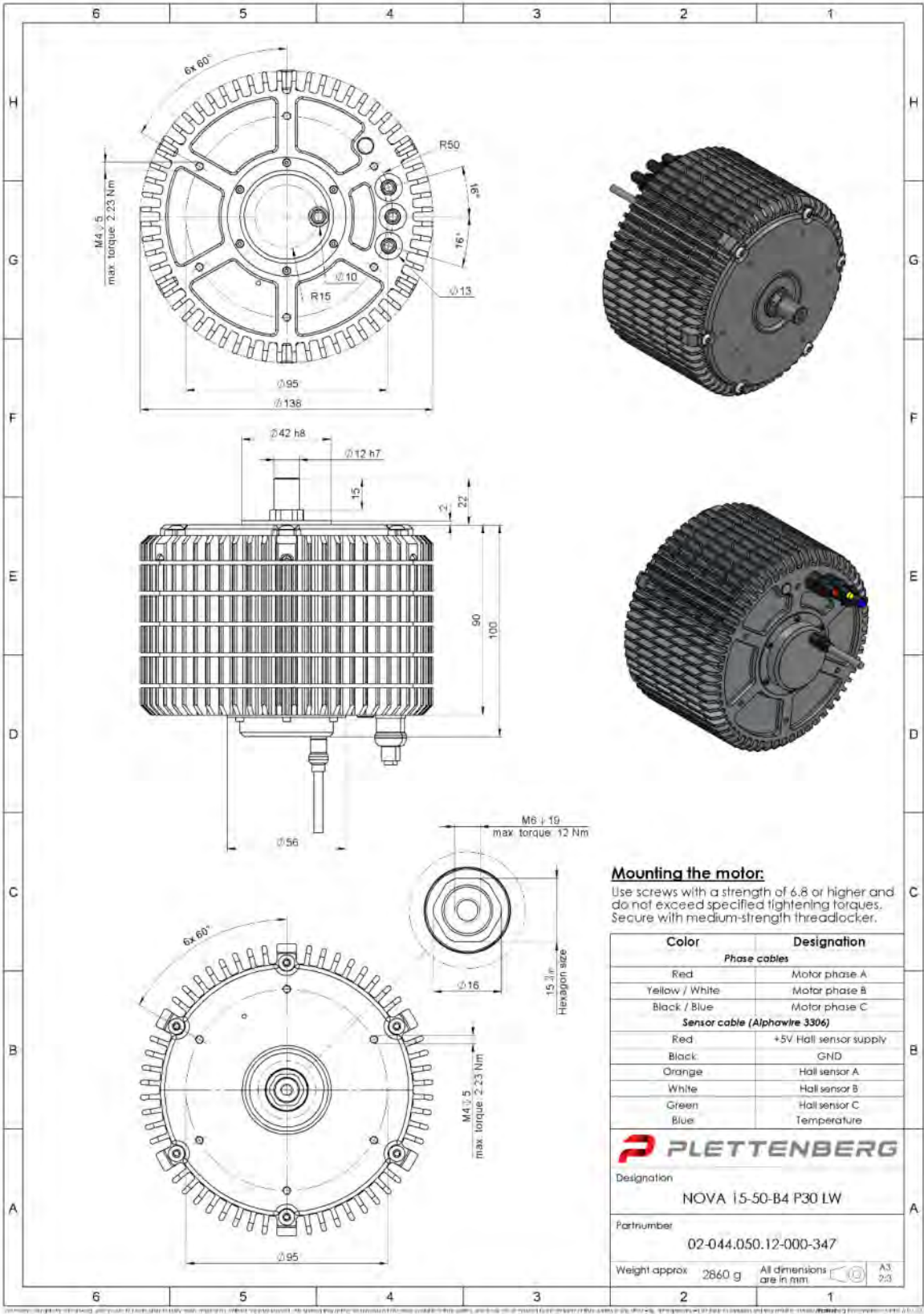


NOVA Series



NOVA 15-50-B4 P30 LW

Inrunner BLDC motor with closed housing



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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

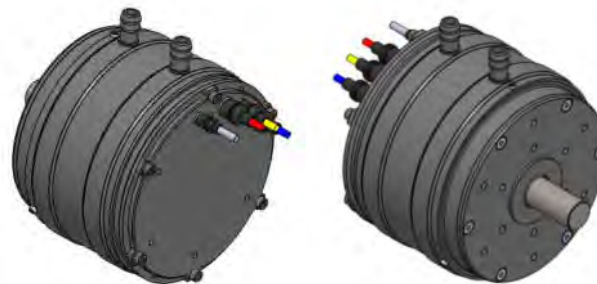
- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Wear-free position and temperature sensors included in standard

Specifications

Part number	02-044.050.01-000-350
Peak output power	15 kW
Peak torque (max. 5s) ⁽¹⁾	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 ²
	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.

Notes:

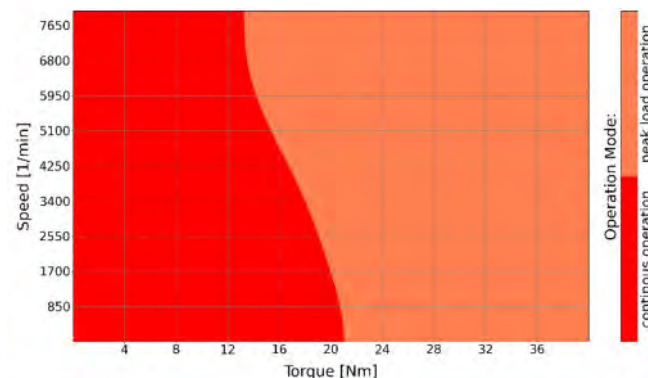
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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

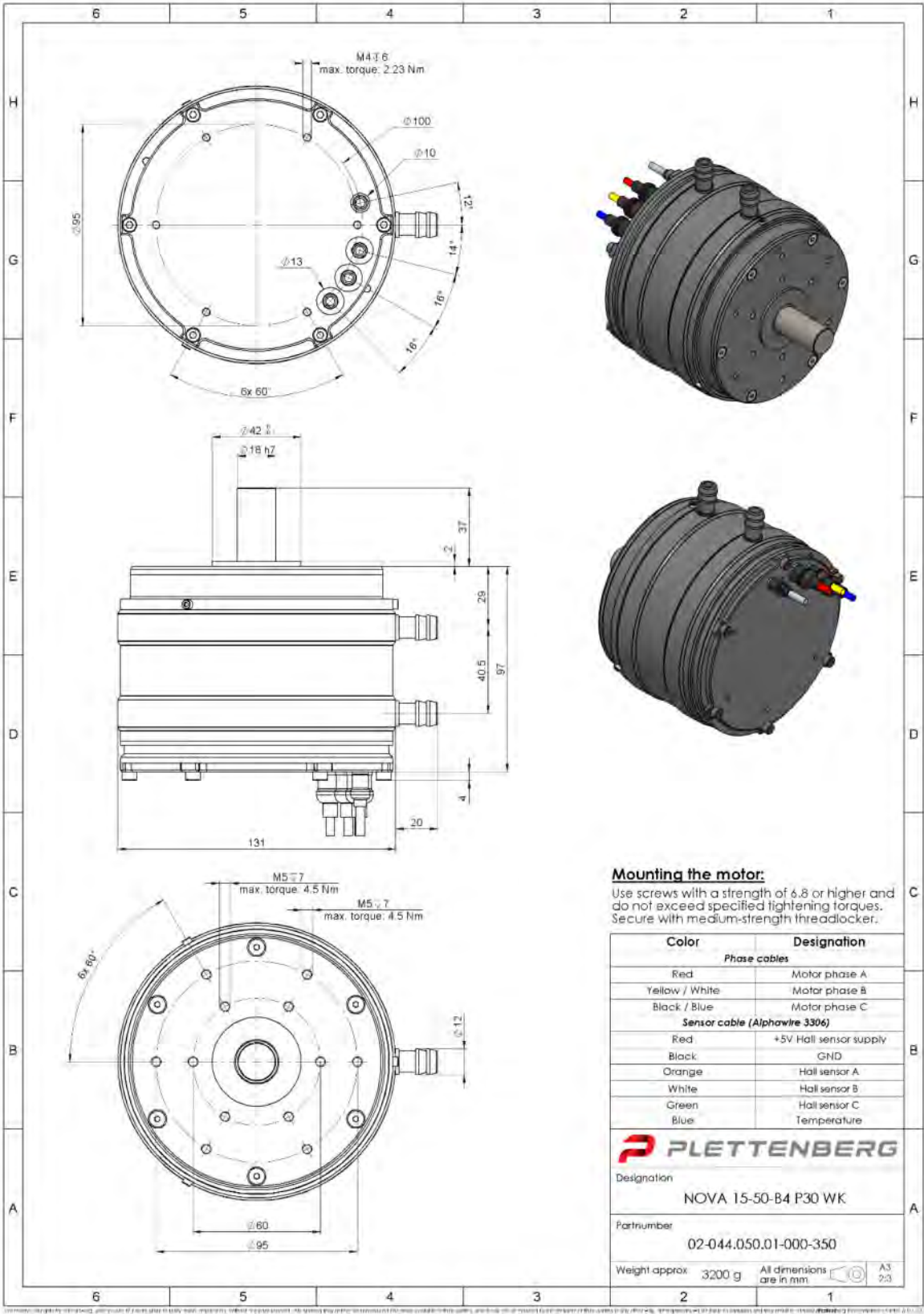
- Custom winding/kV versions
- MIL-STD 810H test reports
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization
- High RPM versions
- RTCA DO160 qualification



