



**Plettenberg Drive Solutions**  
**COTS PRODUCT BROCHURE**

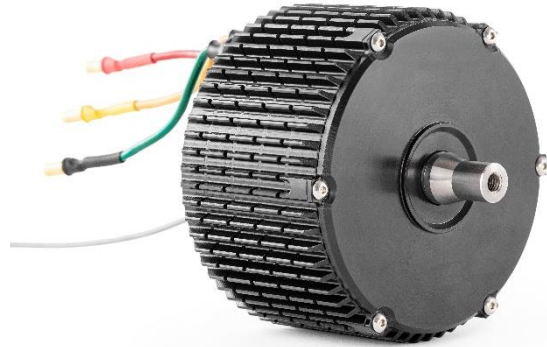


## COTS SOLUTIONS

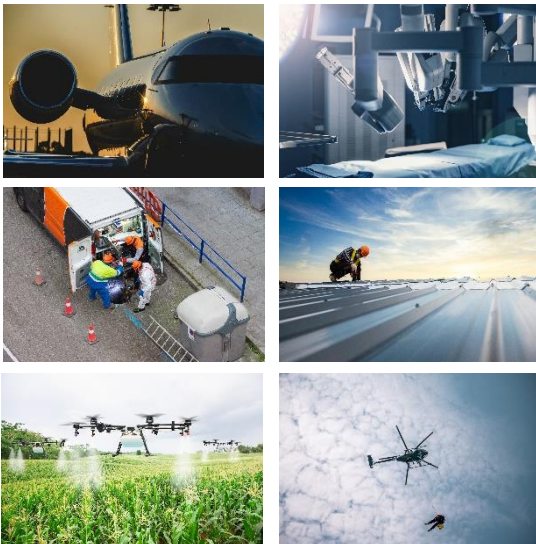
Plettenberg is a leading developer and manufacturer of rugged electric drive solutions for mission critical applications. Our portfolio of commercial-off-the-shelf ("COTS") drive solutions has been designed to cover a wide range of applications in demanding end-markets, such as aerospace, uncrewed systems,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

Our mission is to provide the best power-to-weight-to-robustness ratio as well as best quality to our customers. 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, hydraulic 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

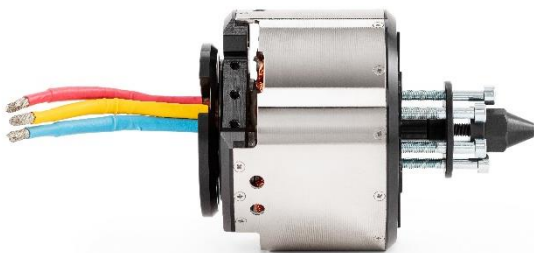
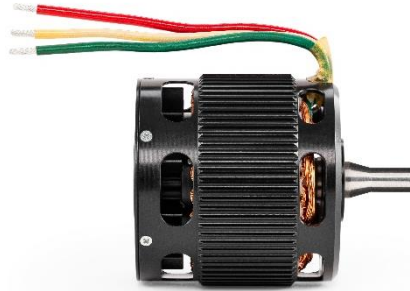
Our NOVA series of inrunners feature an extra rugged closed housing design with ingress protection class of IP54. The motors can be applied in the harshest environments, such as desert, snow and sea water operations. At the same time, the NOVA motors are designed to be extremely efficient and have market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

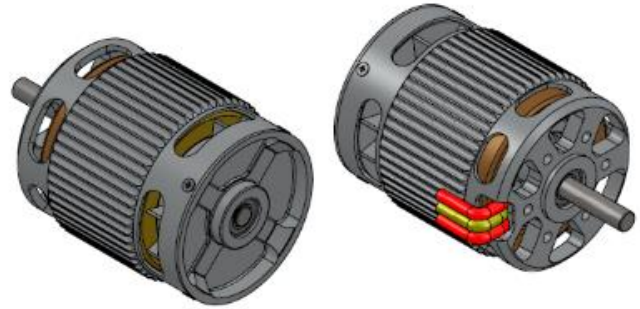
Inrunner BLDC motor with open housing

### Overview

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

### Features

- Ultra-light housing for weight sensitive applications
- Integrated passive fan for optimized cooling
- Designed for use with sensorless ESCs
- High torque density

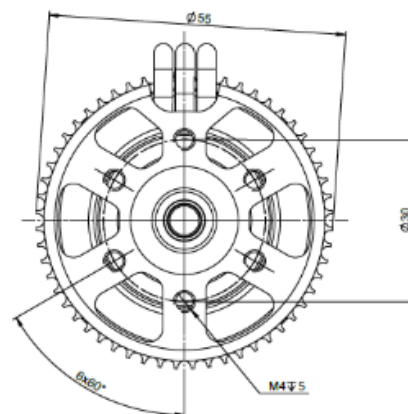
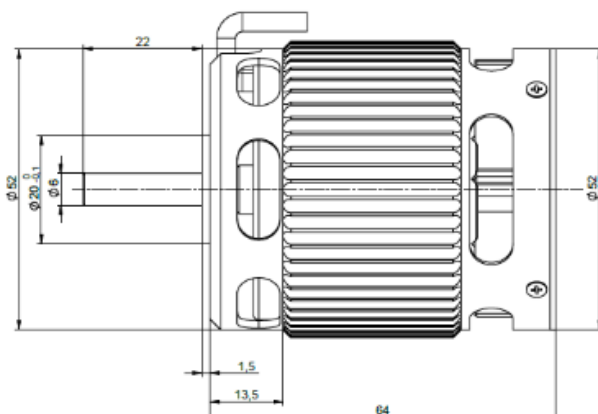


### Specifications

|                           |                       |       |
|---------------------------|-----------------------|-------|
| Peak output power         | 2                     | kW    |
| Peak torque <sup>1</sup>  | 2.4                   | Nm    |
| Max. speed                | 15,000                | rpm   |
| Voltage range             | 15-30                 | V     |
| Speed constant (kV)       | 515                   | rpm/V |
| Diameter                  | 55                    | mm    |
| Length                    | 64                    | mm    |
| Weight                    | 420                   | g     |
| Phase cable length        | 100                   | mm    |
| Protection class          | IP20                  |       |
| 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)



## ADVANCE Series

# ADVANCE 1-30-B20 P14

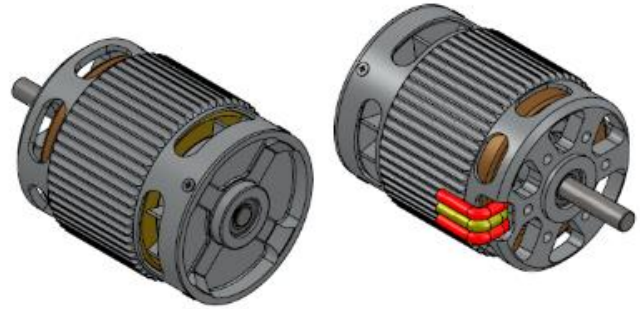
Inrunner BLDC motor with open housing

### Overview

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

### Features

- Ultra-light housing for weight sensitive applications
- Integrated passive fan for optimized cooling
- Designed for use with sensorless ESCs
- High torque density

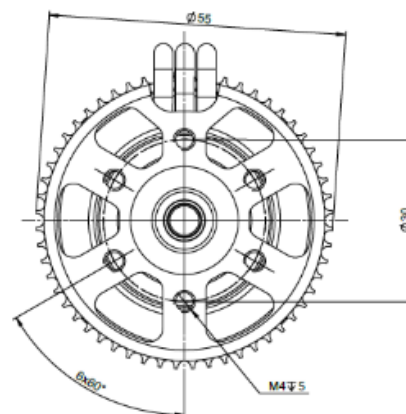
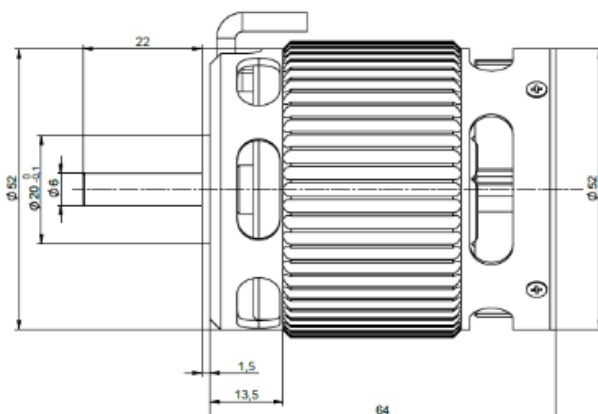


### Specifications

|                           |                       |       |
|---------------------------|-----------------------|-------|
| Peak output power         | 2                     | kW    |
| Peak torque <sup>1</sup>  | 2.4                   | Nm    |
| Max. speed                | 15,000                | rpm   |
| Voltage range             | 15-50                 | V     |
| Speed constant (kV)       | 309                   | rpm/V |
| Diameter                  | 55                    | mm    |
| Length                    | 64                    | mm    |
| Weight                    | 420                   | g     |
| Phase cable length        | 100                   | mm    |
| Protection class          | IP20                  |       |
| 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)



## 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 the most demanding applications, including uncrewed systems and aerospace.

### Features

- Ultra-light housing for weight sensitive applications
- Integrated passive fan for optimized cooling
- Designed for use with sensorless ESCs
- High torque density

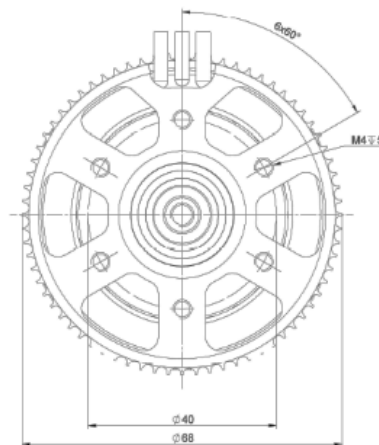
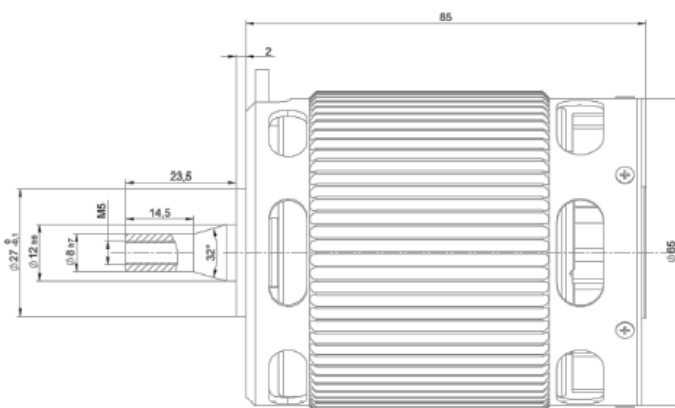


### Specifications

|                           |                         |       |
|---------------------------|-------------------------|-------|
| Peak output power         | 5                       | kW    |
| Peak torque <sup>1</sup>  | 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                    | 830                     | g     |
| Phase cable length        | 100                     | mm    |
| Protection class          | IP20                    |       |
| 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)



## 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 the most demanding applications, including uncrewed systems and aerospace.

