

EMFi BLDC HUB MOTOR

Technical Data Sheets

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10 Inch Hub Motor



TEST REPORT

Test Report No.	02 8271
Date	31.07.2020
Page No.	1 of 5
Location of Testing	SCIENTIFIC AND INDUSTRIAL TESTING AND RESEARCH CENTRE (Si'Tarc) 83 & 84, Avarampalayam Road, K R Puram Post COIMBATORE – 641 006.
Service Requested By	EMF Innovations Pvt Ltd, 2/209 to 2/212, Shasti Buildings, Rajiv Gandhi Nagar, Mylampatti Village, Coimbatore -641 062.
Customer Doc. Ref. No. & Date	EMF/Fac/2020-21/053, 23.07.2020
Item Description	10"/(36V-72V)/(0-1500W)-BLDC HUB MOTOR
Sample Identification Details Grade/Variety/Type/Size/Class. Batch No./Date of Manufacturing	-
Item Received on	23.07.2020
Seal/Signature	-
Si'Tarc Invoice No. & Date	Invoice No. 689/20-21 dated 31.07.2020 M/s EMF Innovations Pvt Ltd, 2/209 to 2/212, Shasti Buildings, Rajiv Gandhi Nagar, Mylampatti Village, Coimbatore -641 062.
Any Other Information	As per IS/IEC 60034-5:2000

Issued By


R. MARIVEL RAJA
Junior Executive



Authorised By


A M SELVARAJ
Joint Director

- Note : This Report is Subjected to the Terms and Conditions Mentioned Overleaf.
- Recognised by Department of Scientific and Industrial Research (DSIR), Bureau of Indian Standards (BIS), Bureau of Energy Efficiency (BEE) and Ministry of New and Renewable Energy (MNRE) Govt of India, New Delhi
- ISO/IEC 17025 Accredited Laboratory by National Accreditation Board for Testing and Calibration (NABL), New Delhi in the Testing Field of Chemical, Electrical Mechanical & Biological and in the Calibration Field of Electro Technical, Mechanical & Thermal.

SLFCC011 / 01.05 / 03.20

**SCIENTIFIC AND INDUSTRIAL
TESTING AND RESEARCH CENTRE
TESTING LABORATORY**

TEST REPORT No. : 02 8271

PAGE No. : Page 2 of 5

**TEST REPORT FOR DEGREES OF PROTECTION PROVIDED BY THE
INTEGRAL DESIGN OF ROTATING ELECTRICAL MACHINES (IP CODE)**

(As per IS/IEC 60034-5: 2000)

1.0. Description of the Sample

Name of the Test item	10" / (36V-72V) / (0 – 1500W) – BLDC HUB MOTOR		
Protection Code	IP 54	Rated Output	---
Serial No.	---	Voltage	60 V DC

Test Data Details:

10" / (36V-72V) / (0 – 1500W) – BLDC HUB MOTOR, Input voltage-60 VDC, emf innovations pvt ltd.

2.0 Supplementary information

2.1	Test Method	IS / IEC 60034-5 : 2000 Rev. 2		
2.2	Above sample as received in physically satisfactory condition.			
2.3	Only the tests requested by the customer have been carried out.			
2.4	The specified ambient conditions were maintained during the test.			
2.5	The tests declared in the Sl. No (--) were /were sub contracted according to the established procedure of this laboratory.			
2.6	Reference to the sampling procedure, wherever applicable.			NIL
2.7	Supporting documents for the measurements taken and results derived like graphs, tables, sketches and photographs as appropriate to test report, if any (to be attached).			For photographs, refer page no. 5 of 5.
2.8	Deviations from test methods are prescribed in relevant ISS / Work instruction if any.			NIL
2.9	Measurement of uncertainty of test equipment is considered while testing.			
2.10	Under the test results the following indication (PASS, FAIL, N/A, "----") is marked against suitably.			
	Test item does meet the requirement	PASS	Test item does not meet the requirement	FAIL
	No Pass / Fail Decision Taken	"----"	Test case does not apply to the test object	N/A

Tested by

P. SURESHKUMAR



Authorized by

A.M. SELVARAJ

SLFEL062/01.00/02.20

83&84, AVARAMPALAYAM ROAD, K.R. PURAM P.O., COIMBATORE - 641 006. © : 91-0422 - 2560473 & 4273612

: 94875 80473 E-Mail : sitarcinfo@sitarc.com, Website : www.sitarc.com

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TEST REPORT No. : 02 8271

PAGE No. : Page 3 of 5

Test Started on: 24/07/2020

Test Completed on: 28/07/2020

3.0 TEST DETAILS

Sl.No.	Name of the test	Test As Per
3.1.	Marking	CI 6 of IS/IEC 60034-5
3.2.	Test for First characteristic numeral 5	CI 8 of IS/IEC 60034-5
3.3.	Test for Second characteristic numeral 4	CI 9 of IS/IEC 60034-5

4.0 TEST RESULTS

Sl. No.	Name of the test, Clause No. Parameter	Standard / Specified requirements	Observed values / Result	Remarks
4.1.	Degrees Of Protection Provided By The Integral Design Of Rotating Electrical Machines			
4.1.1.	Marking : CI 6 of IS/IEC: 60034-5:2000	The characteristic letters and numerals be marked on the rating plate, or if this is not practicable, on the enclosure	The protection of IP 54 code is not marked on the enclosure (no rating plate is found) of the machine and it is specified in the test call sheet only.	---
4.1.2.	<u>Test for first characteristic numeral 5:</u> Table 2, Table 4, CI 8 of IS/IEC: 60034-5: 2000	<u>1. DUST TEST:-</u> The talcum powder shall not accumulate in a quantity or location such that, as with any kind of ordinary dust. The dust could not interfere with the correct operation of the machine. (Test and acceptance conditions as per Table 4 of IS/IEC 60034-5: 2000 Second Revision)	On inspection, the talcum powder has not entered inside the machine. The electrical function of the sample is found satisfactory.	PASS
4.1.3.	<u>Test for second characteristic numeral 4:</u>	<u>2.0 MACHINE PROTECTED AGAINST SPLASHING WATER:-</u> Water splashing against	1.0 Water particles have	PASS

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A.M. SELVARAJ

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83&84, AVARAMPALAYAM ROAD, T.B. AVARAM P.O., COIMBATORE - 641 006. ☎ : 91-0422 - 2560473 & 4273612

¶ : 94875 80473 E-Mail : sitarcinfo@sitarc.com, Website : www.sitarc.com

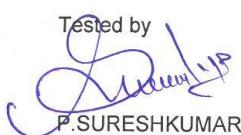
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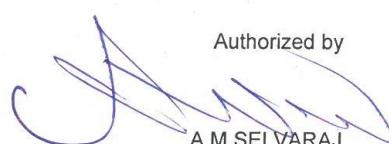
TEST REPORT No. : 02 8271

PAGE No. : Page 4 of 5

Sl. No.	Name of the test, Clause No. Parameter	Standard / Specified requirements	Observed values / Result	Remarks
	Cl. 5, Table 3, Cl. 9, Table 5 of IS/IEC 60034-5 : 2000 Acceptance Conditions as per Cl. 9.2	<p>the machine from any direction shall have no harmful effect.</p> <p>The test conditions are as per the table 5 of IS/IEC 60034-5:2000</p> <p>The acceptance conditions are as per the Cl 9.2 of IS / IEC 60034-5:2000.</p> <p>After the test, run the machine under no-load conditions at rated voltage for 15 minutes.</p> <p>HIGH VOLTAGE TEST:</p> <p>Then the sample should withstand the test voltage being 50% of the test voltage for a new machine (high voltage) but not less than 125% of the rated voltage.</p>	<p>not entered inside the machine.</p> <p>2.0 Insulation Resistance Test:- Before High Voltage Test:- Insulation resistance at 500 V DC = $>20 \text{ G}\Omega$ After High Voltage Test:- Insulation resistance at 500 V DC = $>20 \text{ G}\Omega$</p> <p>3.0 High Voltage Test: 310 V applied for 60 Seconds between windings and frame of the motor. The protection is satisfactory.</p> <p>4.0 No Load Test at Rated Voltage Condition: No load running-up test at rated voltage for 15 minutes is conducted. The electrical function of the machine is found satisfactory.</p>	PASS

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TEST REPORT No. : 02 8271
5.0. Photographs:-

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Fig.1



Fig.2

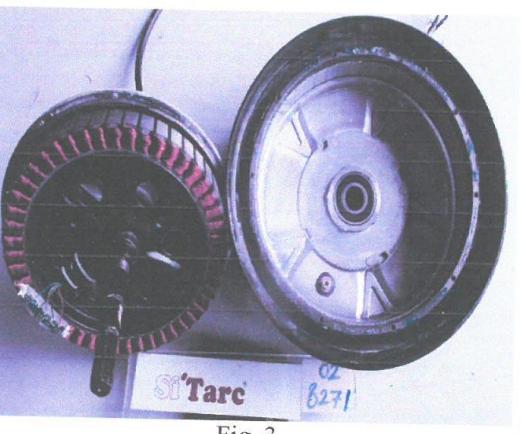


Fig. 3



Fig. 4

--- End of the Report ---

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P. SURESHKUMAR

SLEEL 02/01.00/02.00
SLEEL 02/01.00/02.00



Authorized by

A.M. SELVARAJ

12 Inch Hub Motor



TEST REPORT

Test Report No.	: 02 8272
Date	: 31.07.2020
Page No.	: 1 of 5
Location of Testing	: SCIENTIFIC AND INDUSTRIAL TESTING AND RESEARCH CENTRE (Si'Tarc) 83 & 84, Avarampalayam Road, K R Puram Post COIMBATORE – 641 006.
Service Requested By	: EMF Innovations Pvt Ltd, 2/209 to 2/212, Shasti Buildings, Rajiv Gandhi Nagar, Mylampatti Village, Coimbatore -641 062.
Customer Doc. Ref. No. & Date	: EMF/Fac/2020-21/053, 23.07.2020
Item Description	: 12"/(36V-72V)/(0-1500W)-BLDC HUB MOTOR
Sample Identification Details Grade/Variety/Type/Size/Class. Batch No./Date of Manufacturing	: -
Item Received on	: 23.07.2020
Seal/Signature	: -
Si'Tarc Invoice No. & Date	: Invoice No. 689/20-21 dated 31.07.2020 M/s EMF Innovations Pvt Ltd, 2/209 to 2/212, Shasti Buildings, Rajiv Gandhi Nagar, Mylampatti Village, Coimbatore -641 062.
Any Other Information	: As per IS/IEC 60034-5:2000