NOVA Series

NOVA 15-50-B4 P30 WK

Inrunner BLDC motor with closed housing



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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 Plettenberg 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⁽¹⁾

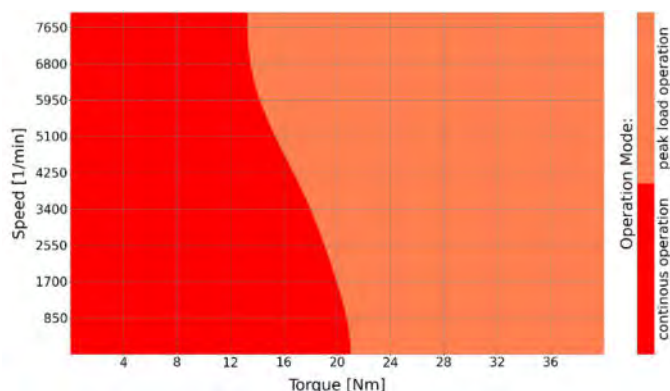
Continuous power	17.6	kW
Electric RPM limit	240,000	1/min
Voltage range	15-80	V
Continuous current	220 A (at 25°C ambient temperature) 175 A (at 50°C ambient temperature) 125 A (at 75°C ambient temperature)	
Maximum current	400 A (max. 2 seconds)	
Interfaces	RS232 plus either CAN bus 2.0A or PWM or analog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

Notes:

⁽¹⁾ Please refer to MST operating manual for more details.

⁽²⁾ 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

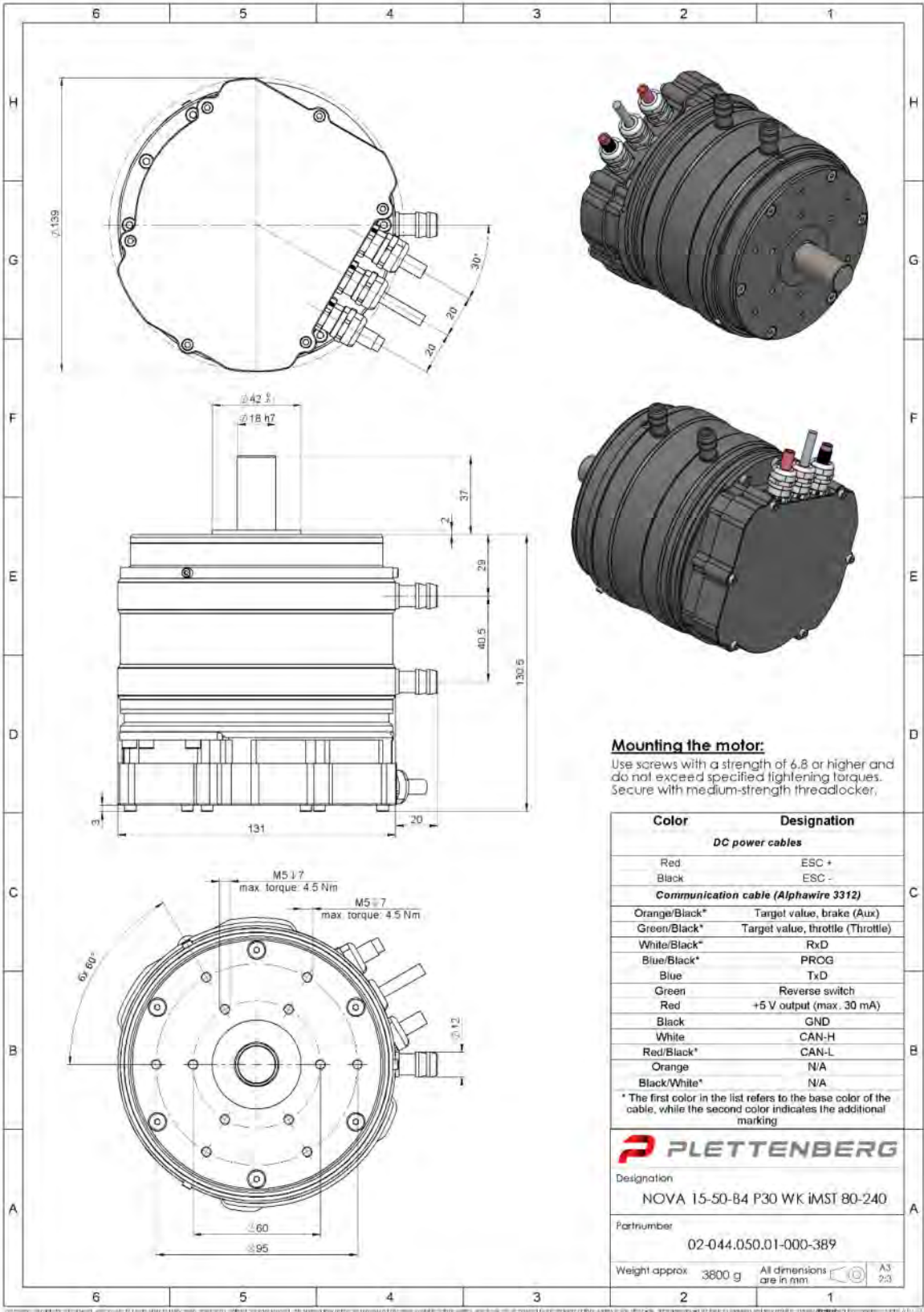


NOVA Series



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

Inrunner BLDC motor with closed housing



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NOVA 15-50-B6 P30 LW

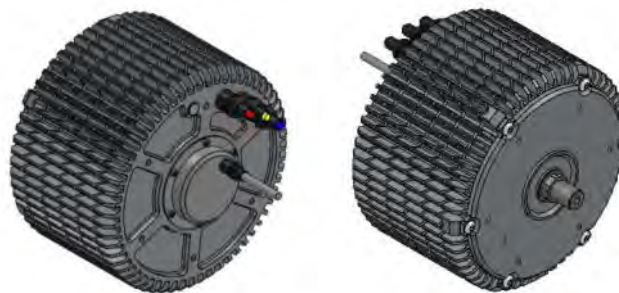
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ²
	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	67 kg with 42x15.2" prop	

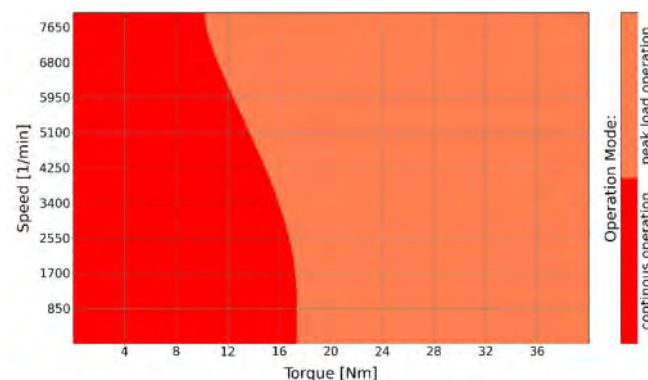
Notes:

⁽¹⁾ 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



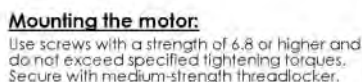
Note: Assuming 25°C ambient temperature and 10 m/s airflow.

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



Inrunner BLDC motor with closed housing



Color	Designation
Phase cables	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C
Sensor cable (Alphawire 3306)	
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 LW

Partnumber

02-044.050.12-000-348

Weight approx	2860 g	All dimensions		A3 20
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2	1
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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) ⁽¹⁾	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 ²
	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.