### Features

- Ultra-light housing for weight sensitive applications
- Integrated passive fan for optimized cooling
- Designed for use with sensorless ESCs
- High torque density

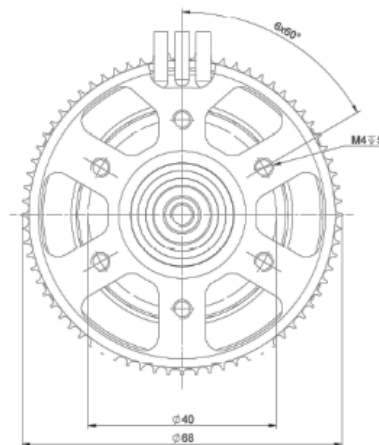
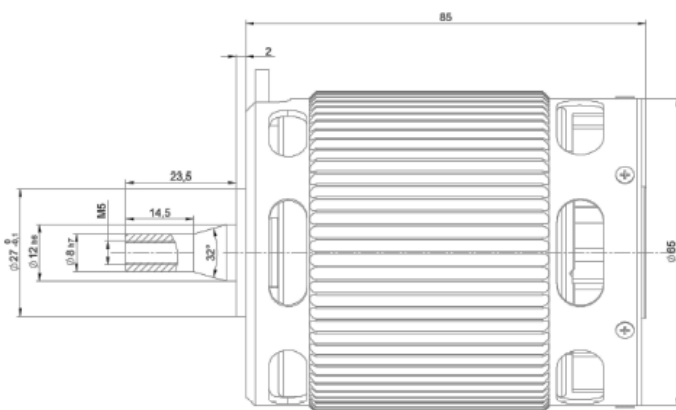


### Specifications

|                           |                         |       |
|---------------------------|-------------------------|-------|
| Peak output power         | 5                       | kW    |
| Peak torque <sup>1</sup>  | 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                    | 830                     | g     |
| Phase cable length        | 100                     | mm    |
| Protection class          | IP20                    |       |
| 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)





# **NOVA SERIES**

**Inrunner BLDC motors with closed housing design**

## NOVA Series

# NOVA 4-30-B8 P20 LW

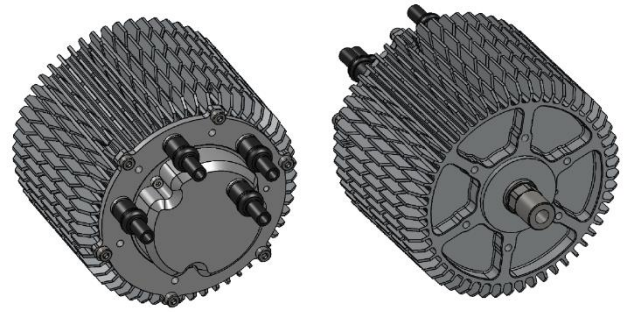
Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

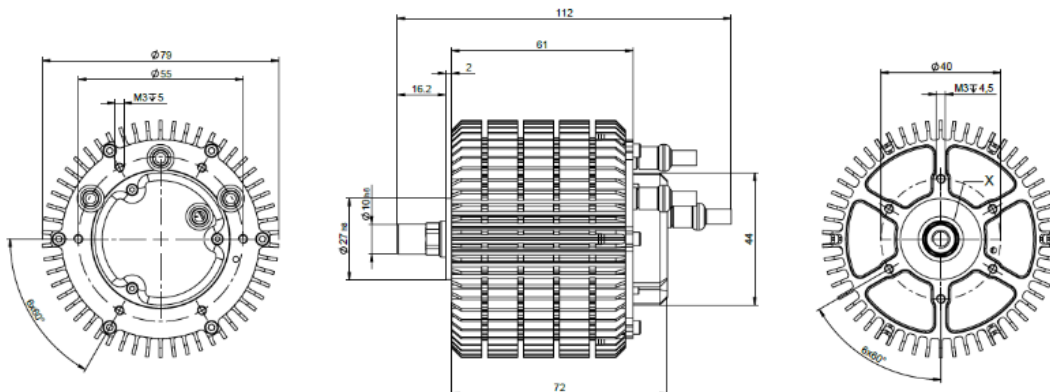
|  |   |       |
|--|---|-------|
| Peak output power                                  | 2.4   | kW    |
| Peak torque <sup>1</sup>                           | 4   | Nm    |
| Max. speed   | 11,000  | rpm   |
| Voltage range                                      | 15-36   | V     |
| Speed constant (kV)                                | 279   | rpm/V |
| Diameter   | 79  | mm    |
| Length   | 61  | mm    |
| Weight   | 700   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                       |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 4-30-B12 P20 LW

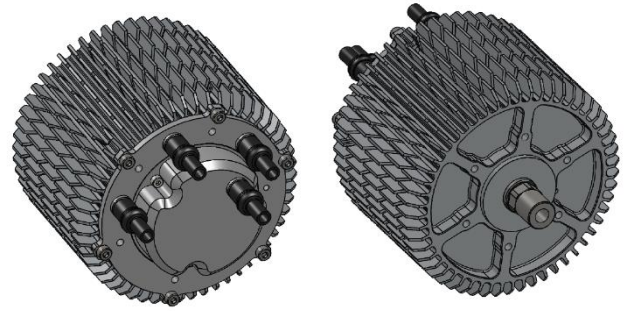
Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

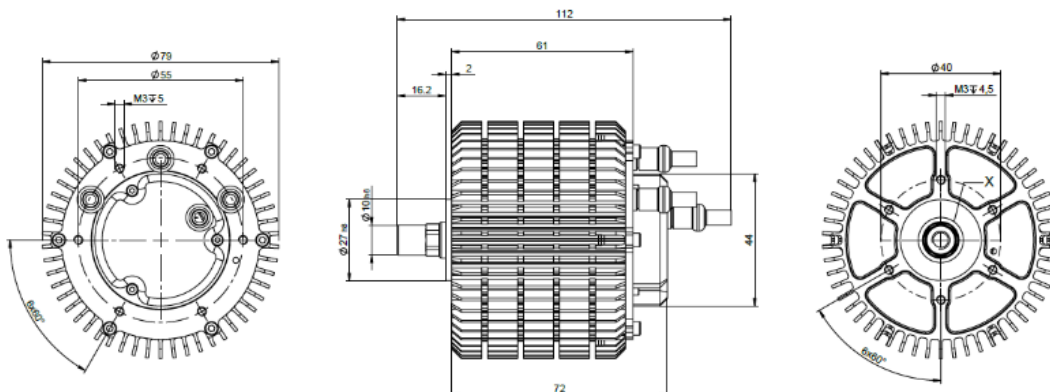
|  |   |       |
|--|---|-------|
| Peak output power                                  | 2.4   | kW    |
| Peak torque <sup>1</sup>                           | 4   | Nm    |
| Max. speed   | 11,000  | rpm   |
| Voltage range                                      | 15-60   | V     |
| Speed constant (kV)                                | 186   | rpm/V |
| Diameter   | 79  | mm    |
| Length   | 61  | mm    |
| Weight   | 700   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                       |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 4-50-B4 P20 LW

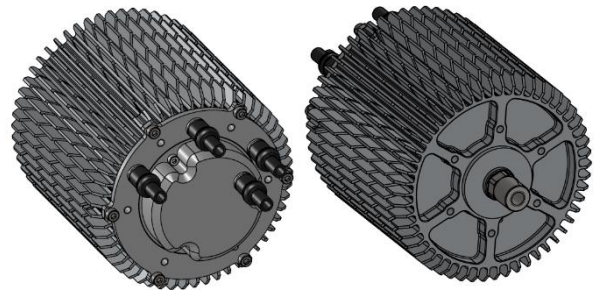
Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

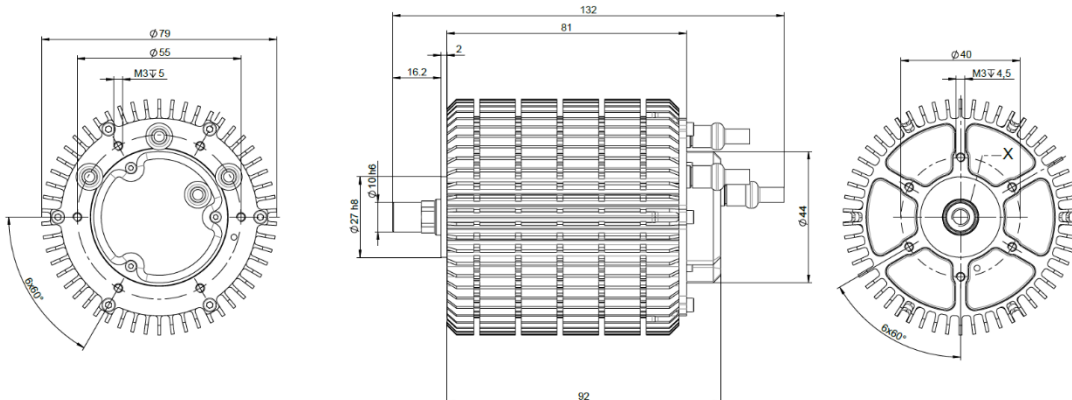
|  |   |       |
|--|---|-------|
| Peak output power                                  | 4   | kW    |
| Peak torque <sup>1</sup>                           | 6.5   | Nm    |
| Max. speed   | 11,000  | rpm   |
| Voltage range                                      | 15-30   | V     |
| Speed constant (kV)                                | 330   | rpm/V |
| Diameter   | 79  | mm    |
| Length   | 81  | mm    |
| Weight   | 970   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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"                              |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 4-50-B8 P20 LW