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TEST REPORT No. : 02 8272

PAGE No. : Page 2 of 5

**TEST REPORT FOR DEGREES OF PROTECTION PROVIDED BY THE
INTEGRAL DESIGN OF ROTATING ELECTRICAL MACHINES (IP CODE)**

(As per IS/IEC 60034-5: 2000)

1.0. Description of the Sample

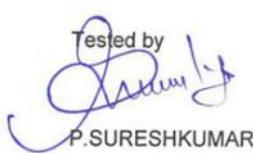
Name of the Test item	12" / (36V-72V) / (0 – 1500W) – BLDC HUB MOTOR		
Protection Code	IP 54	Rated Output	---
Serial No.	---	Voltage	60 V DC

Test Data Details:

12" / (36V-72V) / (0 – 1500W) – BLDC HUB MOTOR, Input voltage-60 VDC, emf innovations pvt ltd.

2.0 Supplementary information

2.1	Test Method	IS / IEC 60034-5 : 2000 Rev. 2				
2.2	Above sample as received in physically satisfactory condition.					
2.3	Only the tests requested by the customer have been carried out.					
2.4	The specified ambient conditions were maintained during the test.					
2.5	The tests declared in the SI. No (--) were /were sub contracted according to the established procedure of this laboratory.					
2.6	Reference to the sampling procedure, wherever applicable.		NIL			
2.7	Supporting documents for the measurements taken and results derived like graphs, tables, sketches and photographs as appropriate to test report, if any (to be attached).		For photographs, refer page no. 5 of 5.			
2.8	Deviations from test methods are prescribed in relevant ISS / Work instruction if any.		NIL			
2.9	Measurement of uncertainty of test equipment is considered while testing.					
2.10	Under the test results the following indication (PASS, FAIL, N/A, "----") is marked against suitably.					
	Test item does meet the requirement	PASS	Test item does not meet the requirement	FAIL		
	No Pass / Fail Decision Taken	"---"	Test case does not apply to the test object	N/A		

Tested by

 P. SURESHKUMAR



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 A.M. SELVARAJ

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TEST REPORT No. : 02 8272

PAGE No. : Page 3 of 5

Test Started on: 24/07/2020

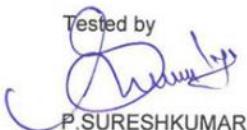
Test Completed on: 28/07/2020

3.0 TEST DETAILS

Sl.No.	Name of the test	Test As Per
3.1.	Marking	Cl 6 of IS/IEC 60034-5
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Tested by

P. SURESHKUMAR



Authorized by

A.M.SELVARAJ

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83&84, AVARAMPALAYAM ROAD, K.R. PURAM P.O., COIMBATORE - 641 006. O : 91-0422 - 2560473 & 4273612

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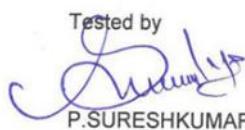
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TEST REPORT No. : 02 8272

PAGE No. : Page 4 of 5

Sl. No.	Name of the test, Clause No. Parameter	Standard / Specified requirements	Observed values / Result	Remarks
4.1.3.	<p><u>Test for second characteristic numeral 4:</u></p> <p>Cl. 5, Table 3, Cl. 9, Table 5 of IS/IEC 60034-5 : 2000</p> <p><u>Acceptance Conditions as per Cl. 9.2</u></p>	<p>2.0 MACHINE PROTECTED AGAINST SPLASHING WATER:-</p> <p>Water splashing against the machine from any direction shall have no harmful effect.</p> <p>The test conditions are as per the table 5 of IS/IEC 60034-5:2000</p> <p>The acceptance conditions are as per the Cl 9.2 of IS / IEC 60034-5:2000.</p> <p>After the test, run the machine under no-load conditions at rated voltage for 15 minutes.</p> <p>HIGH VOLTAGE TEST:</p> <p>Then the sample should withstand the test voltage being 50% of the test voltage for a new machine (high voltage) but not less than 125% of the rated voltage.</p>	<p>1.0 Water particles have not entered inside the machine.</p> <p>2.0 Insulation Resistance Test:-</p> <p>Before High Voltage Test:- Insulation resistance at 500 V DC = >20 GΩ</p> <p>After High Voltage Test:- Insulation resistance at 500 V DC = >20 GΩ</p> <p>3.0 High Voltage Test:</p> <p>310 V applied for 60 Seconds between windings and frame of the motor.</p> <p>The protection is satisfactory.</p> <p>4.0 No Load Test at Rated Voltage Condition:</p> <p>No load running-up test at rated voltage for 15 minutes is conducted.</p> <p>The electrical function of the machine is found satisfactory.</p>	PASS PASS

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TEST REPORT No. : 02 8272
5.0. Photographs:-

PAGE No. : Page 5 of 5



Fig.1

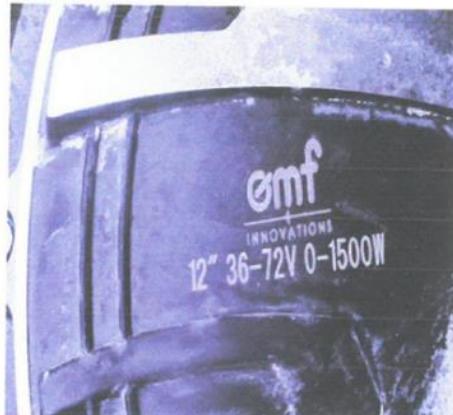


Fig.2



Fig. 3



Fig. 4

--- End of the Report ---

Tested by

P. SURESHKUMAR



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83&84, AVARAMPALAYAM ROAD, K.R. PURAM P.O., COIMBATORE - 641 006. ☎ : 91-0422 - 2560473 & 4273612
Fax : 94875 80473 E-Mail : sitarcinfo@sitarc.com, Website : www.sitarc.com

Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

Our drive can be installed in the front or rear wheel and the shaft can be modified to the design needs of the customer for specific application needs. This lowers manufacturing costs and gives our customers the highest possible flexibility in product design. Our warranty options also deliver after sales services and enable overall customer satisfaction.

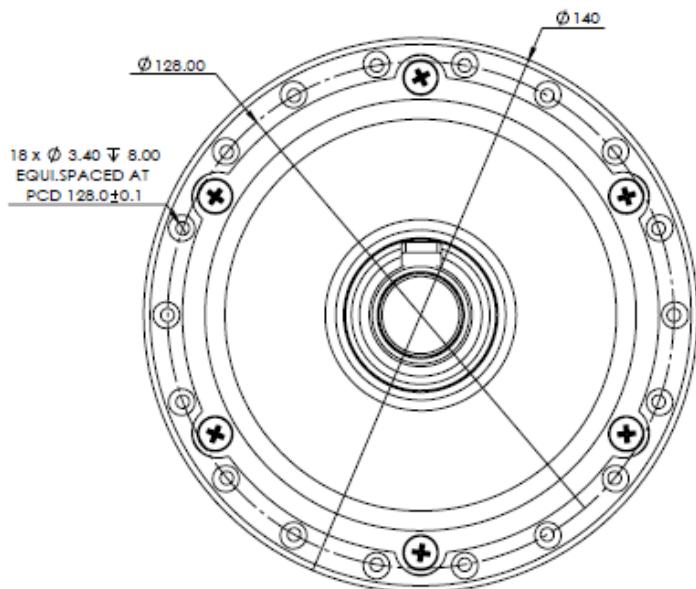
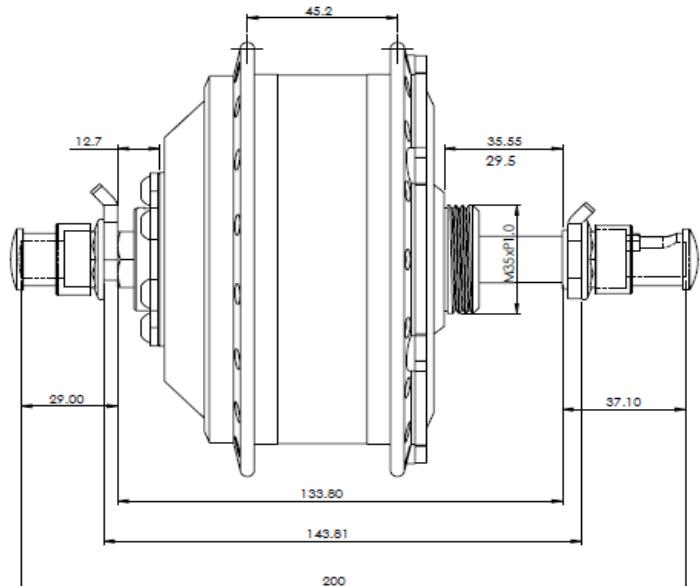
Product Features