Notes:

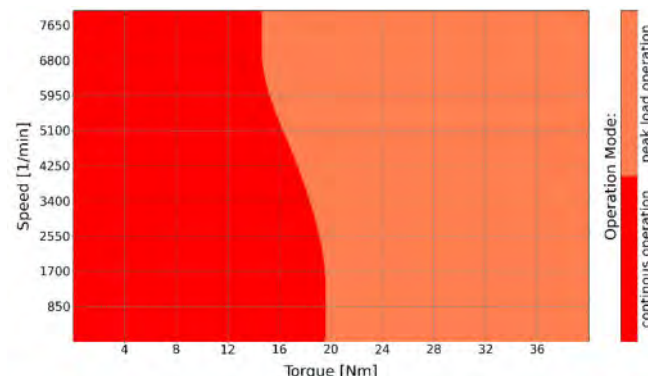
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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



NOVA 15-50-B8 P30 LW

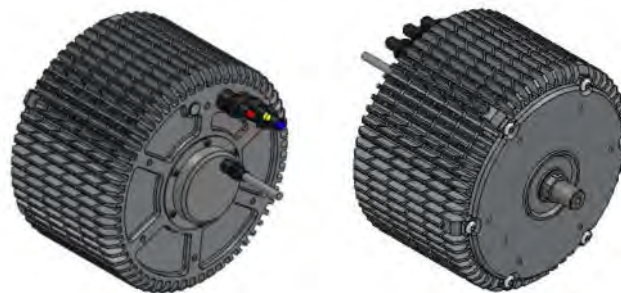
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ² 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

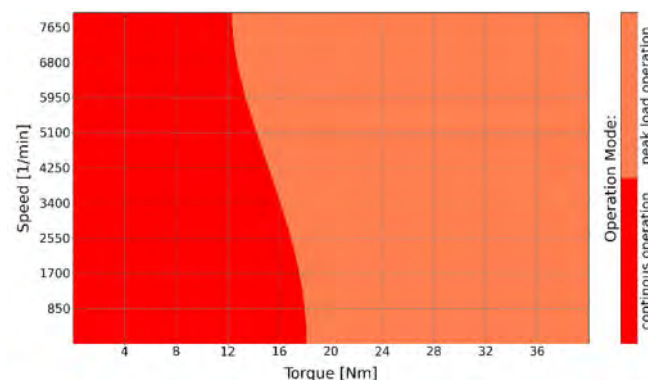
Notes:

⁽¹⁾ 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

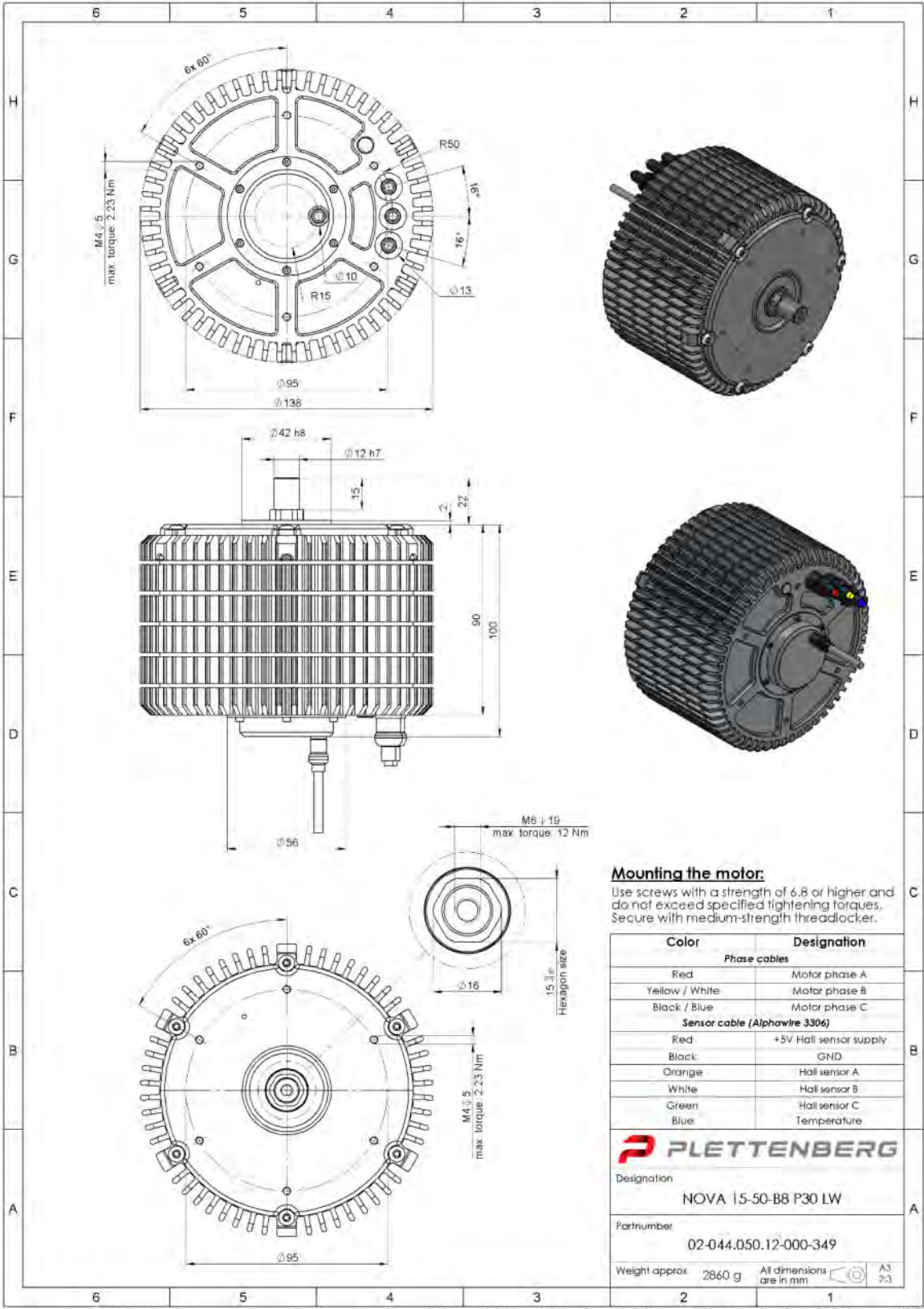


NOVA Series



NOVA 15-50-B8 P30 LW

Inrunner BLDC motor with closed housing



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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) ⁽¹⁾	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 ²
	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.	

Notes:

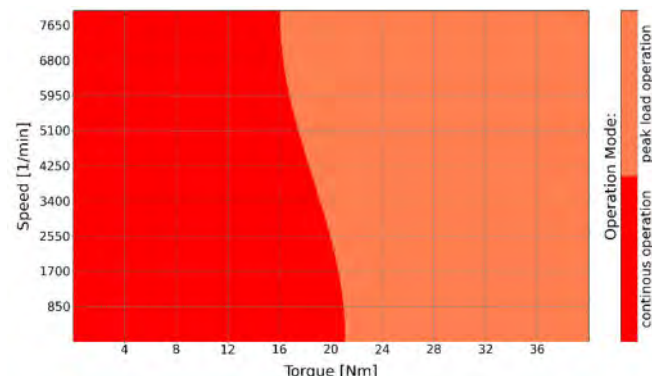
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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