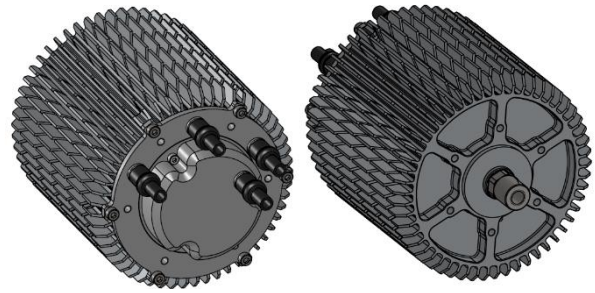
Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

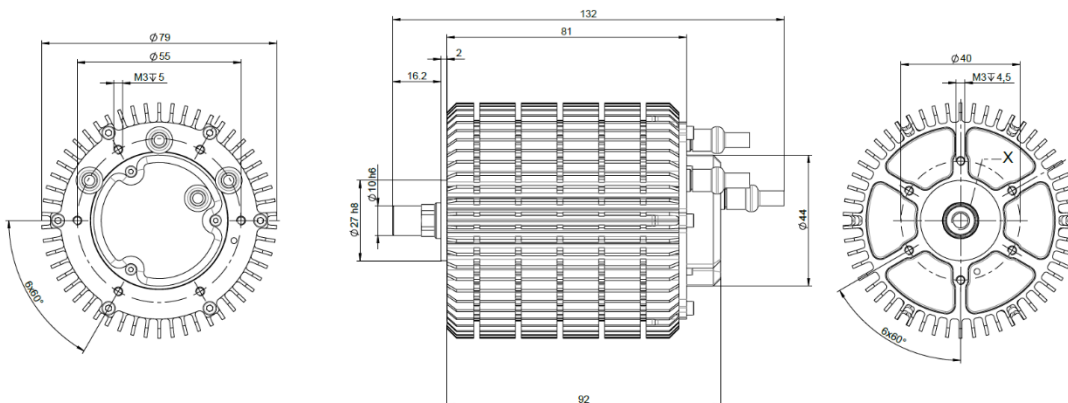
|  |   |       |
|--|---|-------|
| Peak output power                                  | 4   | kW    |
| Peak torque <sup>1</sup>                           | 6.5   | Nm    |
| Max. speed   | 11,000  | rpm   |
| Voltage range                                      | 20-60   | V     |
| Speed constant (kV)                                | 165   | rpm/V |
| Diameter   | 79  | mm    |
| Length   | 81  | mm    |
| Weight   | 970   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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"                              |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-20-B4 P30 LW

Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

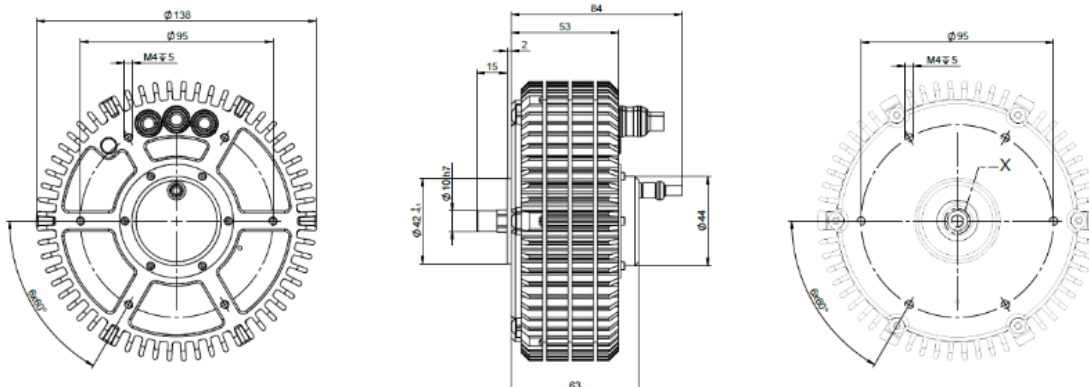
|  |   |       |
|--|---|-------|
| Peak output power                                  | 6   | kW    |
| Peak torque <sup>1</sup>                           | 16  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 15-36   | V     |
| Speed constant (kV)                                | 255   | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 53  | mm    |
| Weight   | 1,480   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-20-B6 P30 LW

Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

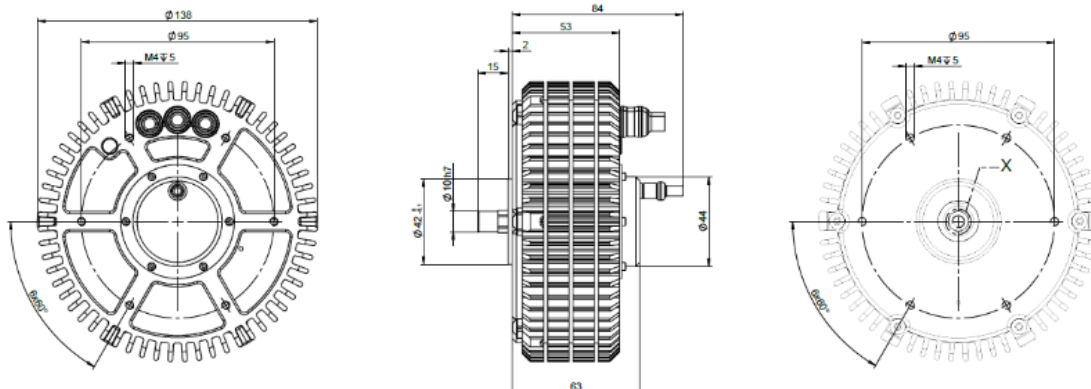
|  |   |       |
|--|---|-------|
| Peak output power                                  | 6   | kW    |
| Peak torque <sup>1</sup>                           | 16  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range recommended                          | 15-50   | V     |
| Speed constant (kV)                                | 170   | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 53  | mm    |
| Weight   | 1,480   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-25-B6 P30 LW

Inrunner BLDC motor with closed housing

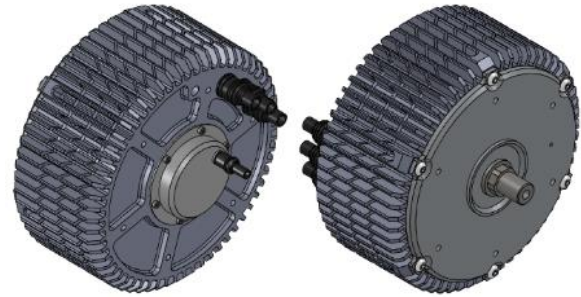


### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

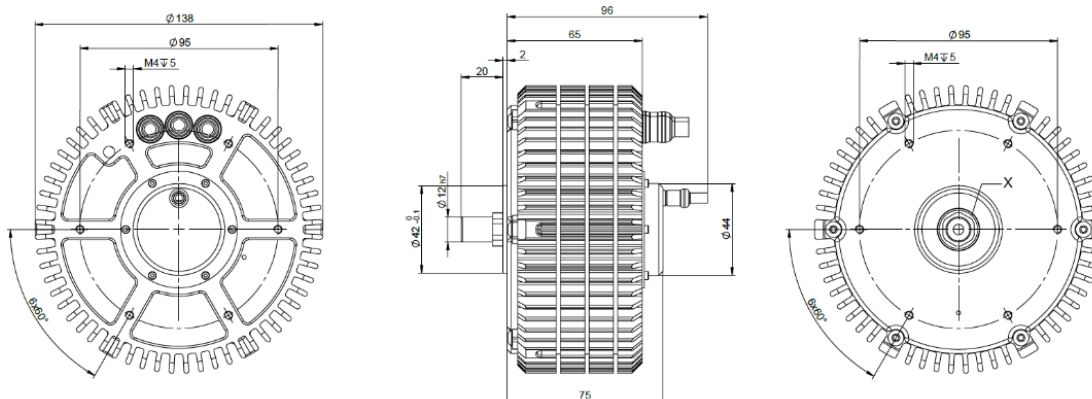
|  |   |       |
|--|---|-------|
| Peak output power                                  | 7   | kW    |
| Peak torque <sup>1</sup>                           | 20  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 15-60   | V     |
| Speed constant (kV)                                | 133   | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 65  | mm    |
| Weight   | 1,800   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                          |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-25-B12 P30 LW

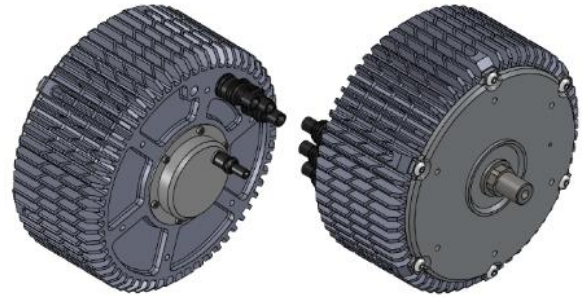
Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

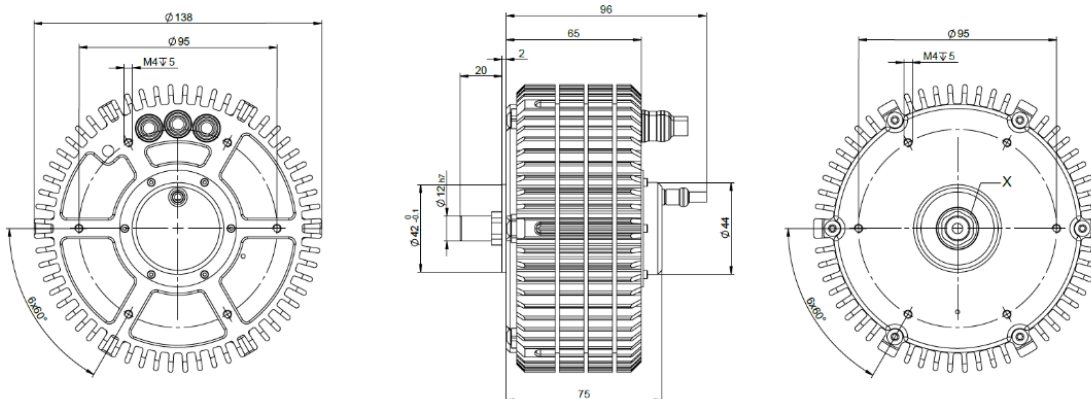
|  |   |       |
|--|---|-------|
| Peak output power                                  | 7   | kW    |
| Peak torque <sup>1</sup>                           | 20  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 40-120  | V     |
| Speed constant (kV)                                | 44  | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 65  | mm    |
| Weight   | 1,800   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                          |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-30-B6 P30 LW