- Rear wheel drive
 - Low speed Motors support up to 25 km/h*
 - Nominal output up to 250 W*
 - 11 Nm nominal and 50 Nm peak torque
 - Weight: 3.0 kg
 - Geared Motor
 - Smooth, controllable variable-speed operation
 - Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 140 mm

Motor Color: Diamond
Shaft Length: 200mm

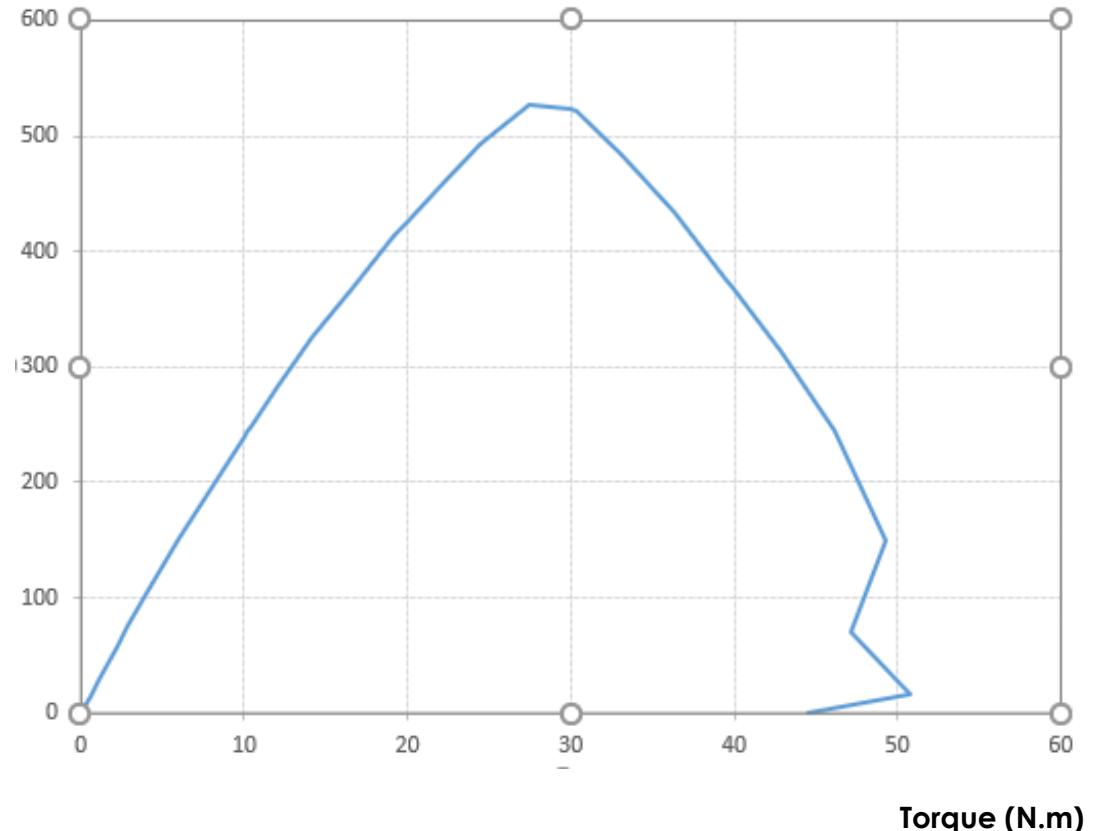
Brake Compatible: Standard cycle disc brake

Brake Components
Spokes Holes: 36

Spokes Holes PCD: 128mm

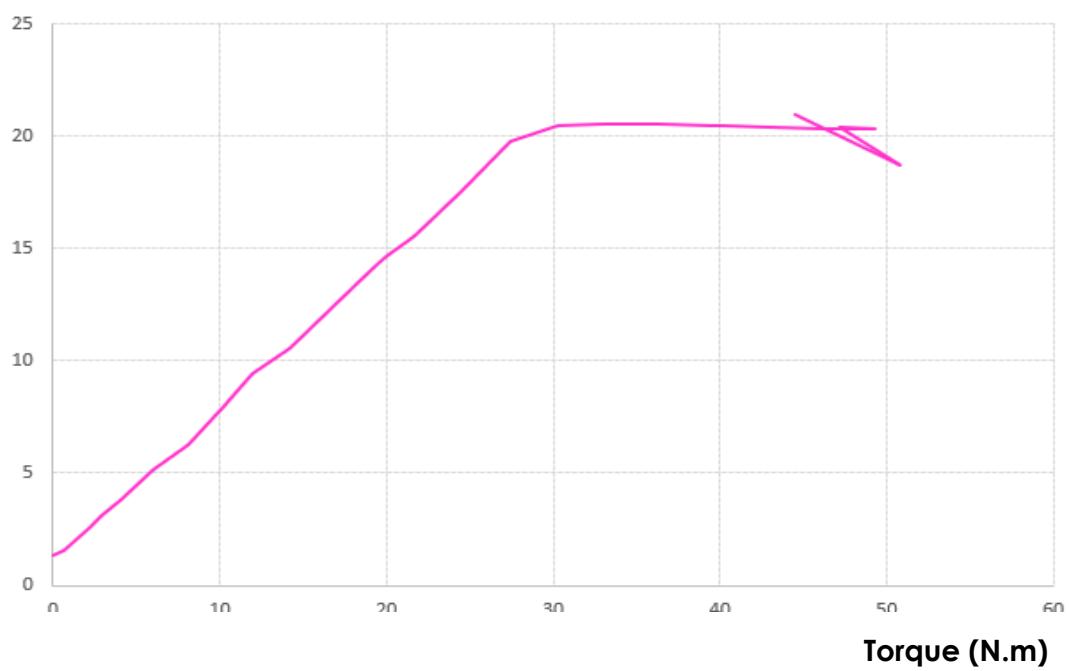
**Output Power (W)
vs Torque (N.m)**

Output Power (W)