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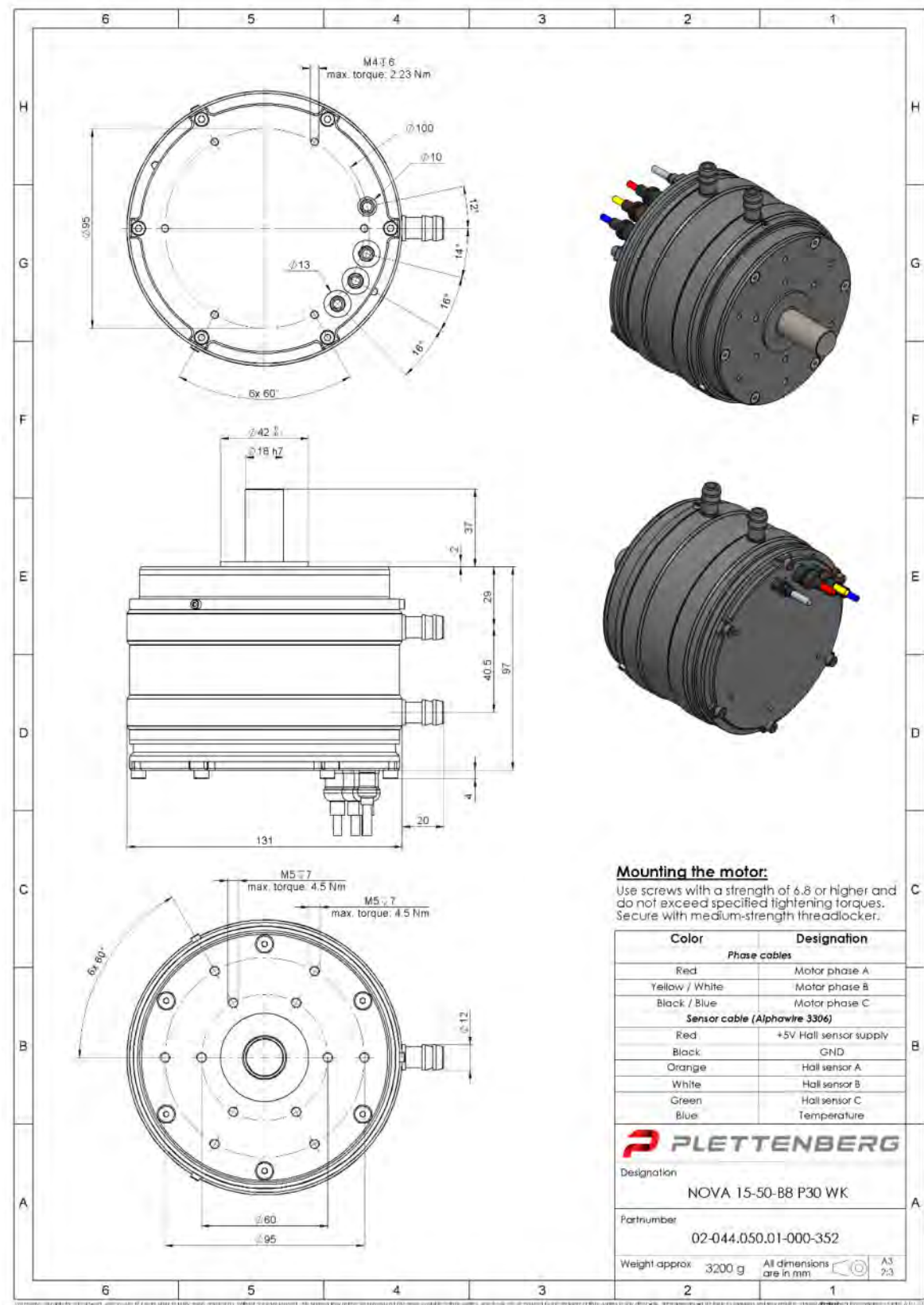
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NOVA Series

NOVA 15-50-B8 P30 WK

Inrunner BLDC motor with closed housing



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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

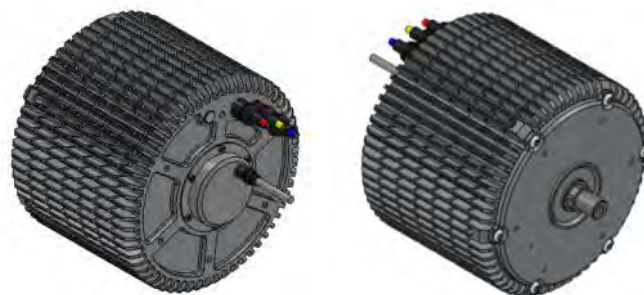
- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller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

Specifications

Part Number	02-044.070.12-000-354	
Peak output power	20	kW
Peak torque (max. 5s) ⁽¹⁾	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 ²
	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:

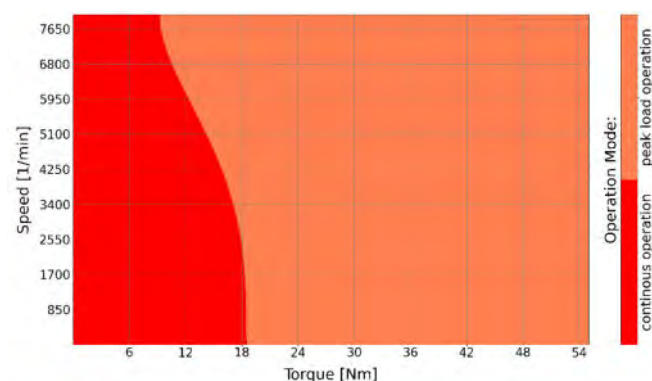
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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



Inrunner BLDC motor with closed housing



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

PLETTENBERG

[illegible]

NOVA 15-70-A2 P30 LW

Partnumber	
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02-044.070.12-000-354

Weight approx	3660 g	All dimensions		A3 2:2
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2	1
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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

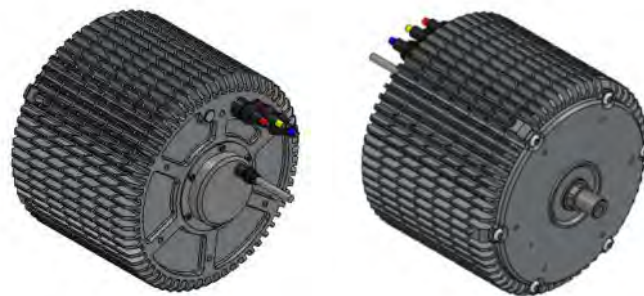
- Super robust housing for applications in the harshest environments
- Designed for high shock and vibration loads
- Qualified to MIL-STD 810H
- Best power-to-weight-to-robustness ratio in its class
- Wear-free position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller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

Specifications

Part number	02-044.070.12-000-353	
Peak output power	20	kW
Peak torque (max. 5s) ⁽¹⁾	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 ²
	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	90 kg with 48x16.4" prop	

Notes:

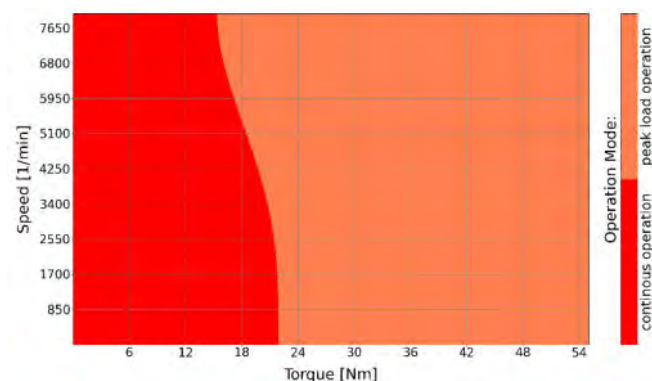
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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



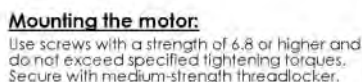
Note: Assuming 25°C ambient temperature and 10 m/s airflow.

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



Inrunner BLDC motor with closed housing



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


Designation	
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NOVA 15-70-B6 P30 LW

Portnummer

02-044.070.12-000-353

Weight approx	24.1g	All dimensions		A3
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Weight applied	3660 g	All dimensions are in mm		2:3

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NOVA Series



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) ⁽¹⁾	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 ² 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:

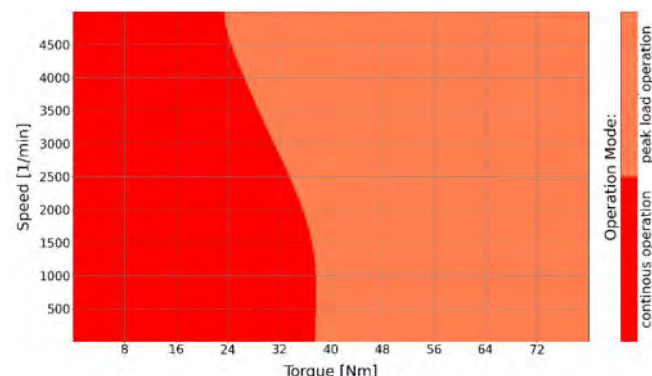
⁽¹⁾ Peak torque with sensor-guided ESC. If using sensorless ESC, peak torque may be 10-20% lower.



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

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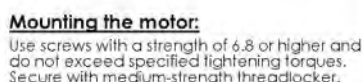
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Inrunner BLDC motor with closed housing



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

Designation	
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NOVA 30-50-B4 P50

Partnumber	
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02-043.050.10-000-096

Weight approx	5600 g	All dimensions		A3 1:1
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2	1
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NOVA Series



NOVA 30-50-B4 P50 WK

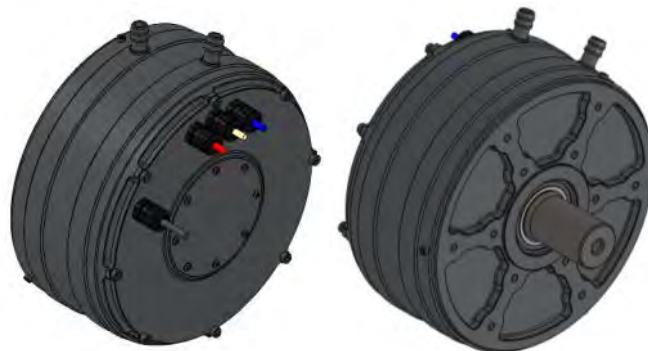
Inrunner BLDC motor with closed housing

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



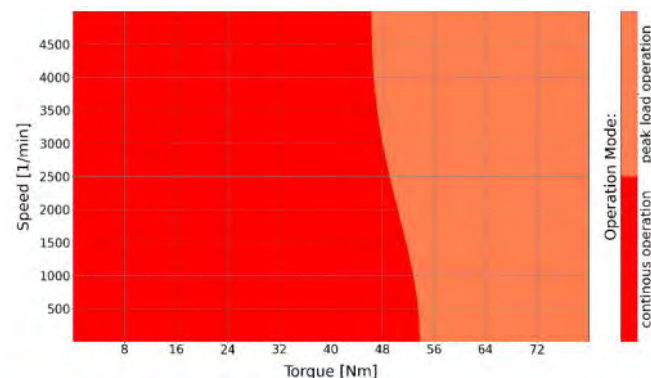
Specifications

Part number	02-043.050.01-000-098	
Peak output power	30	kW
Peak torque (max. 5s) ⁽¹⁾	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 ²
	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.	