Inrunner BLDC motor with closed housing



### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

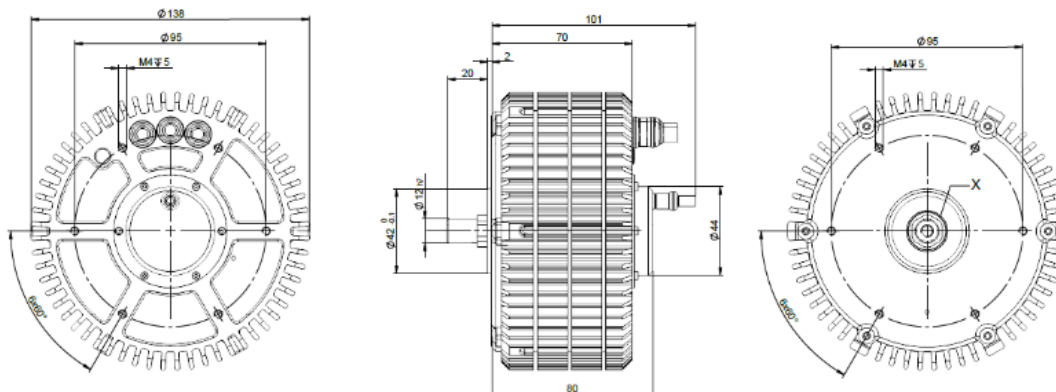
|  |   |       |
|--|---|-------|
| Peak output power                                  | 9   | kW    |
| Peak torque <sup>1</sup>                           | 24  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 15-60   | V     |
| Speed constant (kV)                                | 111   | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 70  | mm    |
| Weight   | 2,000   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-30-B10 P30 LW

Inrunner BLDC motor with closed housing

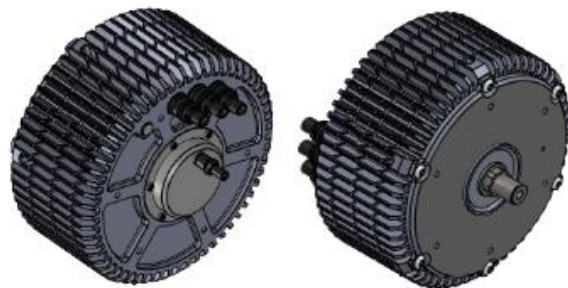


### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

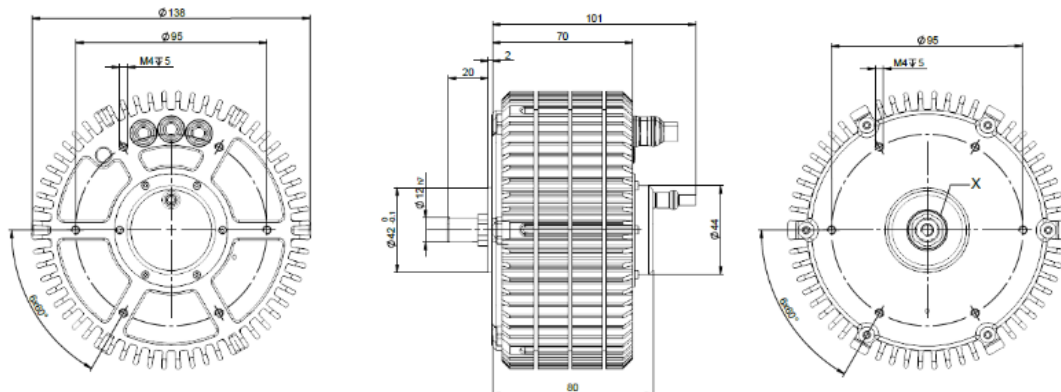
|  |   |       |
|--|---|-------|
| Peak output power                                  | 9   | kW    |
| Peak torque <sup>1</sup>                           | 24  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 30-120  | V     |
| Speed constant (kV)                                | 65  | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 70  | mm    |
| Weight   | 2,000   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# 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 the most demanding applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

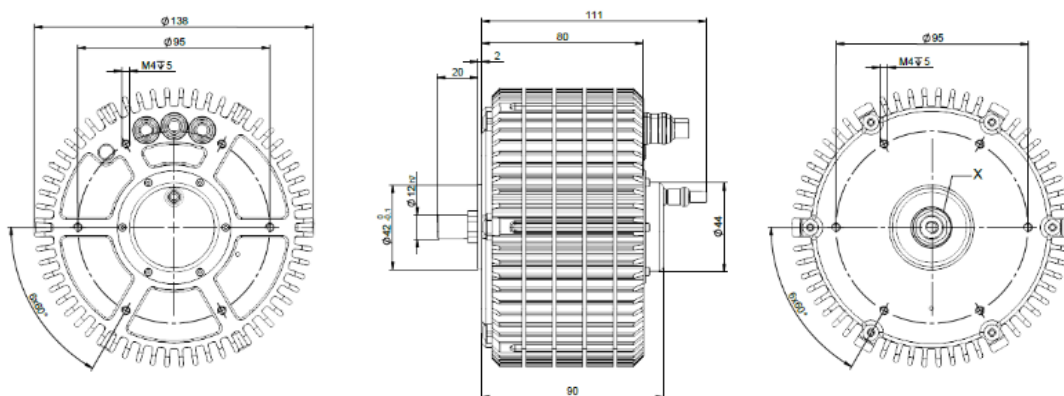
|  |   |       |
|--|---|-------|
| Peak output power                                  | 12  | kW    |
| Peak torque <sup>1</sup>                           | 32  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 15-60   | V     |
| Speed constant (kV)                                | 125   | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 80  | mm    |
| Weight   | 2,400   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

- Plettenberg propeller coupling: PC LW 6K 12mm
- Plettenberg ESCs: MST 60-260, MST 60-290, MST 80-240
- Plettenberg gold connectors: GC6-00 / GC6-90

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# 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 the most demanding applications, including uncrewed systems and aerospace.

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

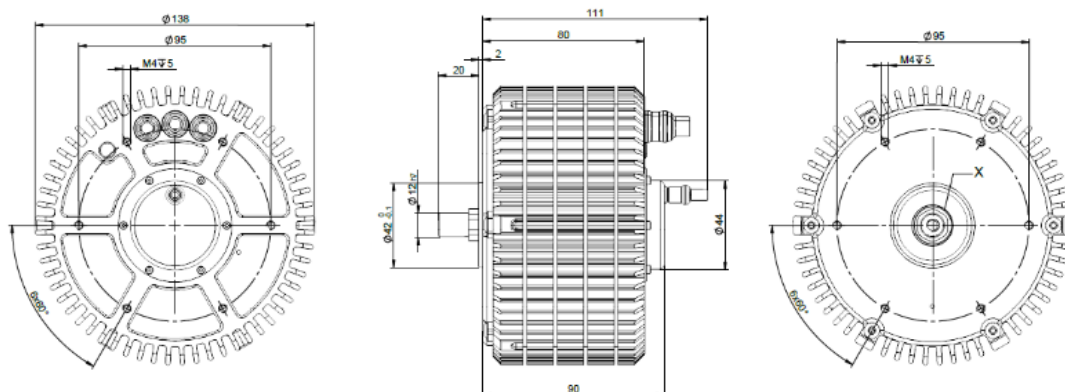
|  |   |       |
|--|---|-------|
| Peak output power                                  | 12  | kW    |
| Peak torque <sup>1</sup>                           | 32  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 40-120  | V     |
| Speed constant (kV)                                | 63  | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 80  | mm    |
| Weight   | 2,400   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-50-B4 P30 LW

Inrunner BLDC motor with closed housing

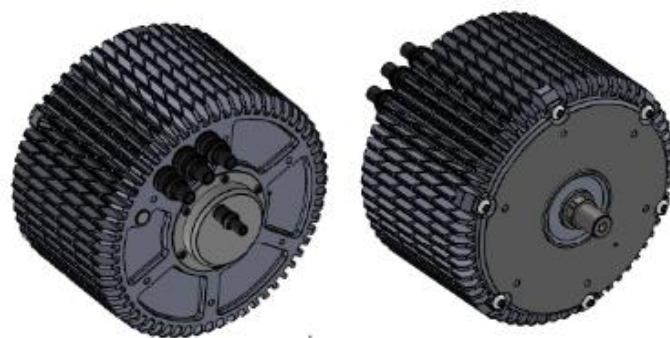


### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

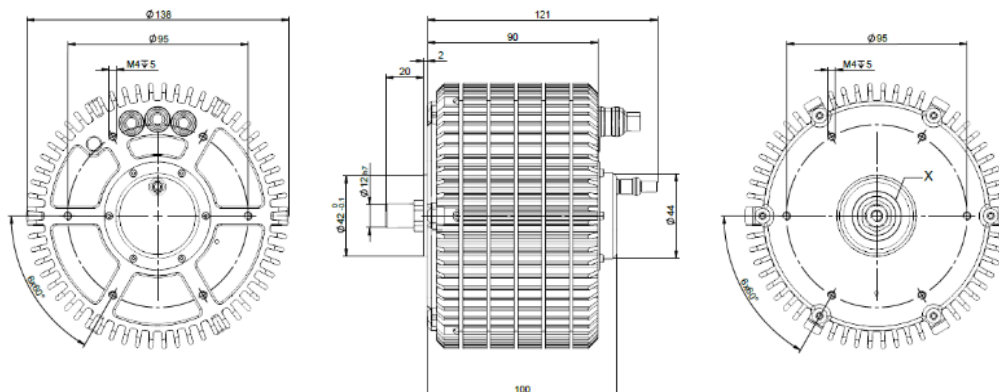
|  |   |       |
|--|---|-------|
| Peak output power                                  | 15  | kW    |
| Peak torque <sup>1</sup>                           | 40  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 15-80   | V     |
| Speed constant (kV)                                | 99  | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 90  | mm    |
| Weight   | 2,800   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-50-B4 P30 WK

Inrunner BLDC motor with closed housing

### Overview

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

### Features

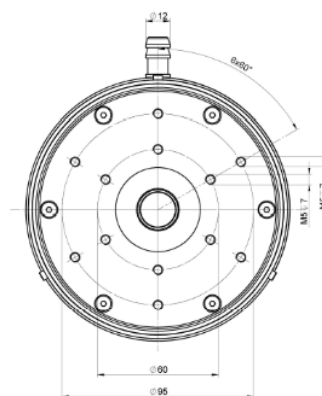
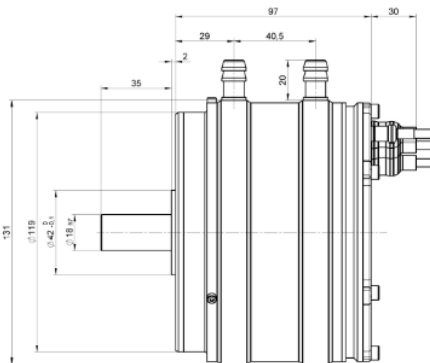
- Super robust housing for mission critical applications
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard