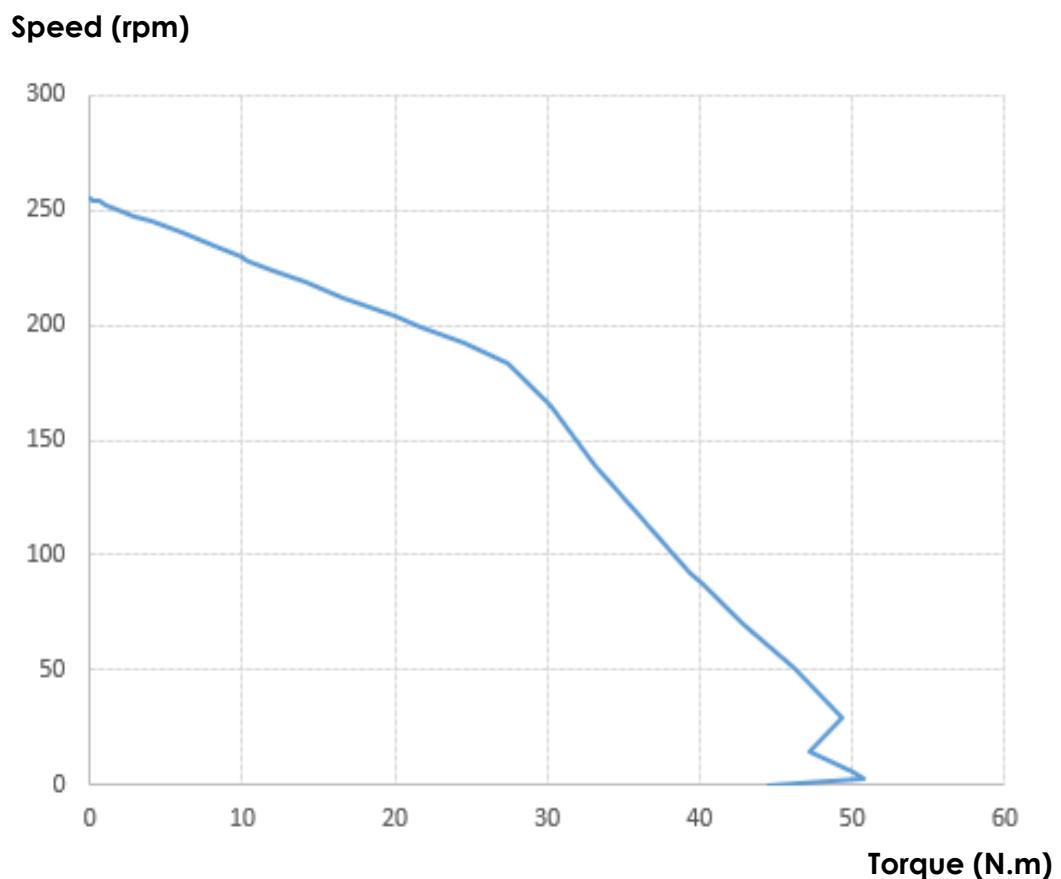


**Current (A)
vs Torque (N.m)**

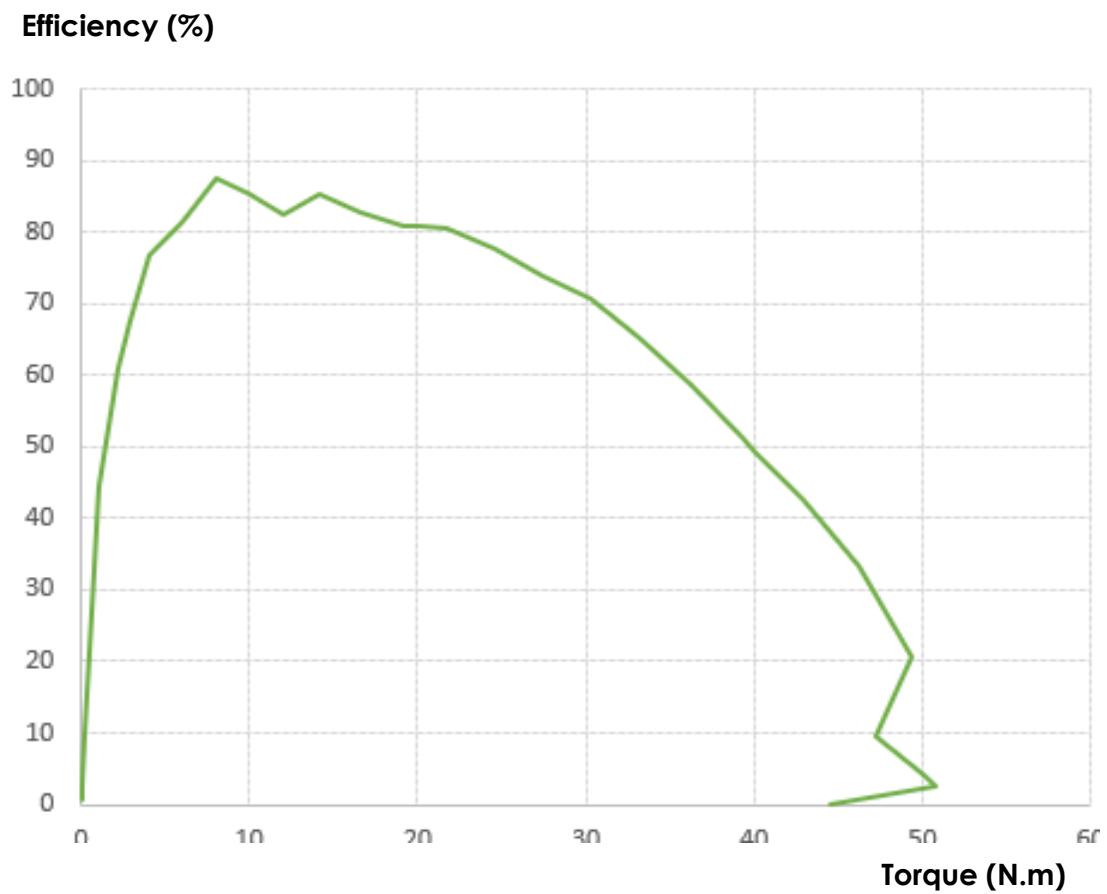
Current (A)



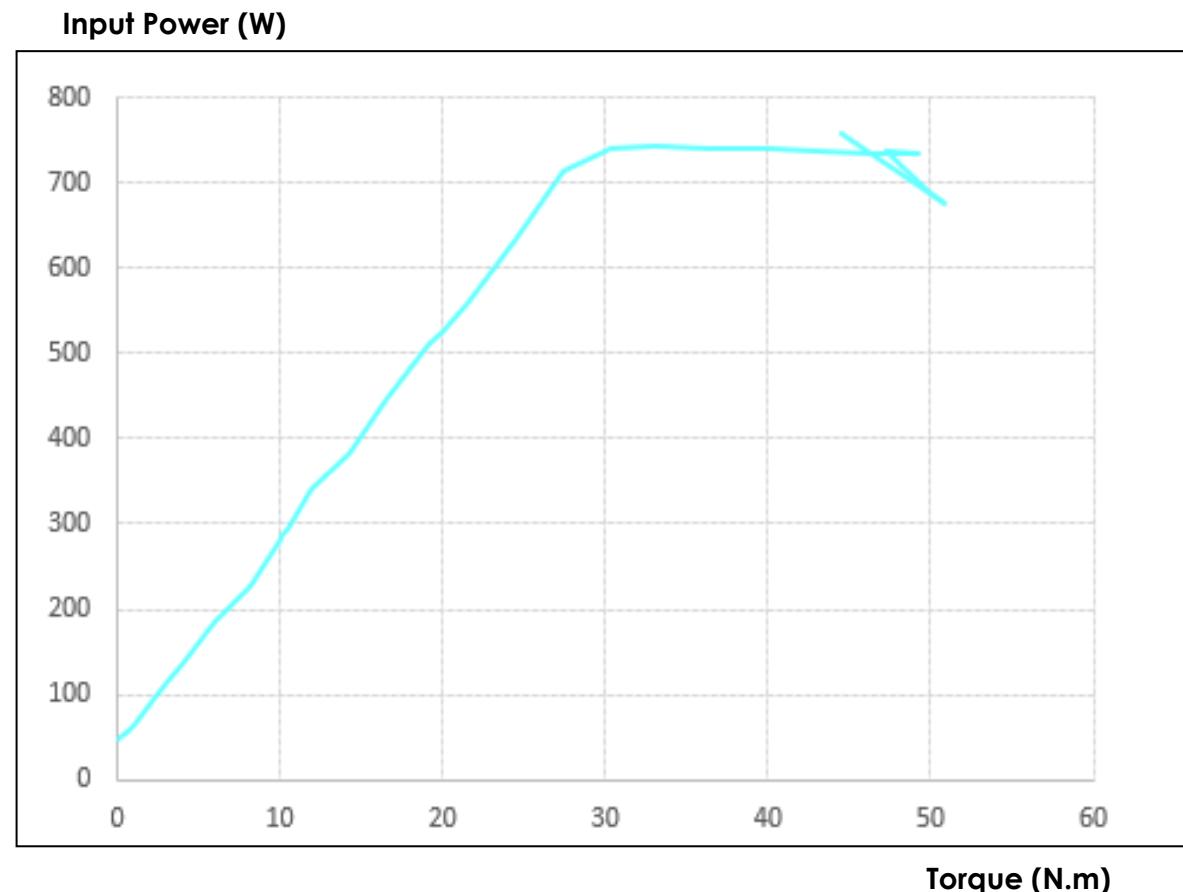
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	36.087	1.3528	48.818	0.0	255.2	0.3171	0.6	0.0000
2	36.085	1.3972	50.420	0.2	254.6	4.8594	9.6	2.3910
3	36.076	1.5400	55.556	0.6	253.7	14.888	26.8	3.1720
4	36.066	1.8446	66.527	1.1	252.3	29.458	44.3	3.9850
5	36.031	3.1301	112.78	2.9	247.7	76.140	67.5	5.5940
6	36.095	5.1171	184.70	6.0	240.0	150.41	81.4	7.1720
7	36.097	6.2679	226.25	8.1	234.8	198.15	87.6	8.0000
8	36.098	7.8029	281.67	10.0	229.4	240.25	85.3	8.7572
9	36.098	8.1840	295.43	10.5	228.1	250.00	84.7	8.9499
10	36.097	9.4495	341.10	12.0	224.0	281.73	82.6	9.5940
11	36.097	10.565	381.36	14.2	218.5	325.27	85.3	10.391
12	36.096	12.337	445.30	16.6	212.4	369.09	82.9	11.188
13	36.095	14.169	511.44	19.2	205.7	413.01	80.8	12.000
14	36.090	14.607	527.16	20.0	203.7	425.54	80.8	12.250
15	36.078	15.538	560.58	21.7	199.3	452.18	80.7	12.781
16	36.091	17.600	635.22	24.5	192.1	492.99	77.6	13.594
17	36.094	19.744	712.63	27.4	183.8	526.88	73.9	14.391
18	36.093	20.392	736.03	30.0	166.7	522.69	71.0	15.091
19	36.095	20.565	742.29	33.1	139.7	483.72	65.2	15.985
20	36.095	20.522	740.73	36.3	114.2	433.77	58.6	16.781
21	36.095	20.470	738.87	39.4	91.7	377.80	51.1	17.578
22	36.104	20.412	736.95	42.9	69.7	312.95	42.5	18.391
23	36.096	20.335	733.99	46.2	50.6	244.87	33.4	19.172
24	36.094	20.301	732.75	49.3	29.0	149.93	20.5	19.985
25	36.094	20.381	735.63	47.2	14.1	69.731	9.5	20.797
26	36.095	18.688	674.56	50.8	3.0	15.892	2.4	21.594

Specifications

Rated Power (Watts)	250
Rated Torque (N.m)	11
Peak Torque (N.m)	50
Operating Voltage (Volts)	36
Rated Current (A)	8
Peak Current (A)	21
Rated RPM	225

Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

Our drive can be installed in the front or rear wheel and the shaft can be modified to the design needs of the customer for specific application needs. This lowers manufacturing costs and gives our customers the highest possible flexibility in product design. Our warranty options also deliver after sales services and enable overall customer satisfaction.