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

Notes:

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

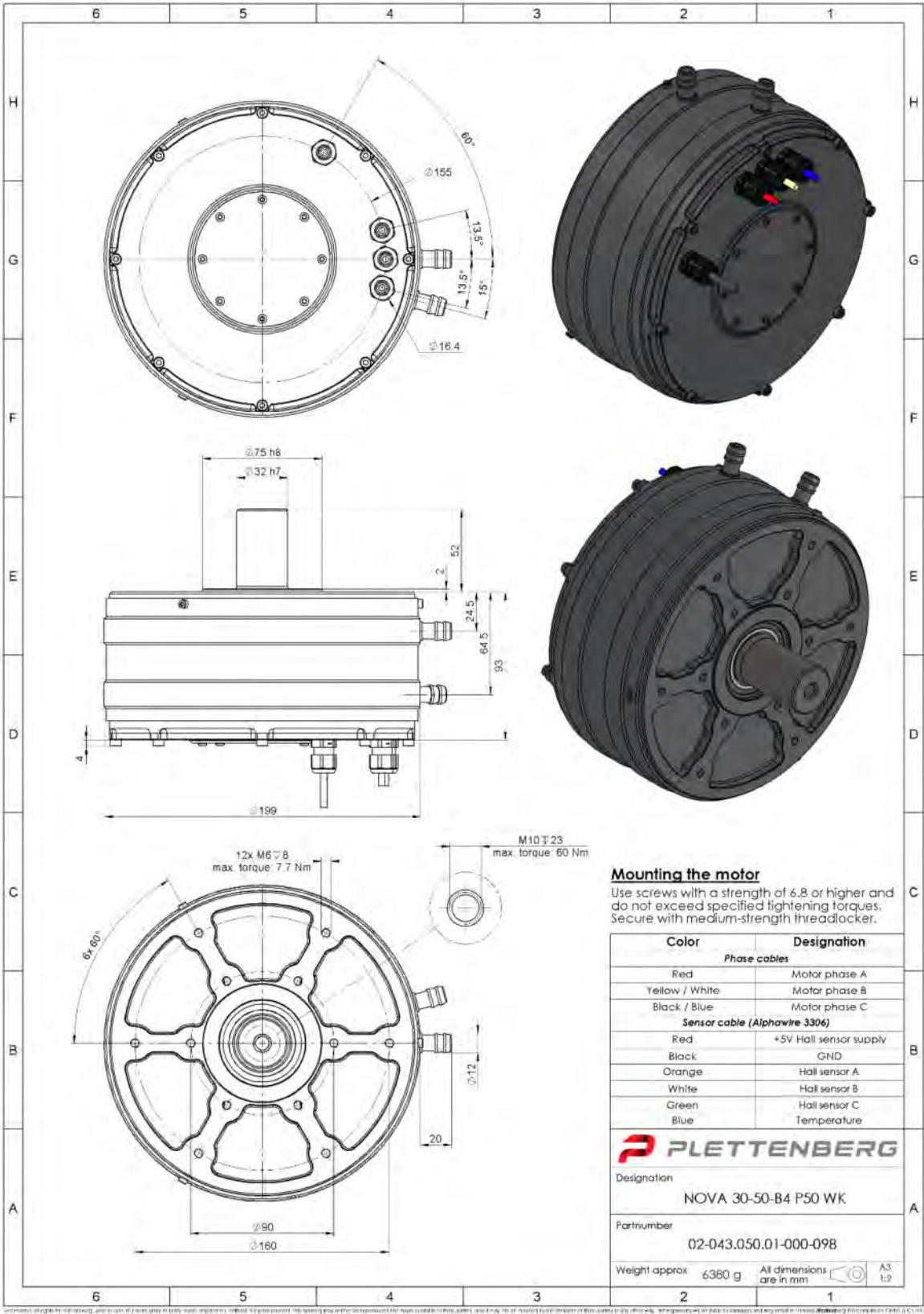
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NOVA Series

NOVA 30-50-B4 P50 WK

Inrunner BLDC motor with closed housing



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NOVA Series



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) ⁽¹⁾	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 ²
	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

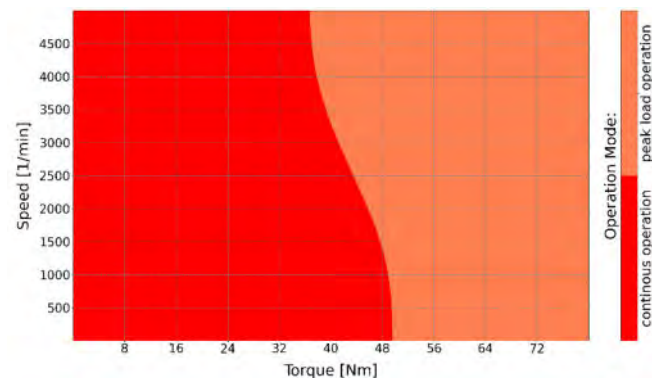
Notes:

⁽¹⁾ 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



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

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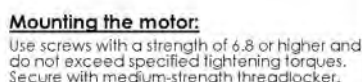
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Inrunner BLDC motor with closed housing



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

Designation	
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NOVA 30-50-B10 P50

Part number

02-043.050.10-000-097

Weight approx	5600 g	All dimensions		A3 1:1
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2	1
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NOVA 30-50-B10 P50 WK

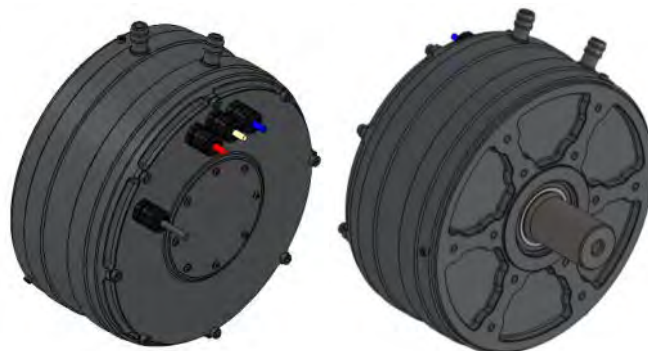
Inrunner BLDC motor with closed housing

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) ⁽¹⁾	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 ²
	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.

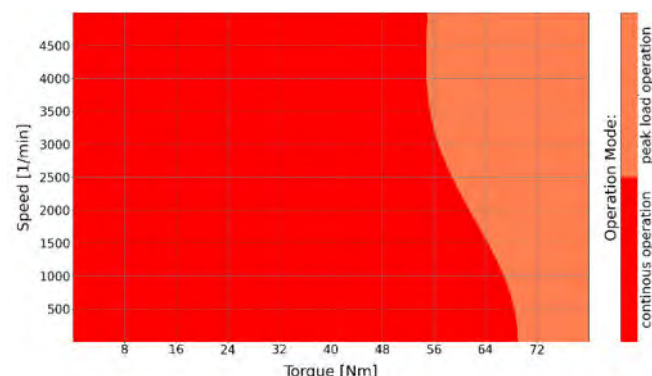
Notes:

⁽¹⁾ 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



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

Options & Customization

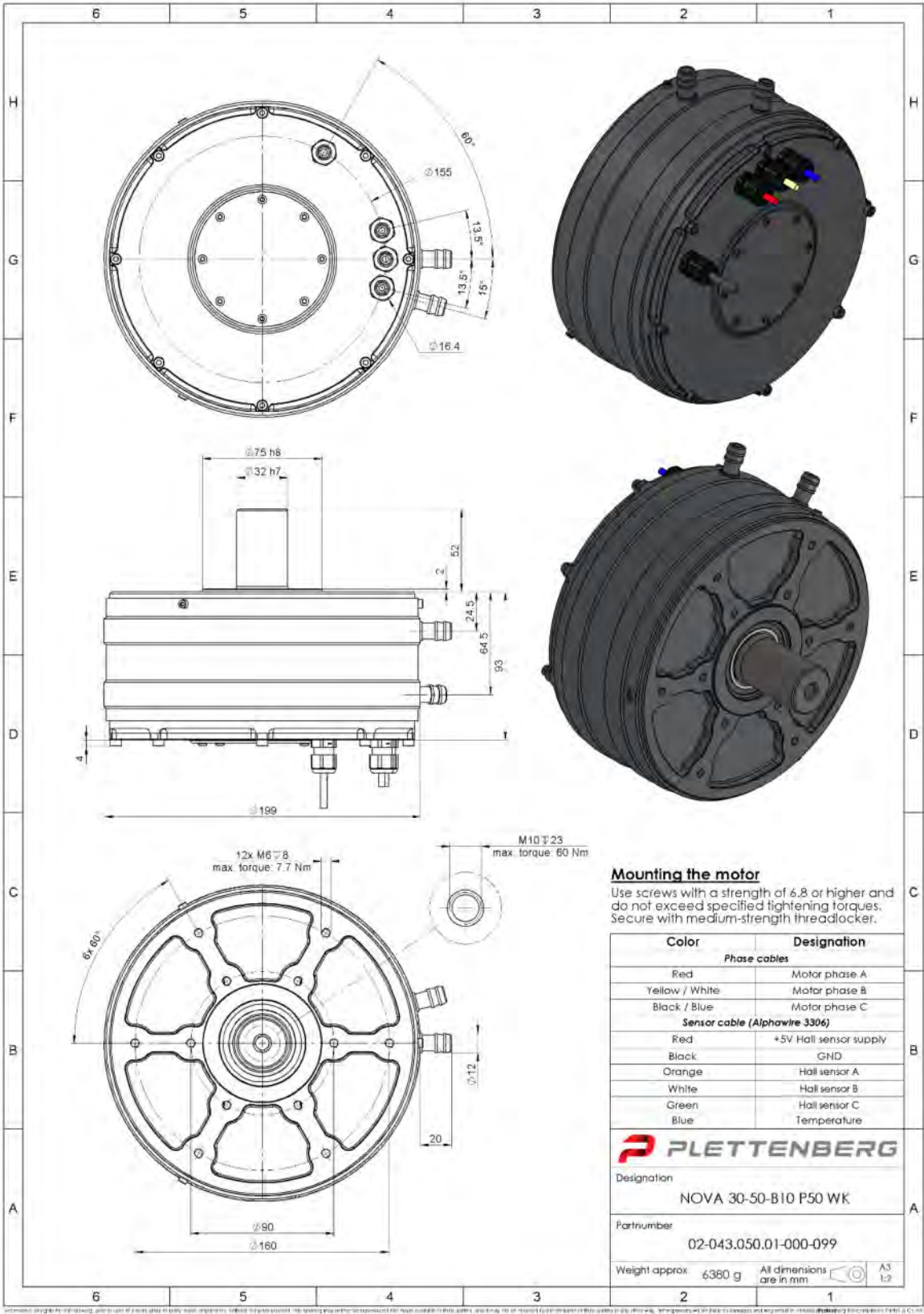
- Custom winding/kV versions
- MIL-STD 810H or RTCA DO160 qualification
- MTBF/S report
- IP67 protection class
- Aerospace or MIL-DTL-38999 connectors
- Mechanical customization
- High/low temperature versions
- High RPM versions



NOVA Series

NOVA 30-50-B10 P50 WK

Inrunner BLDC motor with closed housing



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ORBIT SERIES

Outrunner BLDC motors

ORBIT Series



ORBIT 15-30-B6 P20

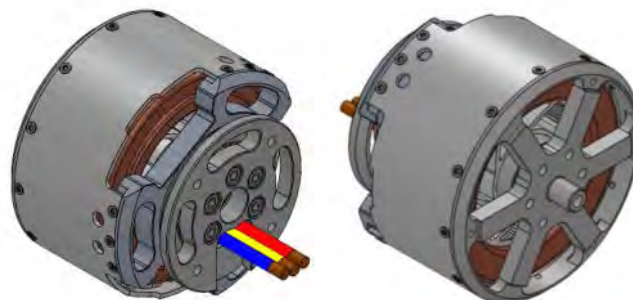
Outrunner BLDC motor

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



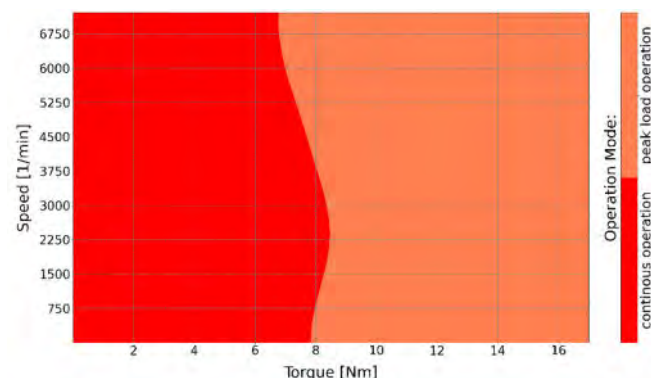
Specifications

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 ² 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