### Specifications

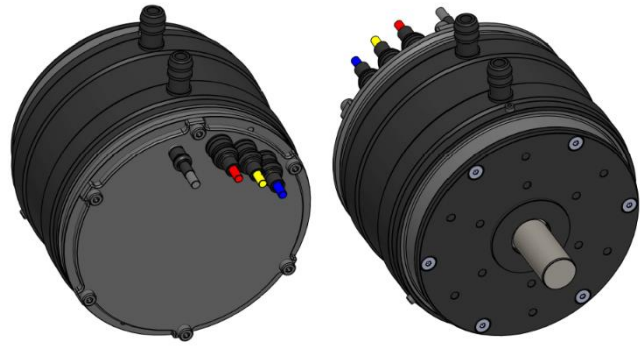
|  |  |       |
|--|--|-------|
| Peak output power                                  | 15   | kW    |
| Peak torque <sup>1</sup>                           | 40   | Nm    |
| Max. speed   | 8,000  | rpm   |
| Voltage range                                      | 15-80  | V     |
| Speed constant (kV)                                | 99   | rpm/V |
| Diameter (ex. water inlet)                         | 131  | mm    |
| Length   | 97   | mm    |
| Weight   | 3,200  | g     |
| Phase cable length                                 | 100  | mm    |
| Sensor cable length                                | 400  | mm    |
| Protection class                                   | IP54   |       |
| 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:

<sup>1</sup> With sensor-guided ESC



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### Complementary Products

- Plettenberg ESCs: MST 60-260, MST 60-290, MST 60-130, MST 80-240, MST 80-350
- Plettenberg gold connectors: GC6-00 / GC6-90

## NOVA Series

# NOVA 15-50-B6 P30 LW

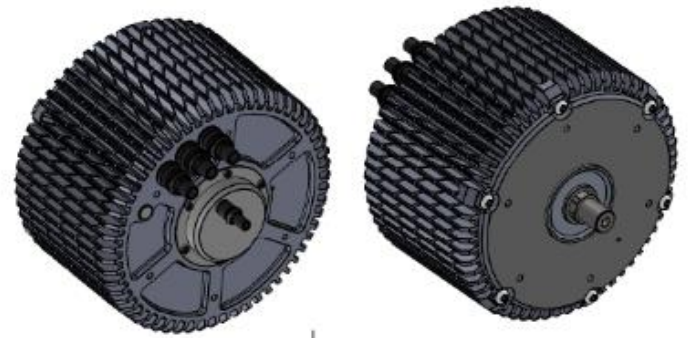
Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

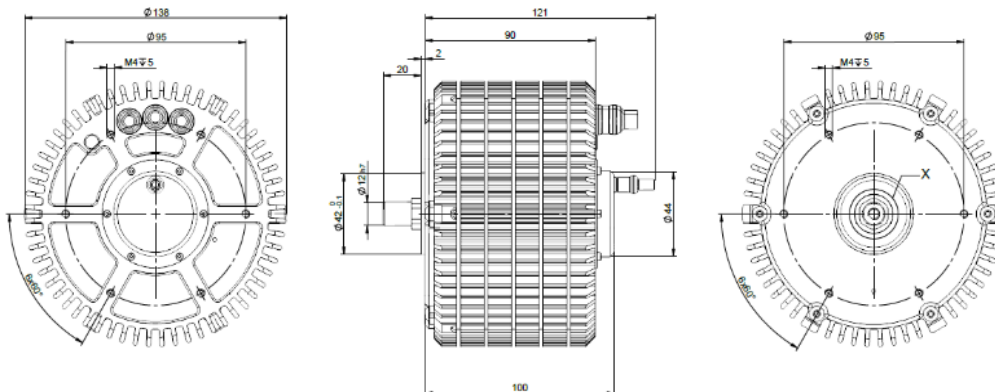
|  |   |       |
|--|---|-------|
| Peak output power                                  | 15  | kW    |
| Peak torque <sup>1</sup>                           | 40  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 30-120  | V     |
| Speed constant (kV)                                | 65  | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 90  | mm    |
| Weight   | 2,800   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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”                             |       |

### Complementary Products

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

#### Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-50-B6 P30 WK

Inrunner BLDC motor with closed housing

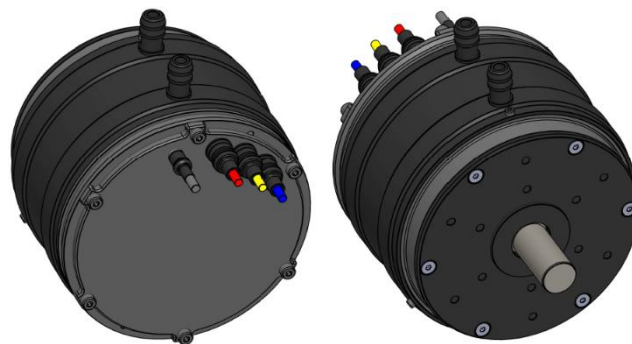


### Overview

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

### Features

- Super robust housing for mission critical applications
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard



### Specifications

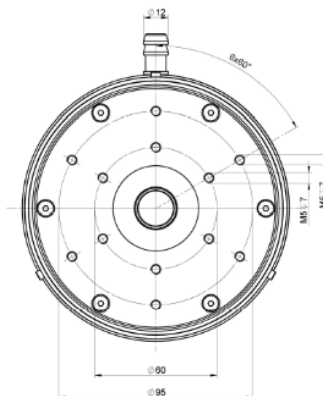
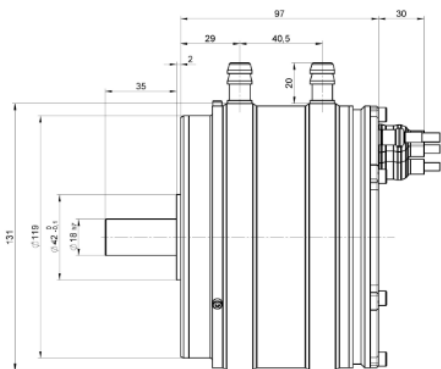
|  |  |       |
|--|--|-------|
| Peak output power                                  | 15   | kW    |
| Peak torque <sup>1</sup>                           | 40   | Nm    |
| Max. speed   | 8,000  | rpm   |
| Voltage range                                      | 30-120   | V     |
| Speed constant (kV)                                | 65   | rpm/V |
| Diameter (ex. water inlet)                         | 131  | mm    |
| Length   | 97   | mm    |
| Weight   | 3,200  | g     |
| Phase cable length                                 | 100  | mm    |
| Sensor cable length                                | 400  | mm    |
| Protection class                                   | IP54   |       |
| Cooling  | Water cooled   |       |
| Ambient Temperature range                          | -20 to +60   | °C    |
| Max. temperature of stator (as measured by sensor) | +100   | °C    |
| Position sensor types                              | Hall effect sensor with UVW-commutation signals  |       |
| Temperature sensor                                 | NTC 47 kΩ  |       |
| Number of poles                                    | 30   |       |
| Number of windings                                 | 6  |       |
| Recommendations for water cooling                  | Flow of 7 liters-per-minute at max. 40°C inlet temp.; coolant pressure shall not exceed 2 bar/ 29 PSI. |       |

### Complementary Products

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

#### Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-50-B8 P30 LW

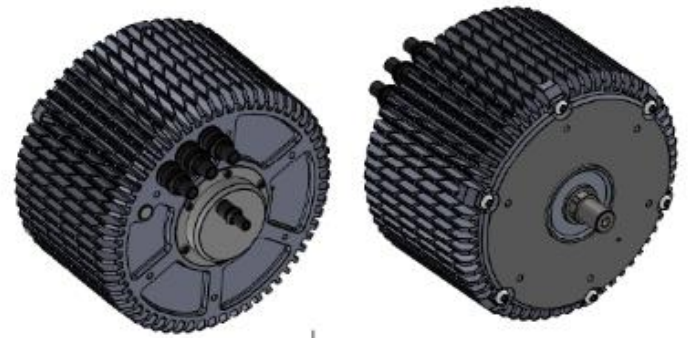
Inrunner BLDC motor with closed housing

### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

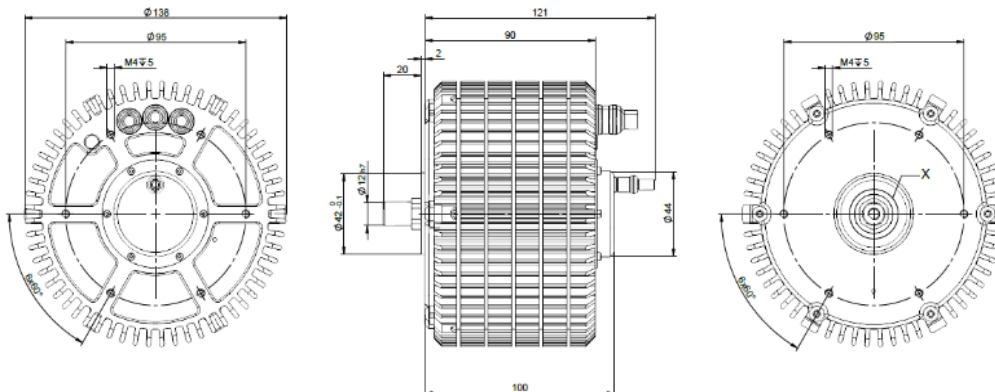
|  |   |       |
|--|---|-------|
| Peak output power                                  | 15  | kW    |
| Peak torque <sup>1</sup>                           | 40  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 30-160  | V     |
| Speed constant (kV)                                | 48  | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 90  | mm    |
| Weight   | 2,800   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-50-B8 P30 WK

Inrunner BLDC motor with closed housing

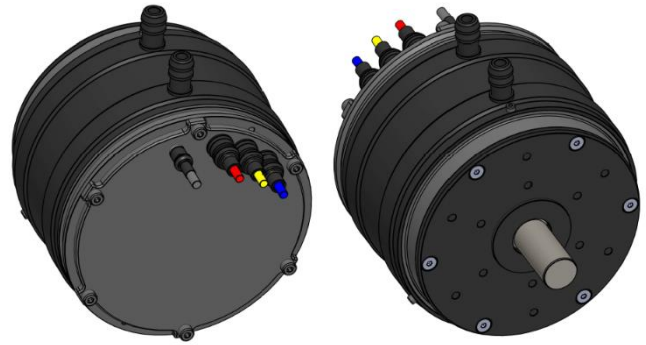


### Overview

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

### Features

- Super robust housing for mission critical applications
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard