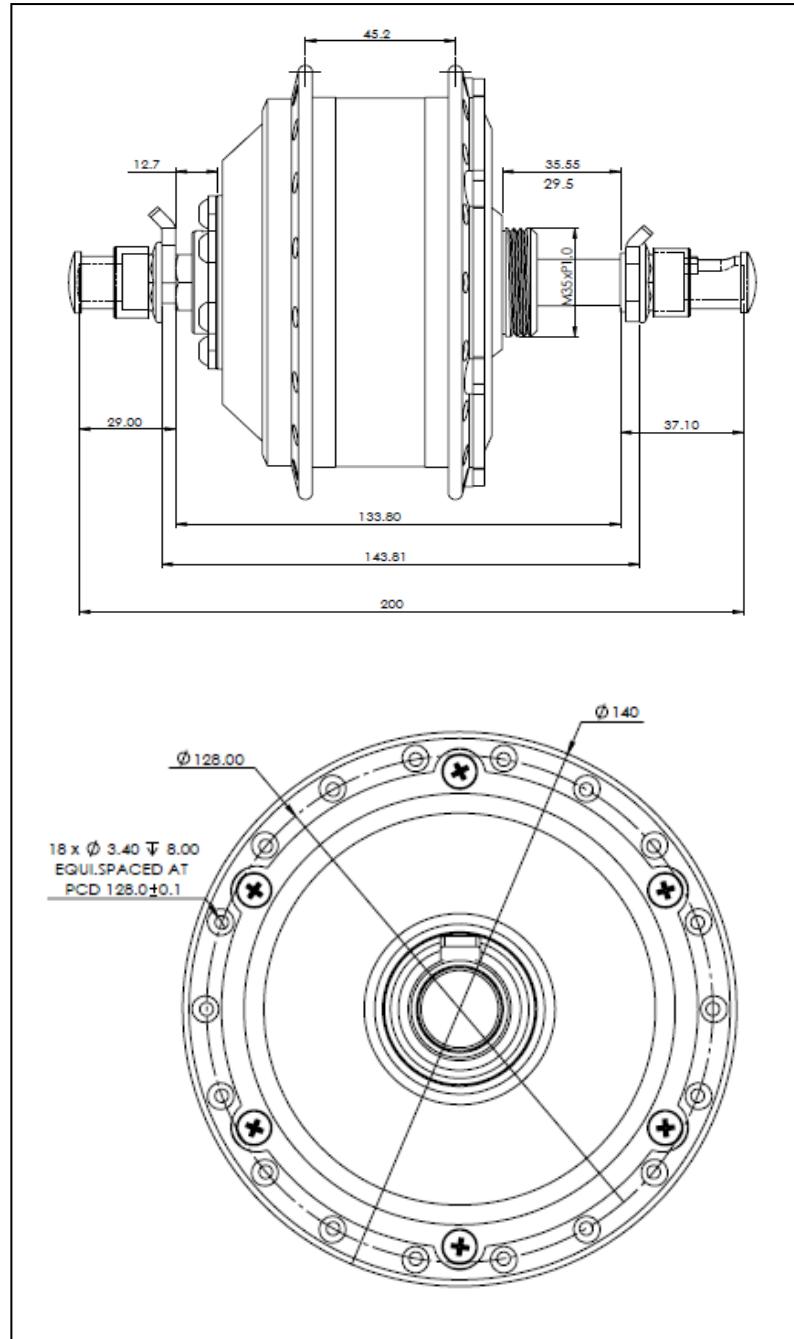
Product Features

- Rear wheel drive
- Low speed Motors support up to 25 km/h*
- Nominal output up to 250 W*
- 11 Nm nominal and 48 Nm peak torque
- Weight: 3.0 kg
- Geared Motor
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 140 mm

Shaft Length: 200mm

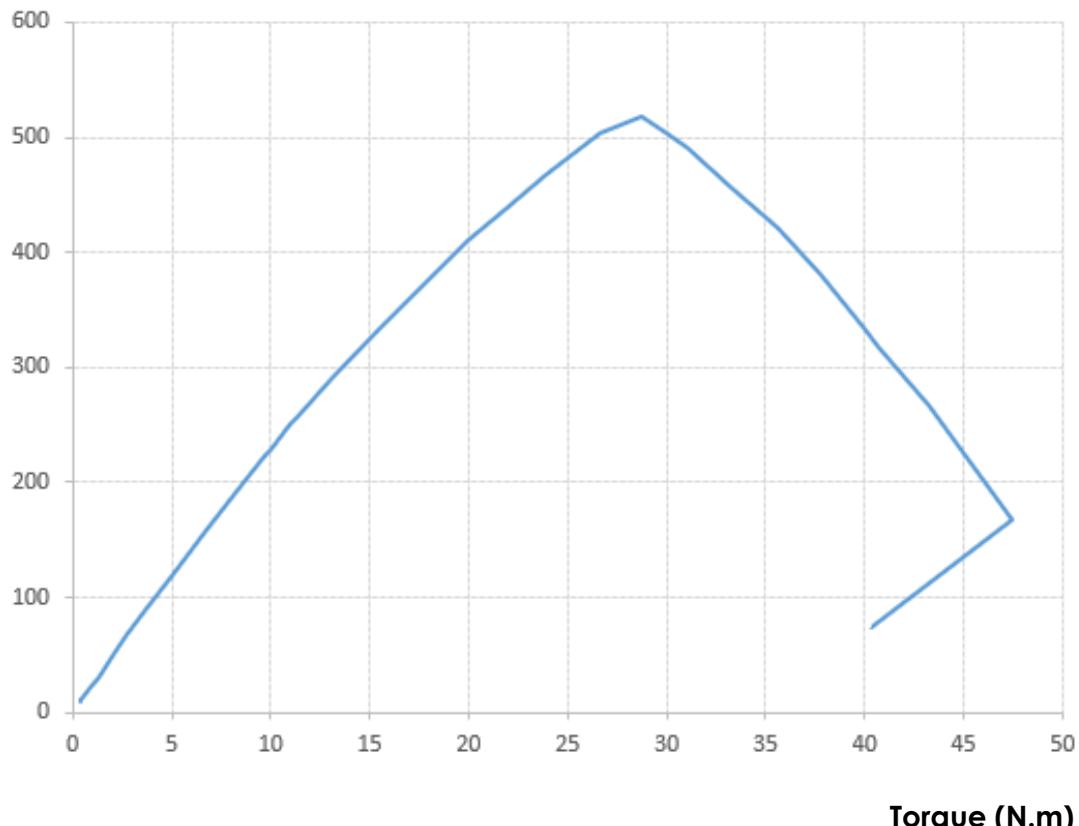
Brake Compatible: Standard cycle disc brake

Spokes Holes: 36

Spokes Holes PCD: 128mm

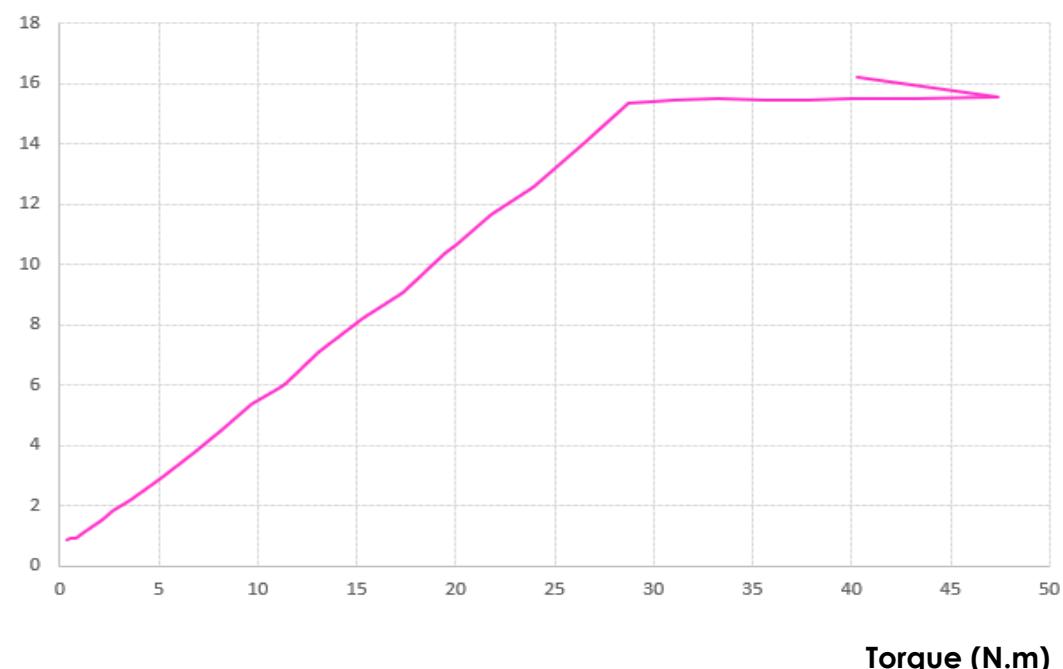
**Output Power (W)
vs Torque (N.m)**

Output Power (W)