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

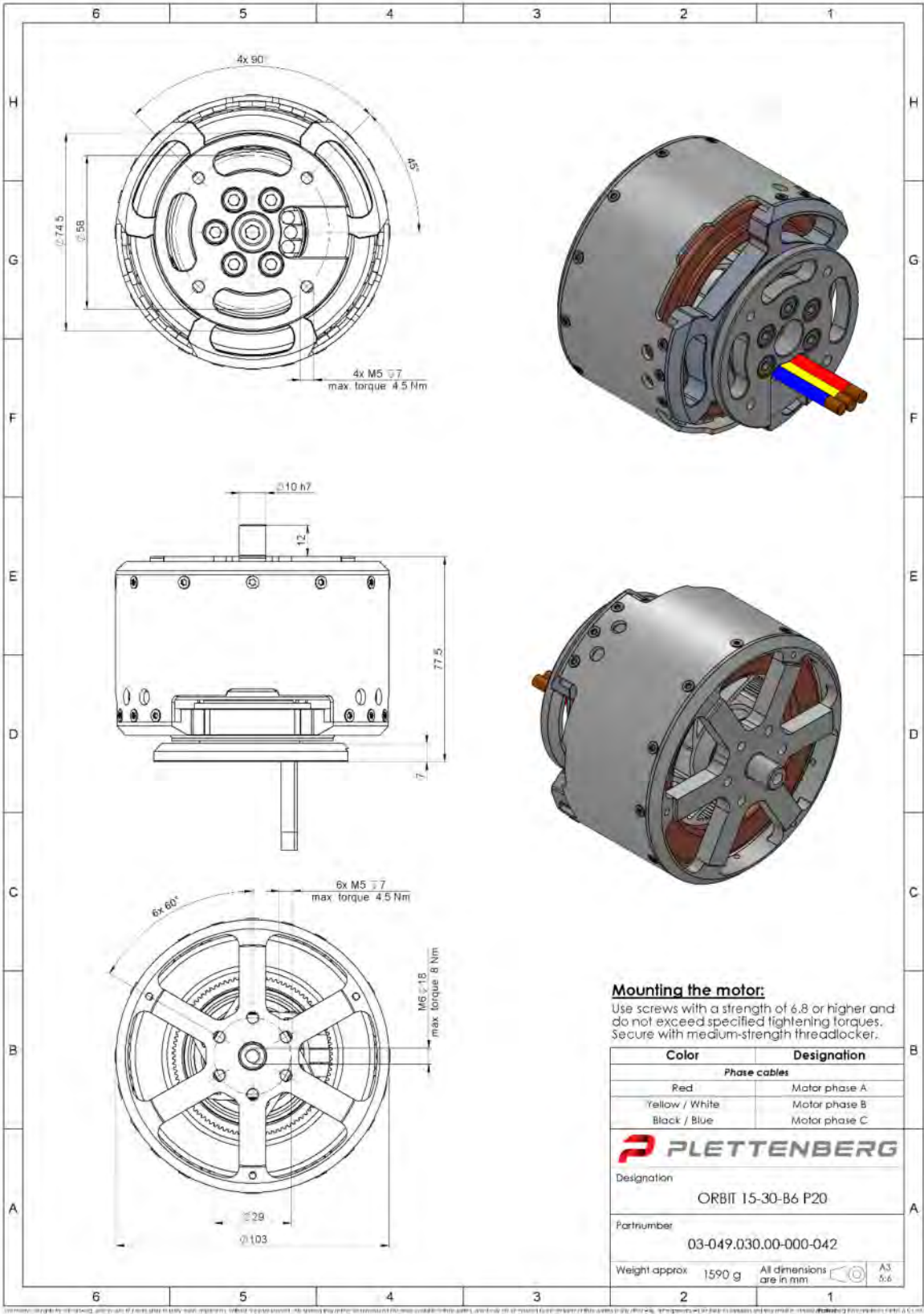
Options & Customization

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



ORBIT 15-30-B6 P20

Outrunner BLDC motor



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ORBIT Series



ORBIT 15-30-B8 P20

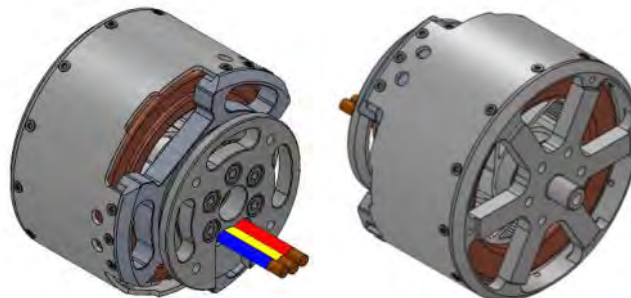
Outrunner BLDC motor

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



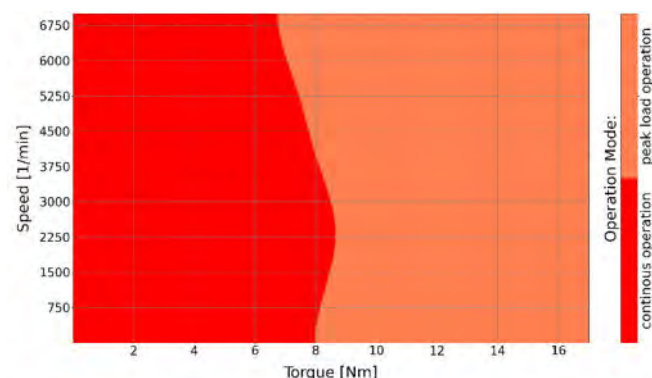
Specifications

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 ² 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

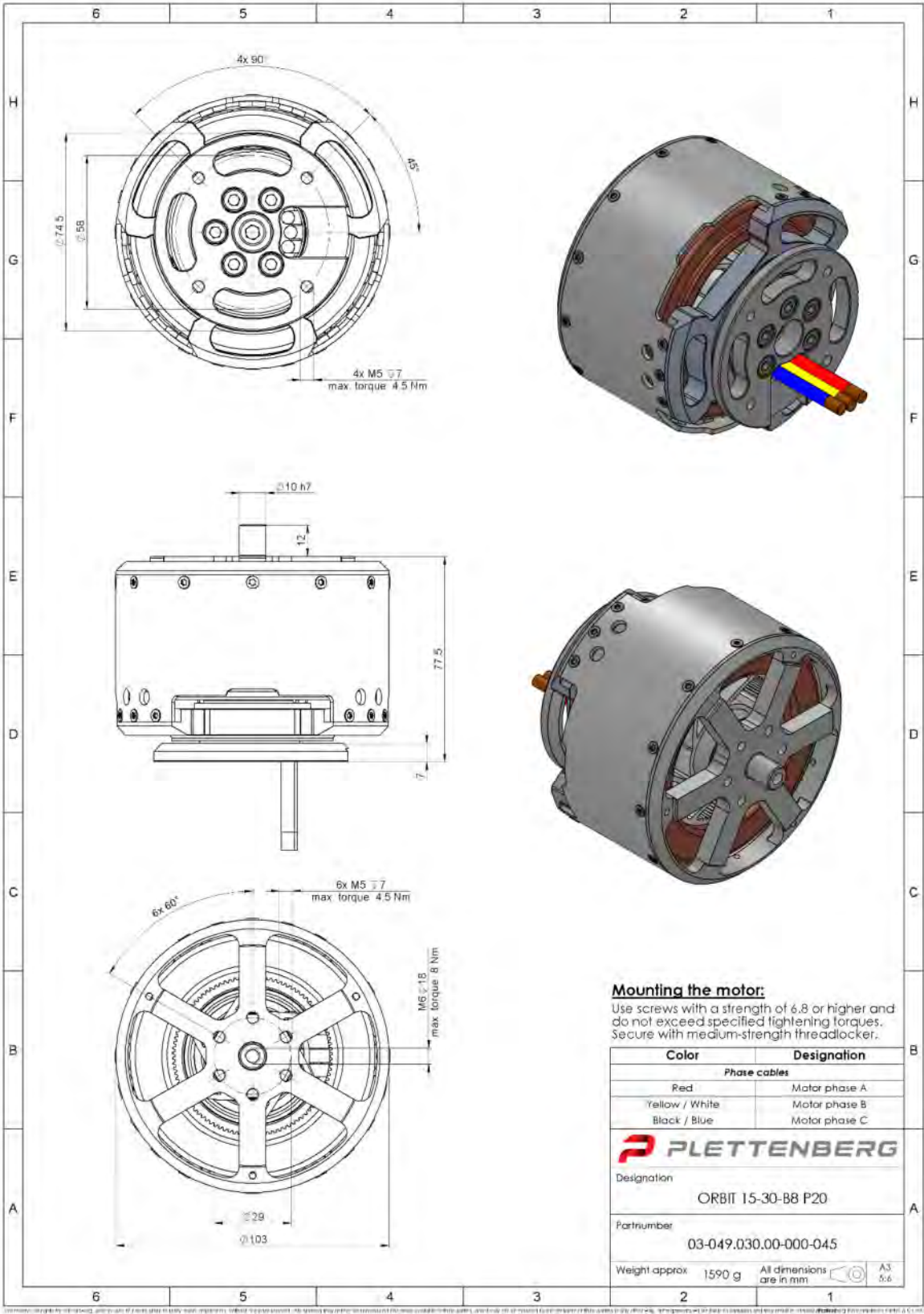
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ORBIT Series

ORBIT 15-30-B8 P20

Outrunner BLDC motor



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ORBIT Series



ORBIT 15-37-B6 P20

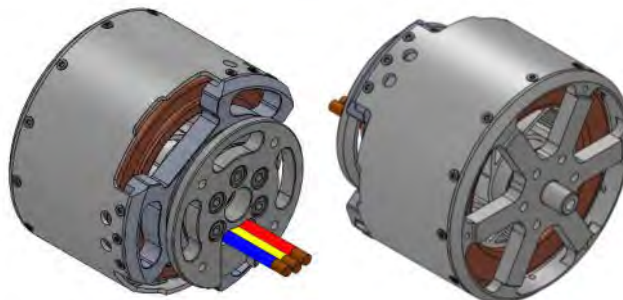
Outrunner BLDC motor

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



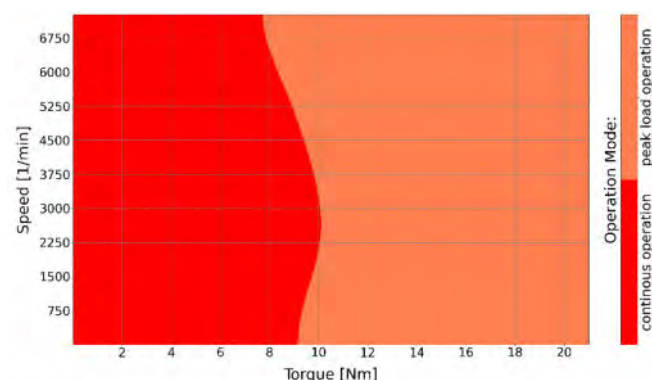
Specifications

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 ²
	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