### Specifications

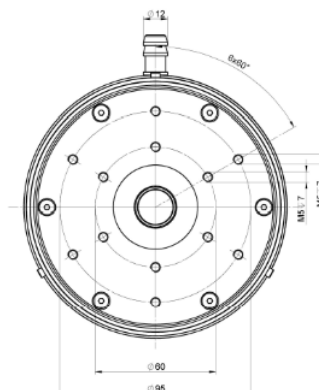
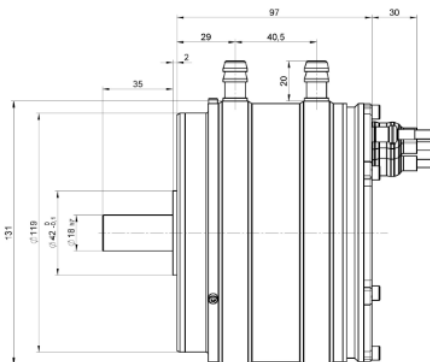
|  |  |       |
|--|--|-------|
| Peak output power                                  | 15   | kW    |
| Peak torque <sup>1</sup>                           | 40   | Nm    |
| Max. speed   | 8,000  | rpm   |
| Voltage range                                      | 30-160   | V     |
| Speed constant (kV)                                | 48   | rpm/V |
| Diameter (ex. water inlet)                         | 131  | mm    |
| Length   | 97   | mm    |
| Weight   | 3,200  | g     |
| Phase cable length                                 | 100  | mm    |
| Sensor cable length                                | 400  | mm    |
| Protection class                                   | IP54   |       |
| Cooling  | Water cooled   |       |
| Ambient Temperature range                          | -20 to +60   | °C    |
| Max. temperature of stator (as measured by sensor) | +100   | °C    |
| Position sensor types                              | Hall effect sensor with UVW-commutation signals  |       |
| Temperature sensor                                 | NTC 47 kΩ  |       |
| Number of poles                                    | 30   |       |
| Number of windings                                 | 8  |       |
| Recommendations for water cooling                  | Flow of 7 liters-per-minute at max. 40°C inlet temp.; coolant pressure shall not exceed 2 bar/ 29 PSI. |       |

### Complementary Products

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

#### Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-70-A2 P30 LW

Inrunner BLDC motor with closed housing

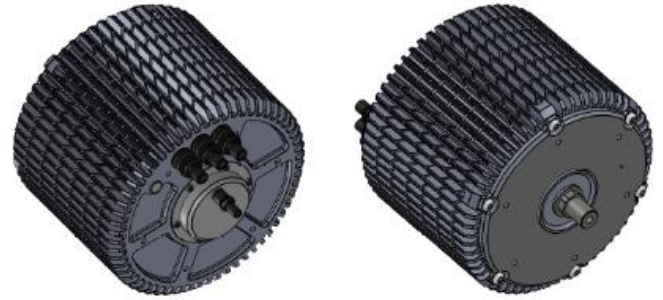


### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

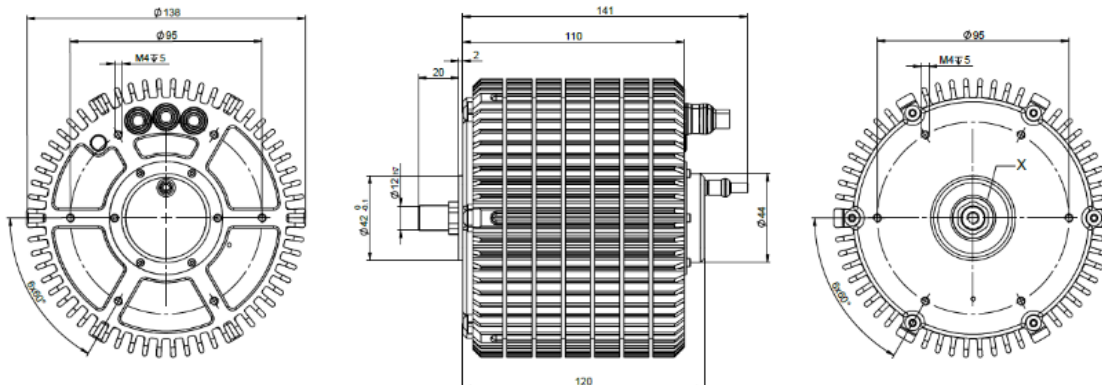
|  |   |       |
|--|---|-------|
| Peak output power                                  | 20  | kW    |
| Peak torque <sup>1</sup>                           | 55  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 30-100  | V     |
| Speed constant (kV)                                | 85  | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 110   | mm    |
| Weight   | 3,600   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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## NOVA Series

# NOVA 15-70-B6 P30 LW

Inrunner BLDC motor with closed housing



### Overview

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

### Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



### Specifications

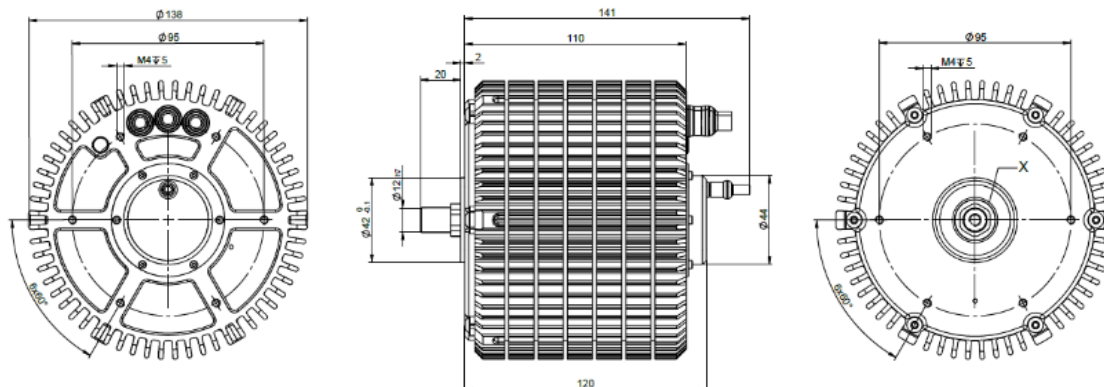
|  |   |       |
|--|---|-------|
| Peak output power                                  | 20  | kW    |
| Peak torque <sup>1</sup>                           | 55  | Nm    |
| Max. speed   | 8,000   | rpm   |
| Voltage range                                      | 40-160  | V     |
| Speed constant (kV)                                | 49  | rpm/V |
| Diameter   | 138   | mm    |
| Length   | 110   | mm    |
| Weight   | 3,600   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP54  |       |
| 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                        |       |

### Complementary Products

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

Notes:

<sup>1</sup> With sensor-guided ESC



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# NOVA 30-50-B4 P50

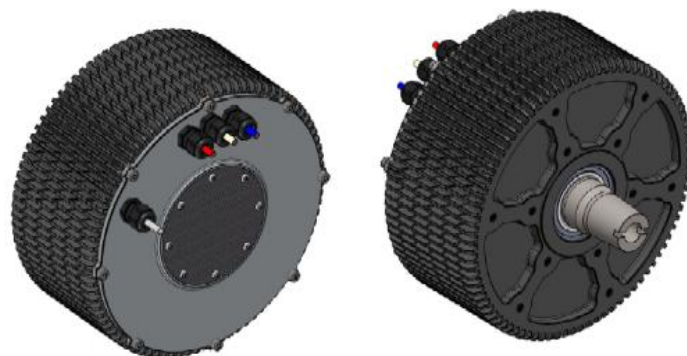
Inrunner BLDC motor with closed housing

## Overview

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

## Features

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



## Specifications

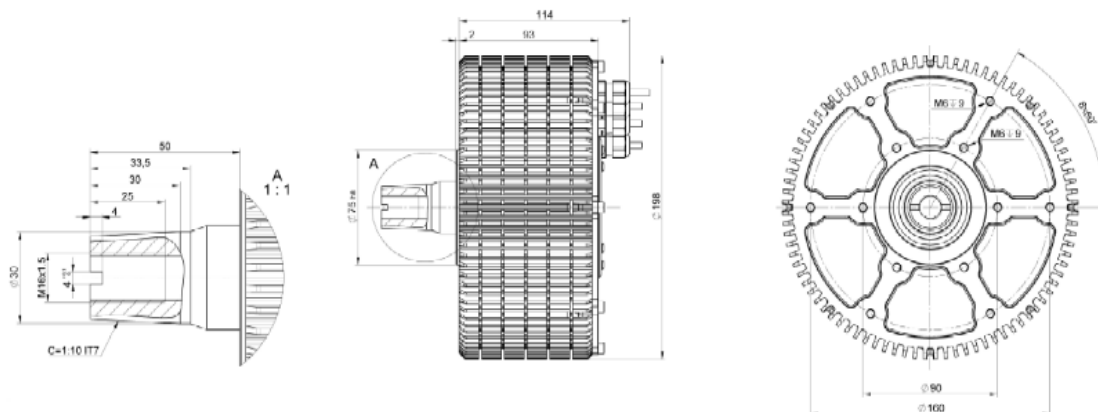
|  |   |       |
|--|---|-------|
| Peak output power                                  | 30  | kW    |
| Peak torque <sup>1</sup>                           | 80  | Nm    |
| Max. speed   | 5,000   | rpm   |
| Voltage range                                      | 30-120  | V     |
| Speed constant (kV)                                | 37  | rpm/V |
| Diameter   | 198   | mm    |
| Length   | 93  | mm    |
| Weight   | 6,200   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP53  |       |
| 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                         |       |

## Complementary Products

- Plettenberg ESCs: MST 140-200, MST 140-250 WK
- Plettenberg gold connectors: GC6-00 / GC6-90

Notes:

<sup>1</sup> With sensor-guided ESC



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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 the most demanding applications.