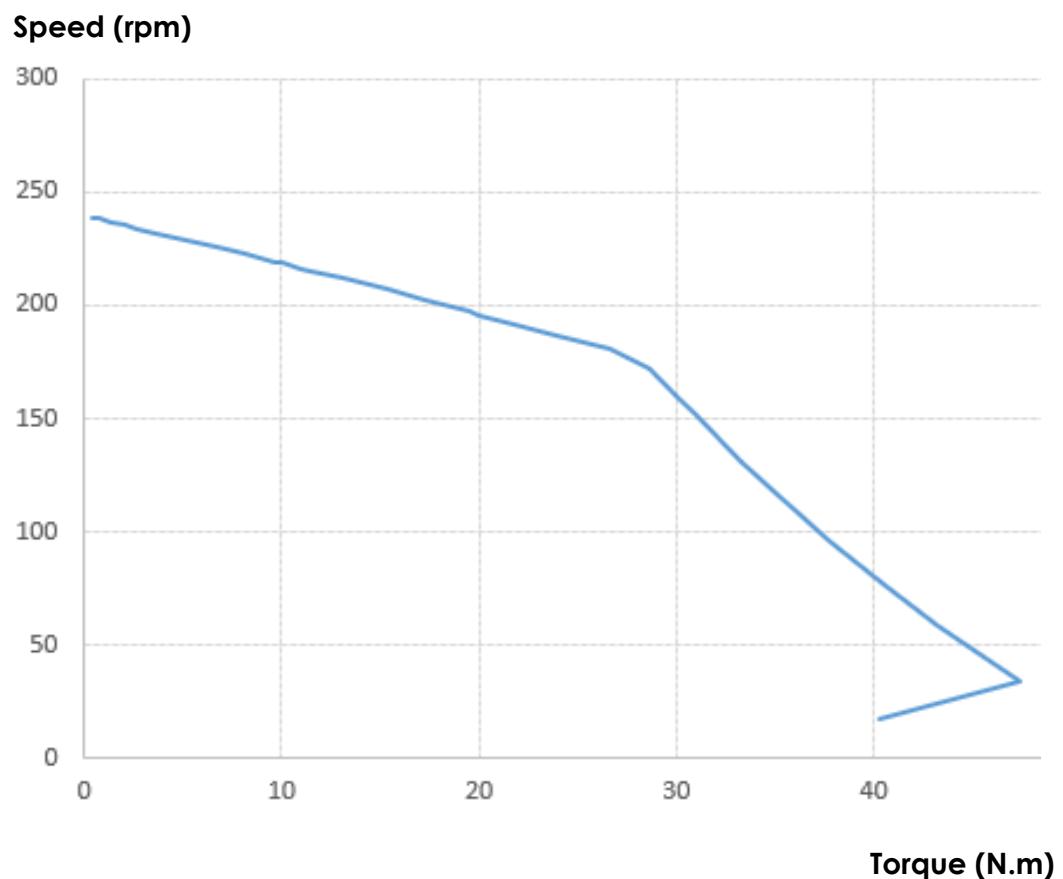


**Current (A)
vs Torque (N.m)**

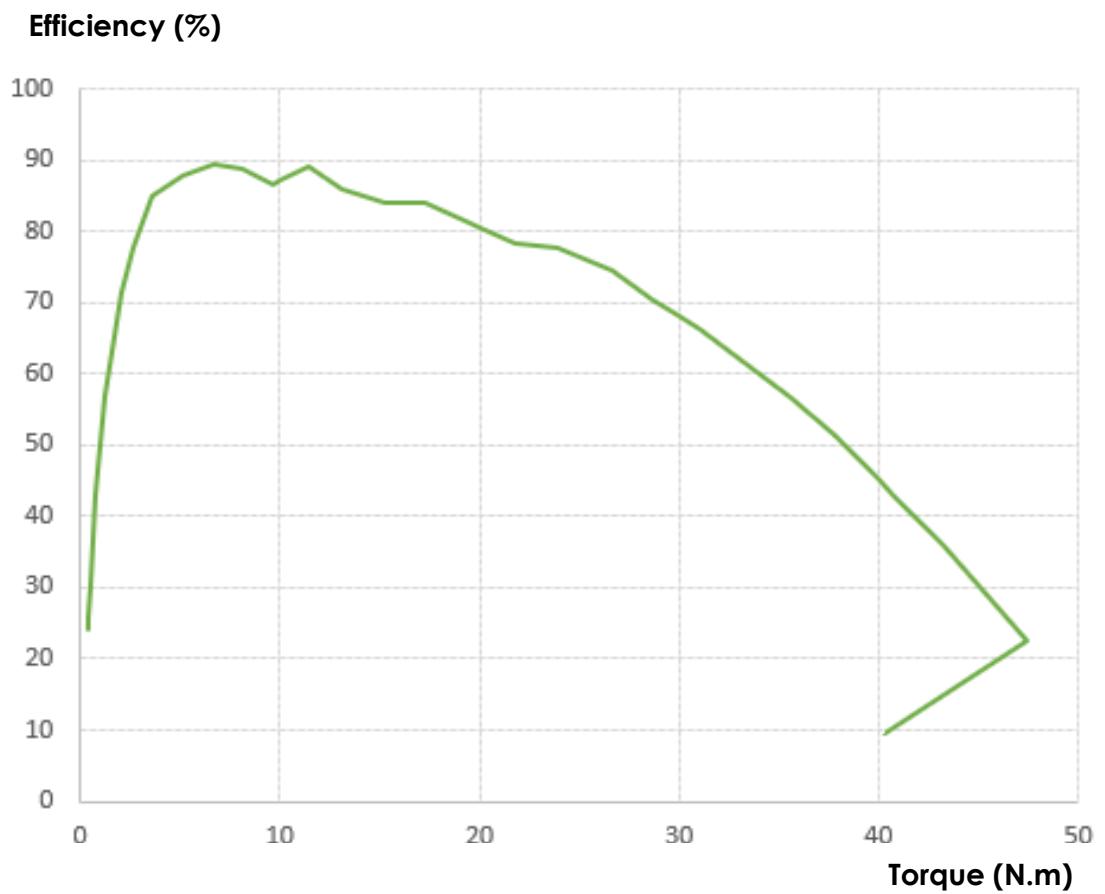
Current (A)



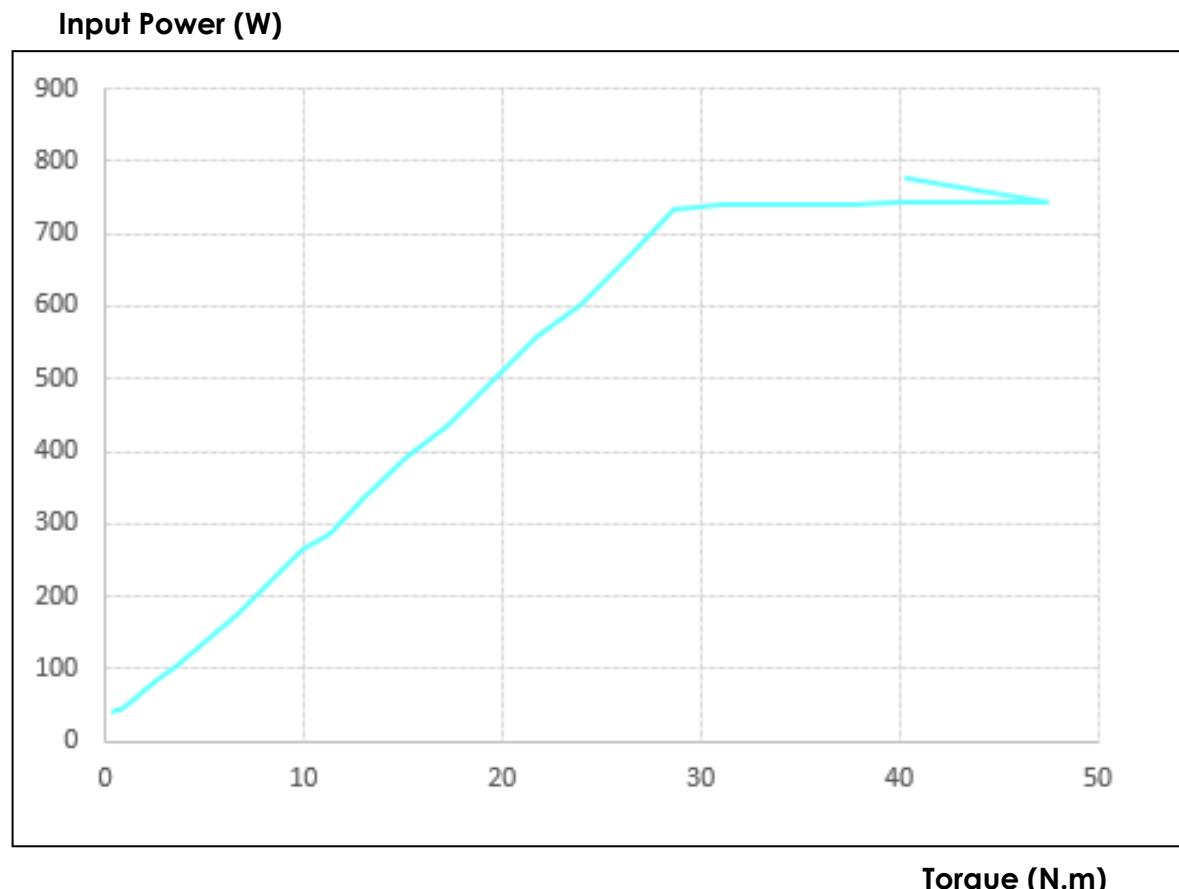
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	47.910	0.8573	41.074	0.4	239.1	10.550	25.7	1.5940
2	47.904	0.8972	42.981	0.5	238.9	12.925	30.1	2.3750
3	47.906	0.9390	44.985	0.8	238.3	19.241	42.8	3.1720
4	47.893	1.1450	54.837	1.3	237.2	31.108	56.7	3.9840
5	47.879	1.5023	71.931	2.1	235.4	51.449	71.5	4.7810
6	47.838	2.1687	103.75	3.6	231.9	88.200	85.0	6.3750
7	47.835	2.8847	137.99	5.1	228.9	121.15	87.8	7.1870
8	47.855	3.6797	176.09	6.7	225.6	157.54	89.5	7.9840
9	47.888	4.4648	213.81	8.1	222.8	189.65	88.7	8.7810
10	47.896	5.3760	257.49	9.7	219.2	223.33	86.7	9.5780
11	47.896	5.4953	263.20	10.0	218.6	229.48	87.1	9.7220
12	47.897	5.8928	282.25	11.0	216.4	250.00	88.5	10.202
13	47.897	7.0696	338.61	13.1	211.9	290.53	85.8	11.172
14	47.898	8.2277	394.09	15.3	206.9	331.88	84.2	11.984
15	47.897	9.0800	434.91	17.3	202.3	366.08	84.2	12.781
16	47.897	10.366	496.49	19.5	197.2	402.43	81.1	13.594
17	47.897	10.646	509.93	20.0	196.0	410.01	80.5	13.764
18	47.896	12.584	602.70	23.9	186.9	468.15	77.7	15.172
19	47.897	14.085	674.61	26.6	181.0	503.20	74.6	15.984
20	47.896	15.325	734.00	28.7	172.1	517.66	70.5	16.781
21	47.895	15.406	737.89	30.0	160.5	503.13	68.2	17.241
22	47.895	15.478	741.30	33.3	130.7	455.39	61.4	18.390
23	47.903	15.493	742.16	40.0	80.0	333.67	45.0	20.601
24	47.897	15.498	742.33	43.3	58.9	266.93	36.0	21.594
25	47.895	15.534	743.99	47.4	33.8	167.60	22.5	22.375
26	47.896	16.187	775.27	40.3	17.5	74.004	9.5	23.187