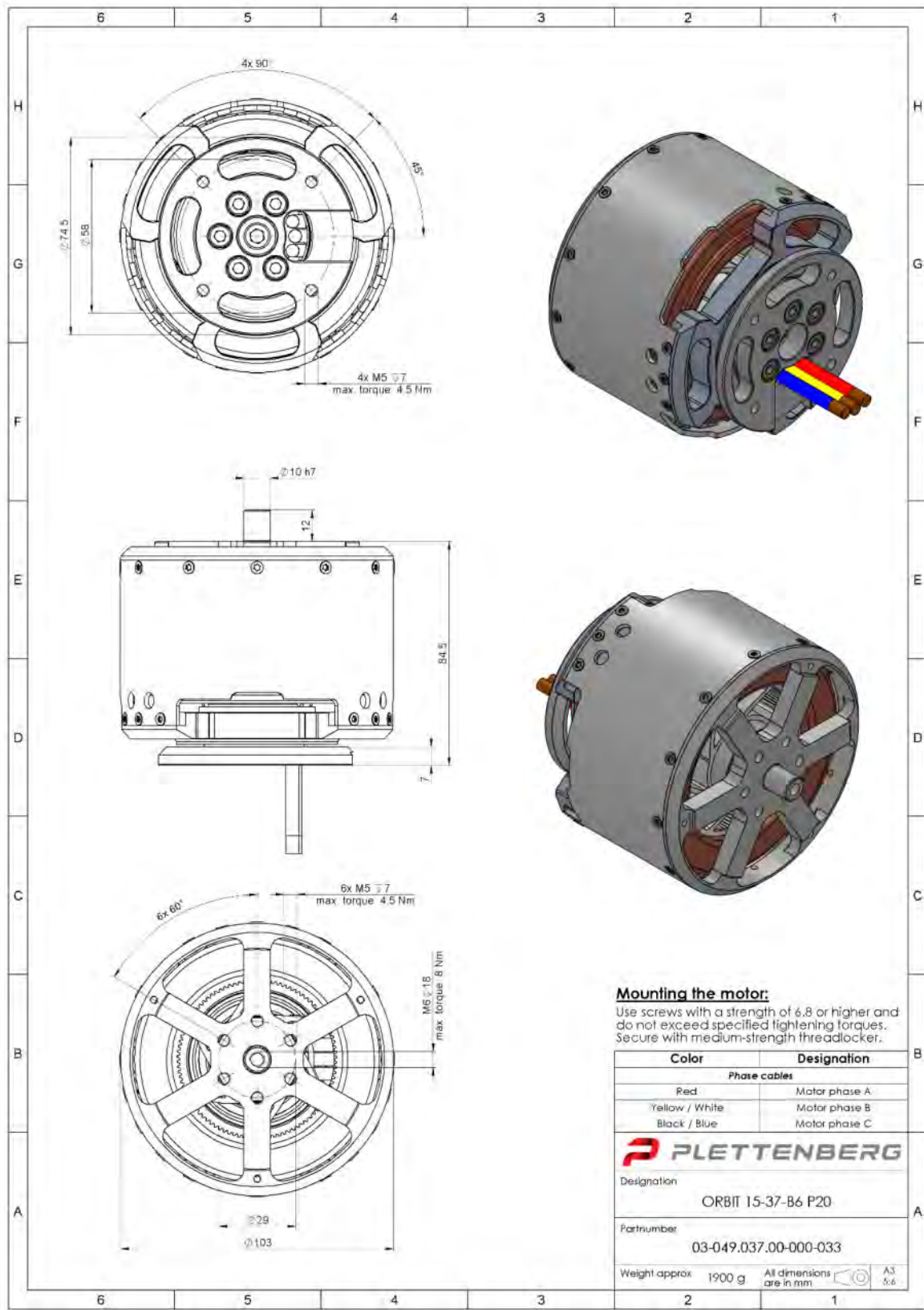
- Custom winding/kV versions
- MTBF/S report
- Mechanical customization or frameless kits
- Propeller study
- Corrosion protection version
- Position and temperature sensors

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ORBIT 15-37-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 15-37-B6 P20
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Partnumber	03-049.037.00-000-033
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Weight approx	1900 g	All dimensions are in mm		A3 5/4
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ORBIT Series



ORBIT 15-37-B8 P20

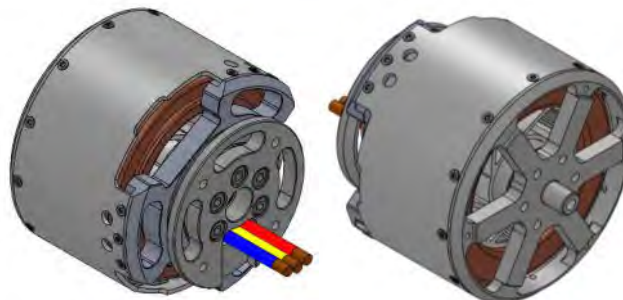
Outrunner BLDC motor

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



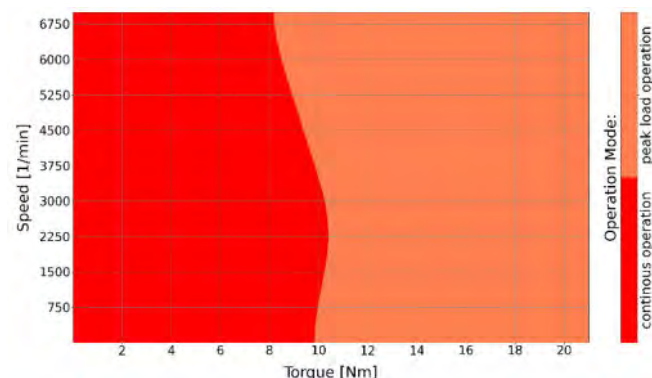
Specifications

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 ²
	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



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

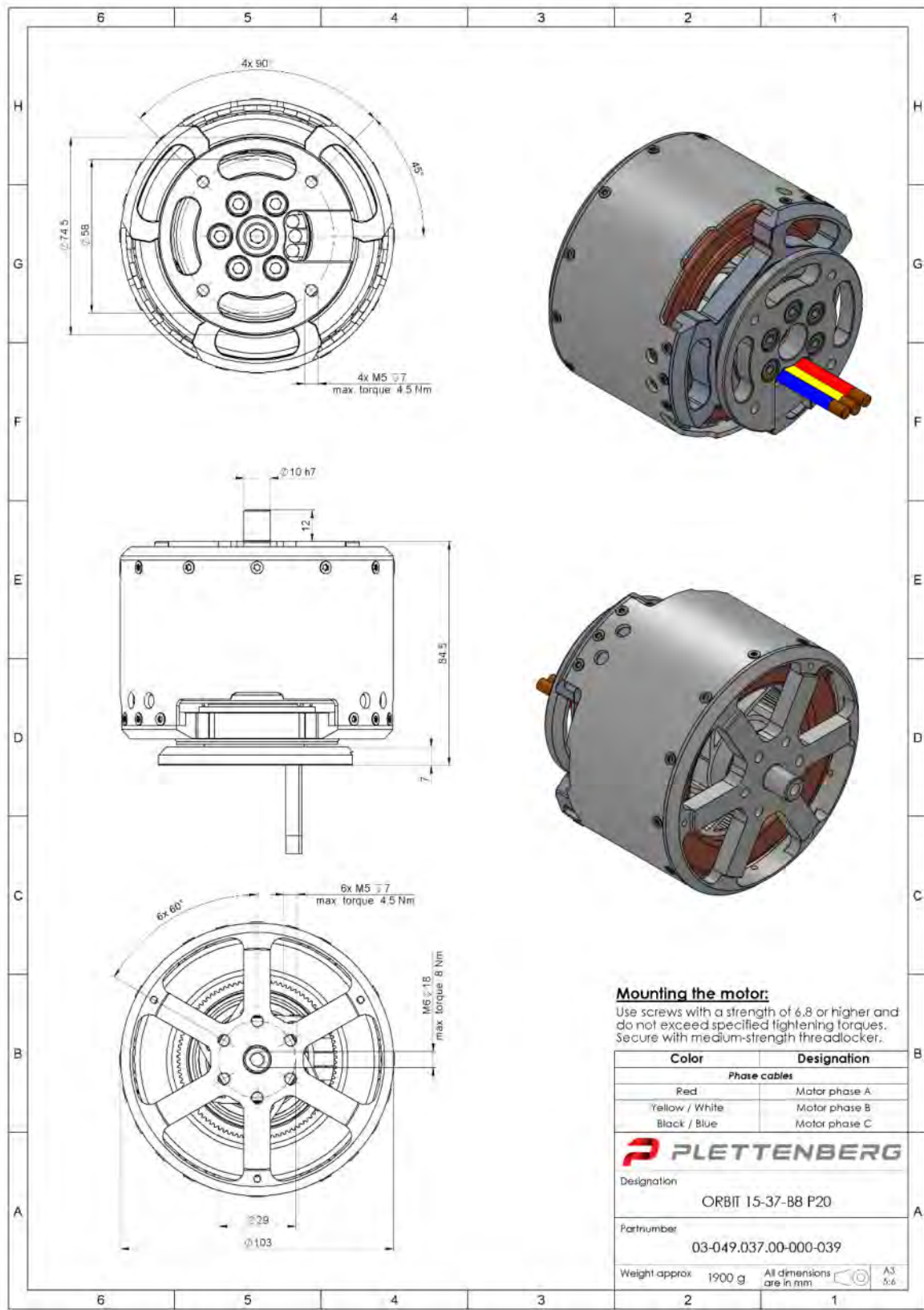
Options & Customization

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



ORBIT 15-37-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
Phase cables	
Red	Motor phase A
Yellow / White	Motor phase B
Black / Blue	Motor phase C

 PLETTENBERG	
Designation	
ORBIT 15-37-B8 P20	
Partnumber	
03-049.037.00-000-039	
Weight approx.	1900 g
All dimensions are in mm	

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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.



USA Representative



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