### Features

- Super robust housing for mission critical applications
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard



### Specifications

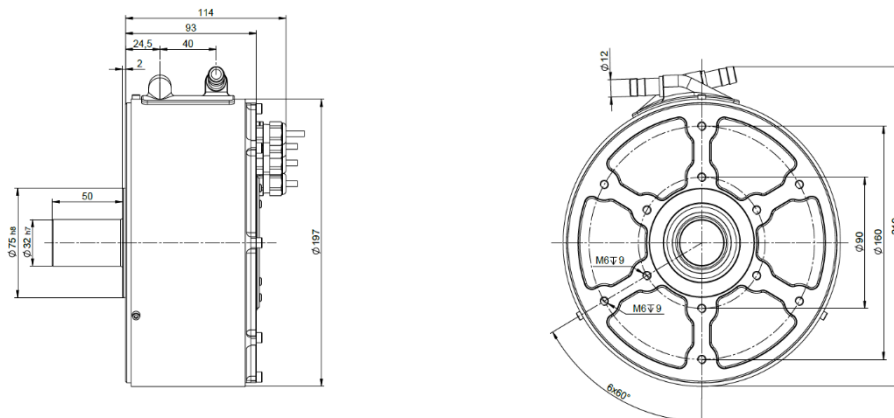
|  |  |       |
|--|--|-------|
| Peak output power                                  | 30   | kW    |
| Peak torque <sup>1</sup>                           | 80   | Nm    |
| Max. speed   | 5,000  | rpm   |
| Voltage range                                      | 30-120   | V     |
| Speed constant (kV)                                | 37   | rpm/V |
| Diameter (ex. water inlet)                         | 197  | mm    |
| Length   | 93   | mm    |
| Weight   | 6,300  | g     |
| Phase cable length                                 | 100  | mm    |
| Sensor cable length                                | 400  | mm    |
| Protection class                                   | IP53   |       |
| 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
- Plettenberg gold connectors: GC6-00 / GC6-90

#### Notes:

<sup>1</sup> With sensor-guided ESC



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**NOVA Series**

**NOVA 30-50-B10 P50**

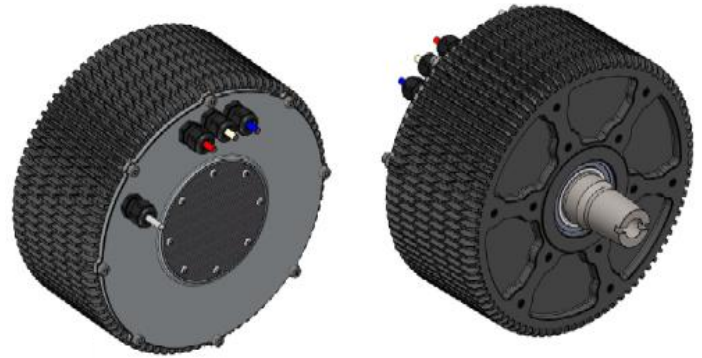
Inrunner BLDC motor with closed housing

**Overview**

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

**Features**

- Super robust housing for mission critical applications in the harshest environments
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard
- Optimized shaft for Plettenberg propeller coupling



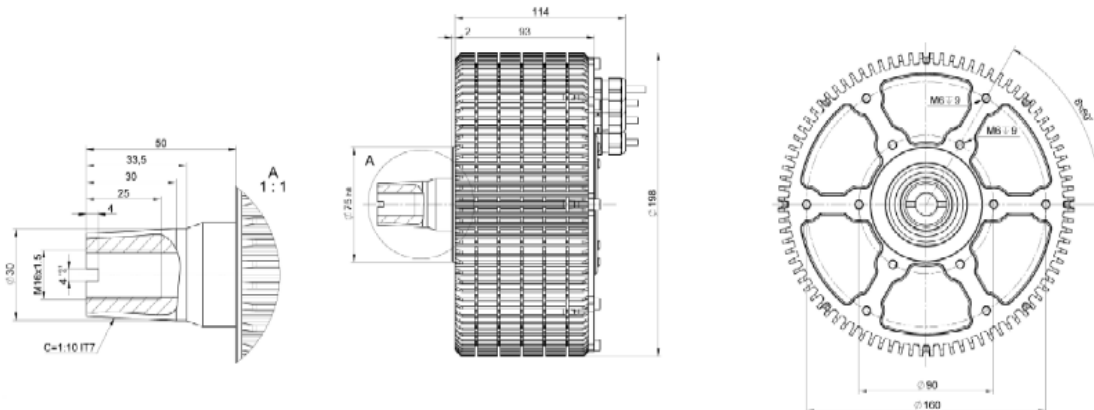
**Specifications**

|  |   |       |
|--|---|-------|
| Peak output power                                  | 30  | kW    |
| Peak torque <sup>1</sup>                           | 80  | Nm    |
| Max. speed   | 5,000   | rpm   |
| Voltage range                                      | 80-320  | V     |
| Speed constant (kV)                                | 15  | rpm/V |
| Diameter   | 198   | mm    |
| Length   | 93  | mm    |
| Weight   | 6,200   | g     |
| Phase cable length                                 | 100   | mm    |
| Sensor cable length                                | 400   | mm    |
| Protection class                                   | IP53  |       |
| 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                         |       |

**Complementary Products**

- Plettenberg ESCs: MST 140-200, MST 140-250 WK, MST 400-200 WK, MST 400-133
- Plettenberg gold connectors: GC6-00 / GC6-90

Notes:  
<sup>1</sup> With sensor-guided ESC



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## NOVA Series



# 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 the most demanding applications.

### Features

- Super robust housing for mission critical applications
- Best power-to-weight-to-robustness ratio in its class
- Position and temperature sensors included in standard



### Specifications

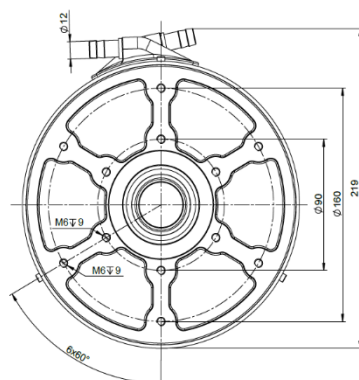
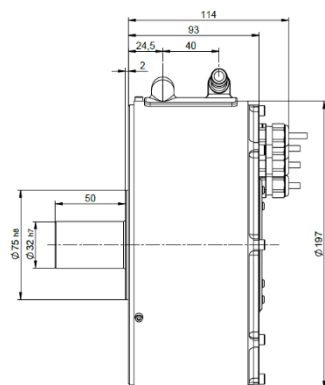
|  |  |       |
|--|--|-------|
| Peak output power                                  | 30   | kW    |
| Peak torque <sup>1</sup>                           | 80   | Nm    |
| Max. speed   | 5,000  | rpm   |
| Voltage range                                      | 80-320   | V     |
| Speed constant (kV)                                | 15   | rpm/V |
| Diameter (ex. water inlet)                         | 197  | mm    |
| Length   | 93   | mm    |
| Weight   | 6,300  | g     |
| Phase cable length                                 | 100  | mm    |
| Sensor cable length                                | 400  | mm    |
| Protection class                                   | IP53   |       |
| 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. |       |

### Complementary Products

- Plettenberg ESCs: MST 140-200, MST 140-250 WK, MST 400-200 WK, MST 400-133
- Plettenberg gold connectors: GC6-00 / GC6-90

#### Notes:

<sup>1</sup> With sensor-guided ESC



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# ORBIT SERIES

Outrunner BLDC motors

## ORBIT Series

# ORBIT 15-30-B6 P20

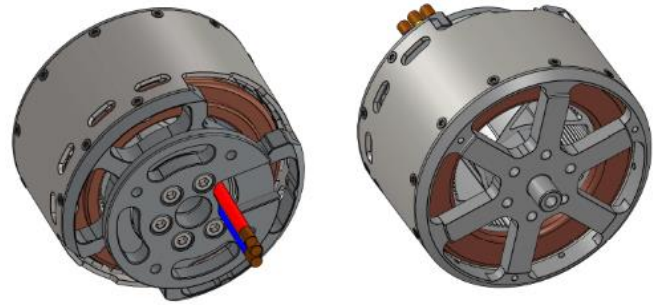
Outrunner BLDC motor

### Overview

The ORBIT 15 is from our family of weight optimized 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

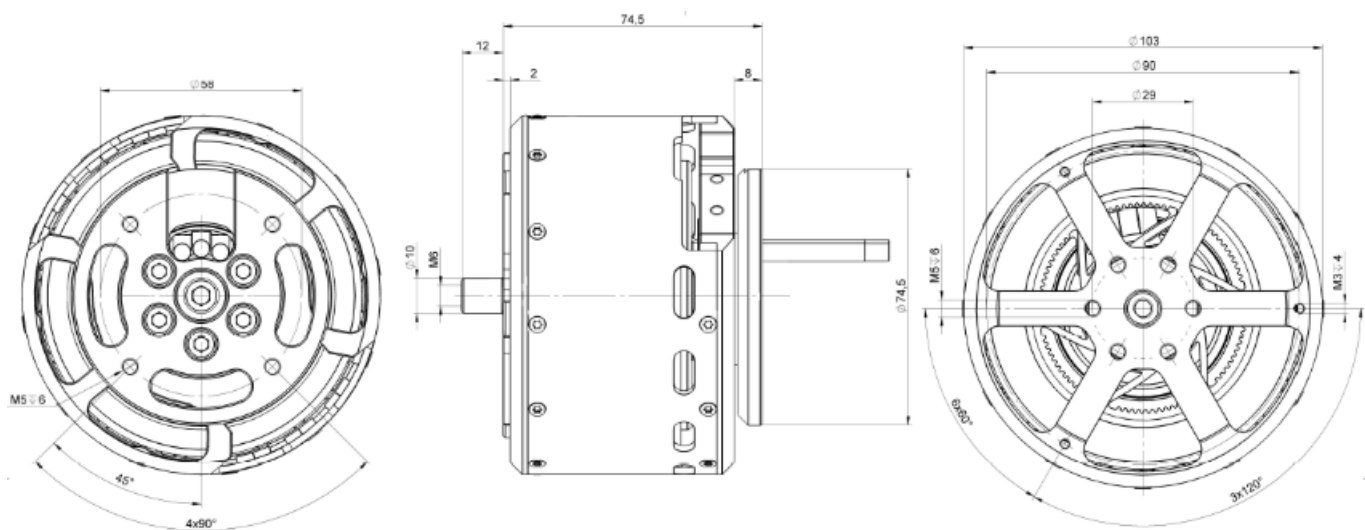


### Specifications

|                           |                          |       |
|---------------------------|--------------------------|-------|
| Peak output power         | 9                        | kW    |
| Peak torque <sup>1</sup>  | 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                    | 1,550                    | g     |
| Phase cable length        | 100                      | mm    |
| 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)