Specifications

Rated Power (Watts)	250
Rated Torque (N.m)	11
Peak Torque (N.m)	47.4
Operating Voltage (Volts)	48
Rated Current (A)	6
Peak Current (A)	17
Rated RPM	215

Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

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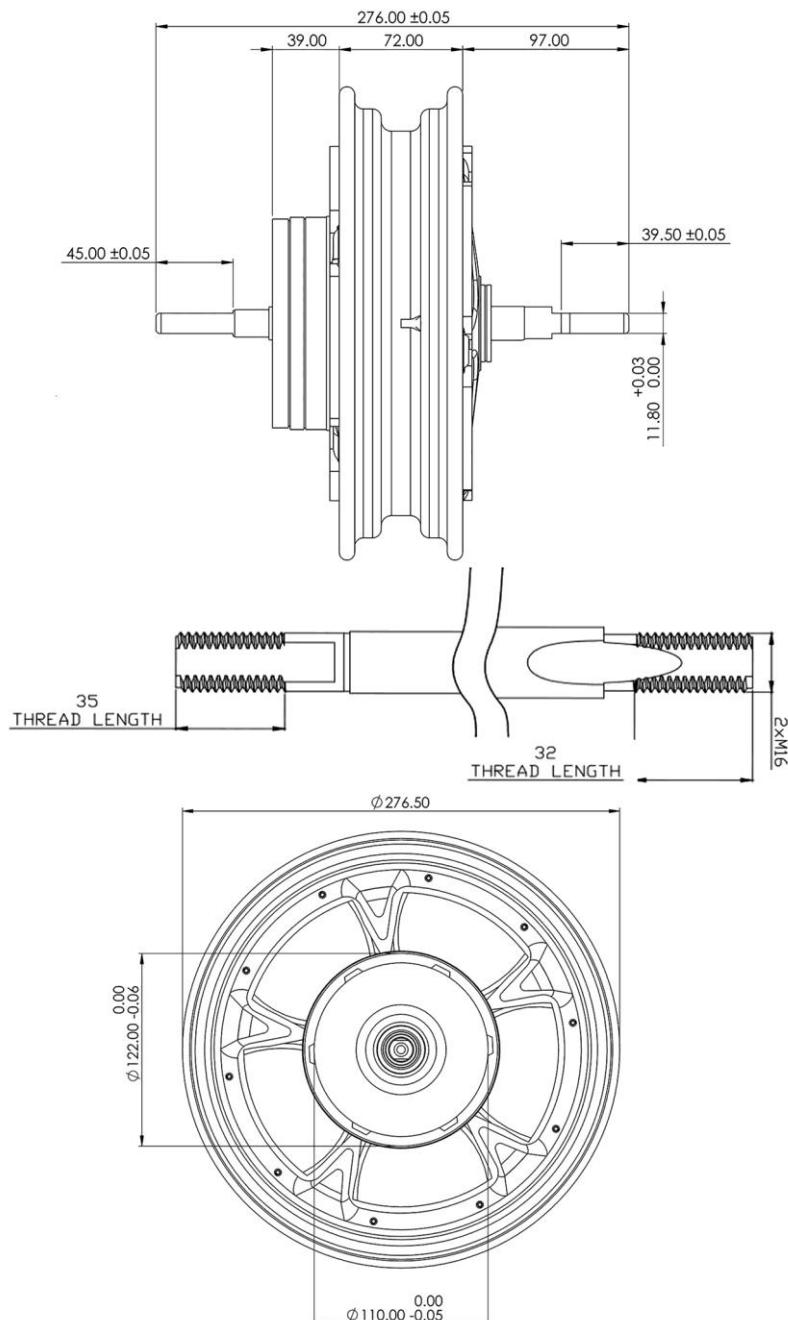
Product Features

- Rear wheel drive
- Low speed Motors support up to 20 km/h*
- Nominal output up to 250 W*
- 11 Nm nominal and 58 Nm peak torque
- Weight: 7.3 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

Brake Size: 110mm

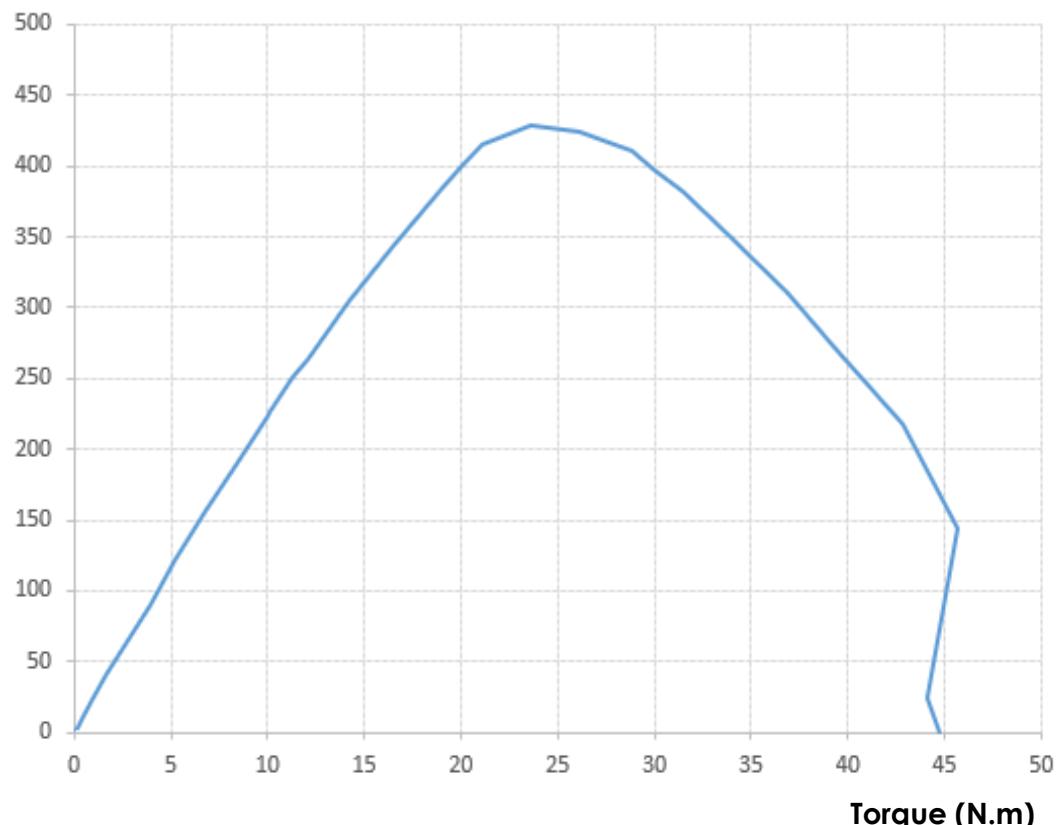
Brake Type: Regular Brakes (shoe type)

Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

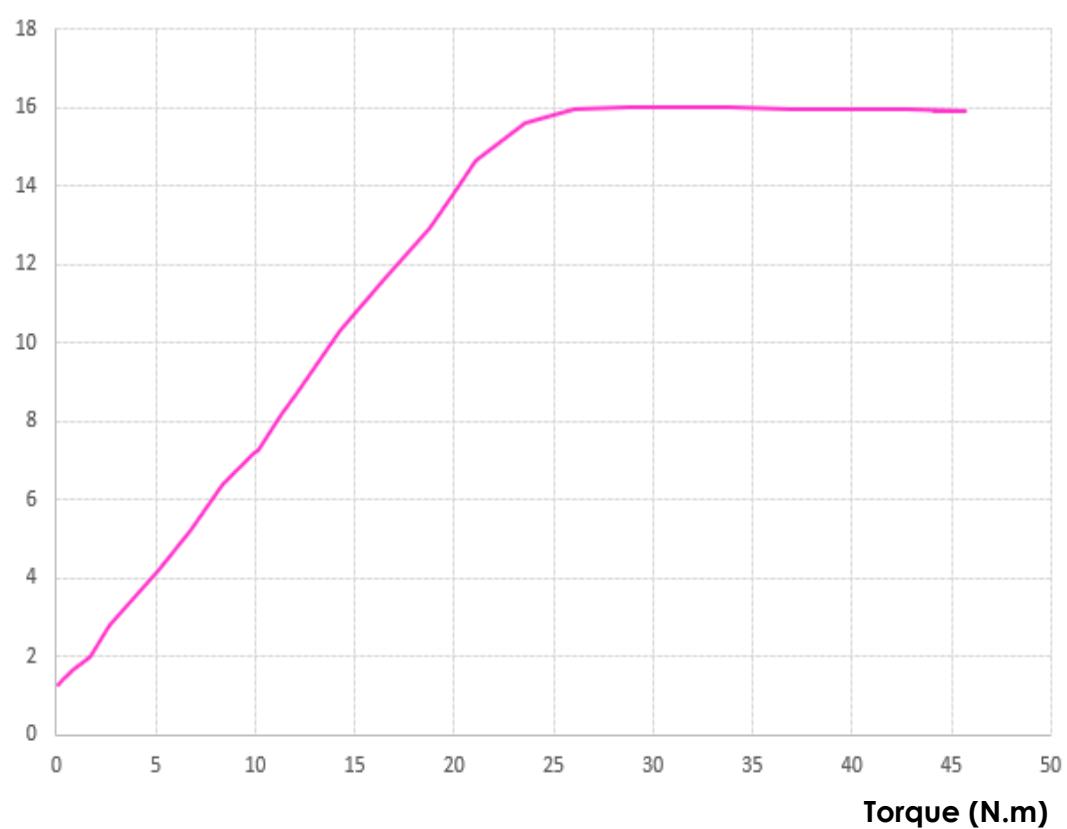
**Output Power (W)
vs Torque (N.m)**

Output Power (W)