## ORBIT Series

# ORBIT 15-30-B8 P20

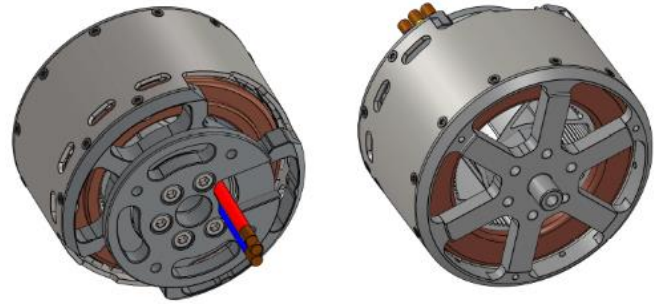
Outrunner BLDC motor

### 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

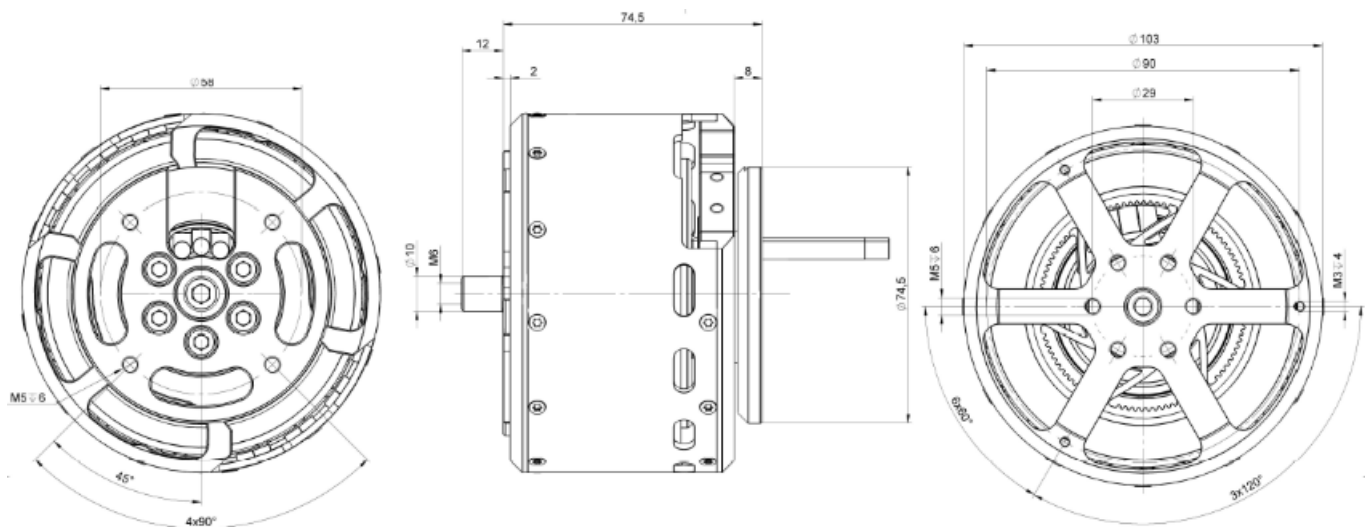


### Specifications

|                           |                          |       |
|---------------------------|--------------------------|-------|
| Peak output power         | 9                        | kW    |
| Peak torque <sup>1</sup>  | 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                    | 1,550                    | g     |
| Phase cable length        | 100                      | mm    |
| 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)



## ORBIT Series

# ORBIT 15-37-B6 P20

Outrunner BLDC motor

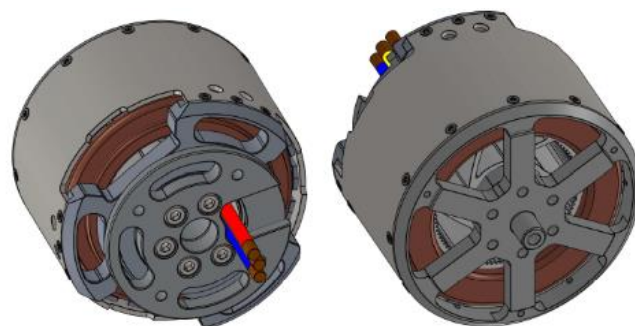


### Overview

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

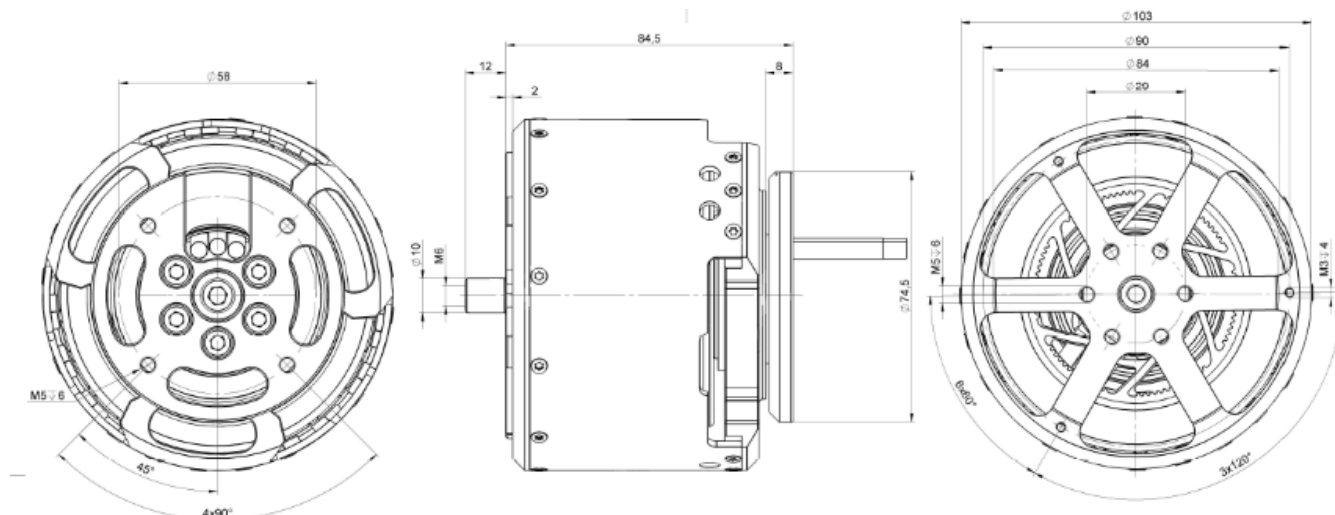


### Specifications

|                           |                        |       |
|---------------------------|------------------------|-------|
| Peak output power         | 11                     | kW    |
| Peak torque <sup>1</sup>  | 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    |
| Cooling                   | Air cooled             |       |
| 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)



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## ORBIT Series

# ORBIT 15-37-B8 P20

Outrunner BLDC motor

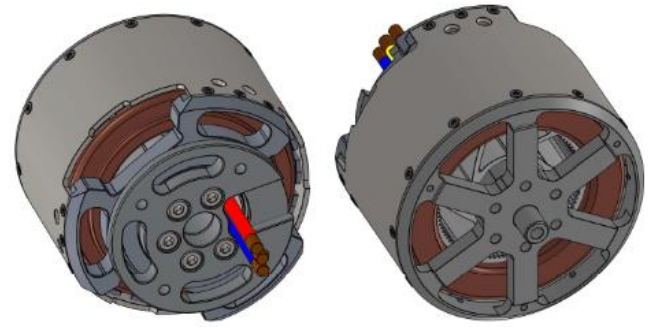


### Overview

The ORBIT 15 is from our family of weight optimized 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

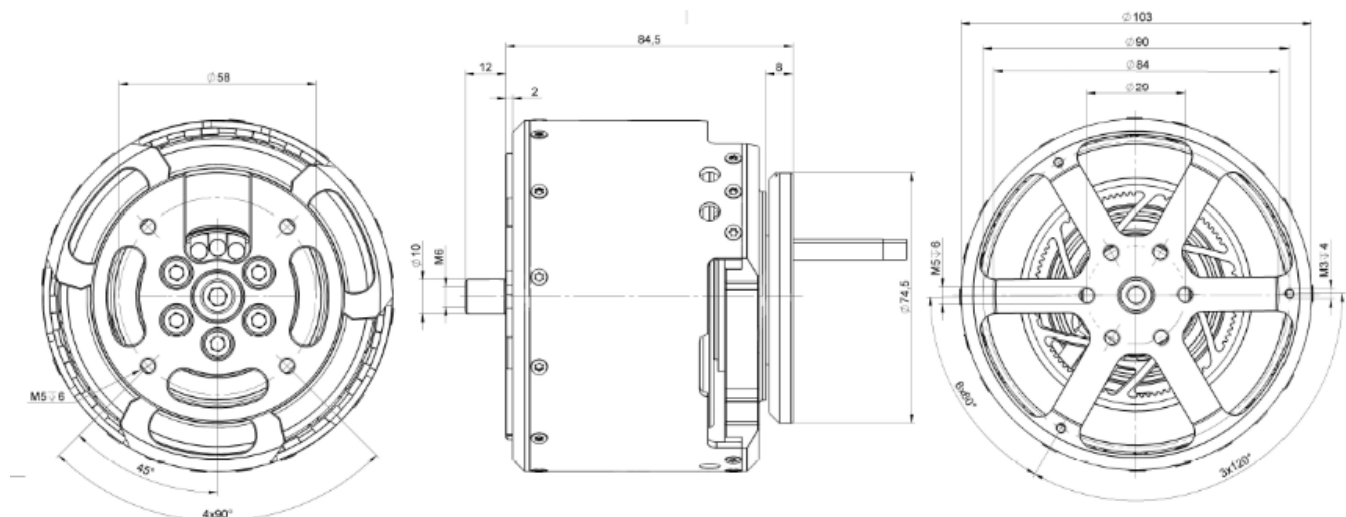


### Specifications

|                           |                        |       |
|---------------------------|------------------------|-------|
| Peak output power         | 11                     | kW    |
| Peak torque <sup>1</sup>  | 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    |
| 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)



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## COMPANY OVERVIEW

Plettenberg is a leading designer, developer and manufacturer of electric motors and ESCs for high-end drive solutions. Our product range includes COTS, MOTS and fully customized solutions, including inrunner and outrunner BLDC motors, brushed DC motors, ESCs, starter generators as well as mission critical accessories. We provide engineering and application integration service to our customers in order to help them in designing the perfect motors and ESCs for their particular use purpose. We serve customers from end-markets such as aerospace and defense, industrial tools, robotic and automation, medical equipment, racing/sports. Plettenberg has a quality system which is ISO 9001 certified and manufactures 100% of its products at its HQ in Baunatal, Germany.

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