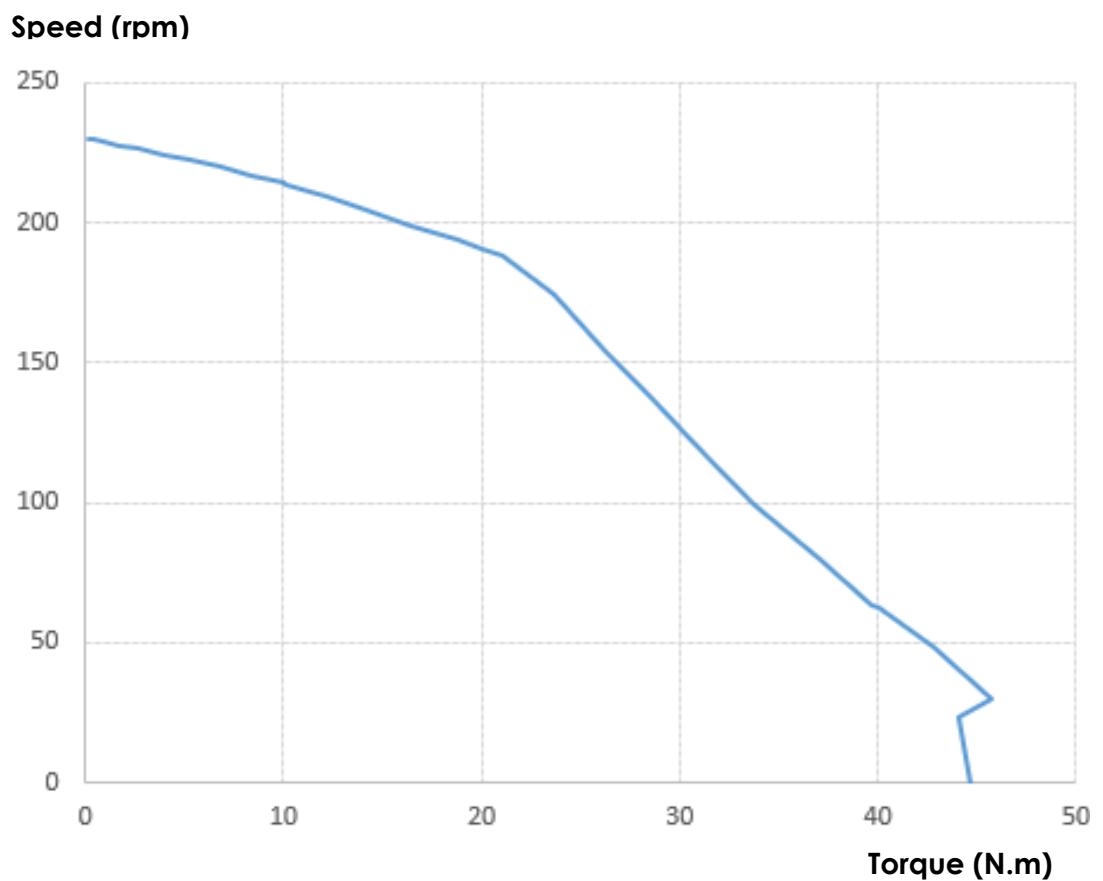


**Current (A)
vs Torque (N.m)**

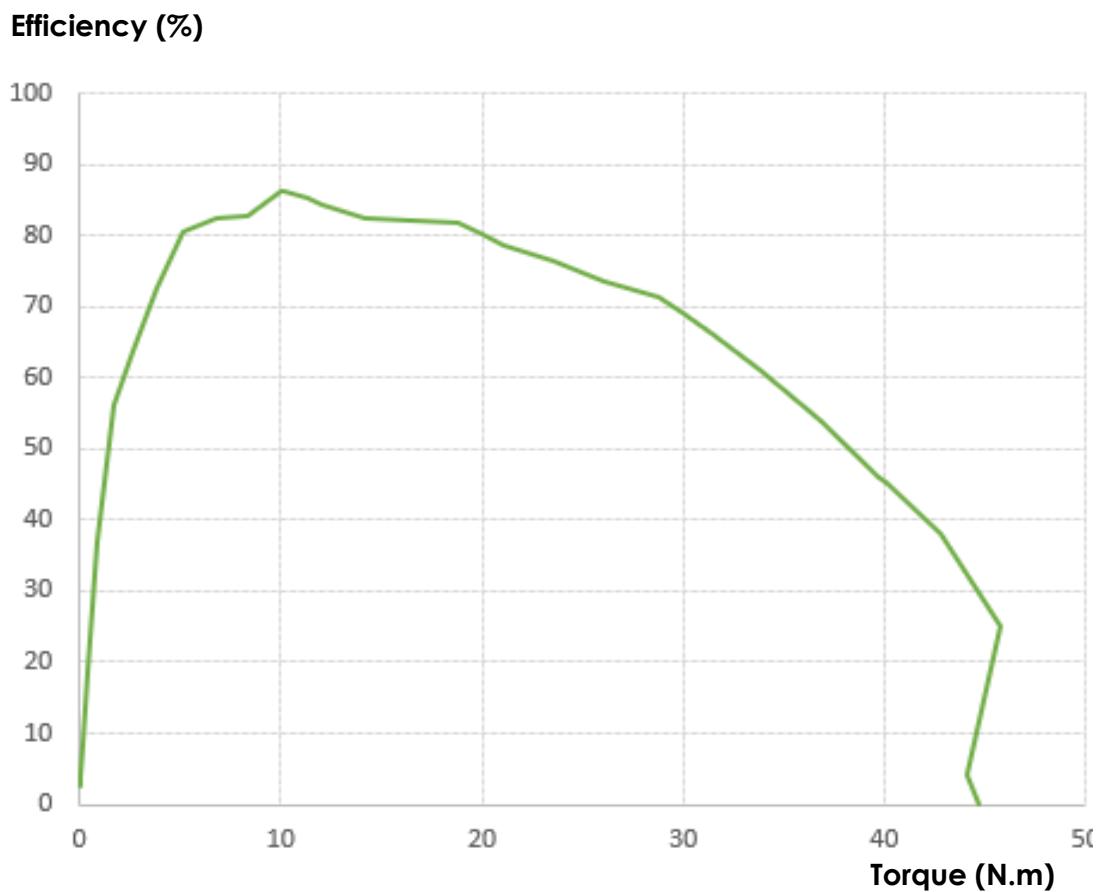
Current (A)



**Speed (rpm)
vs Torque (N.m)**

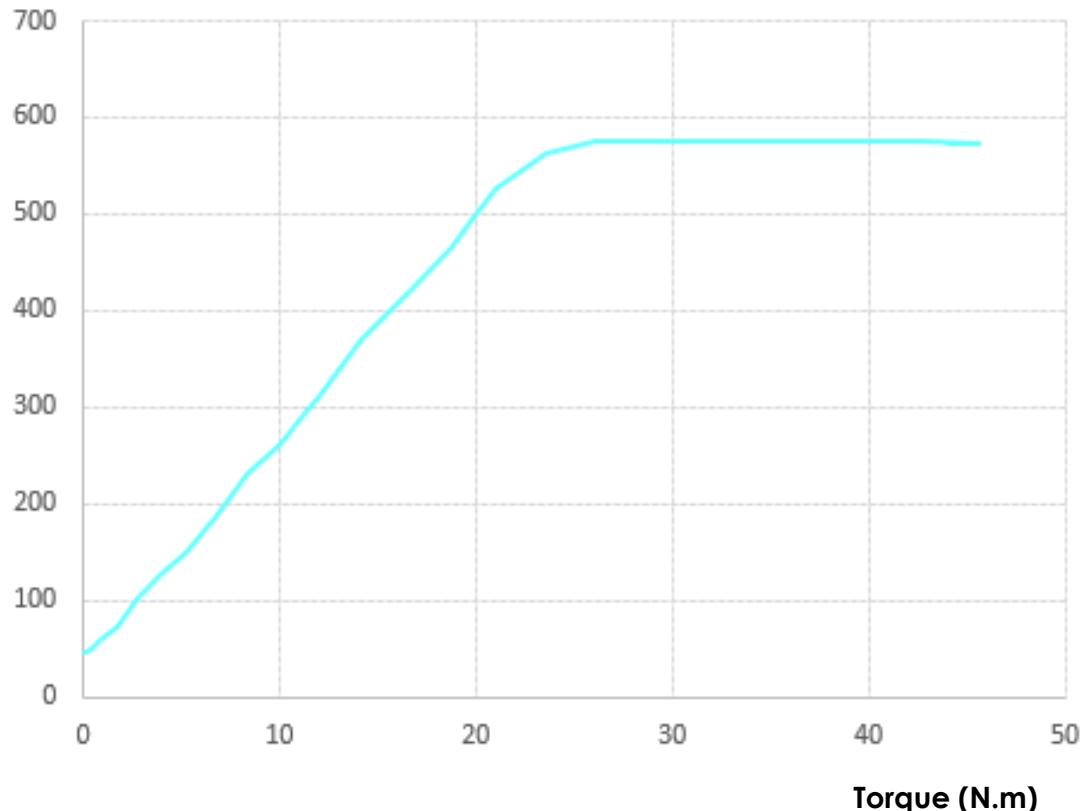


**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**

Input Power (W)



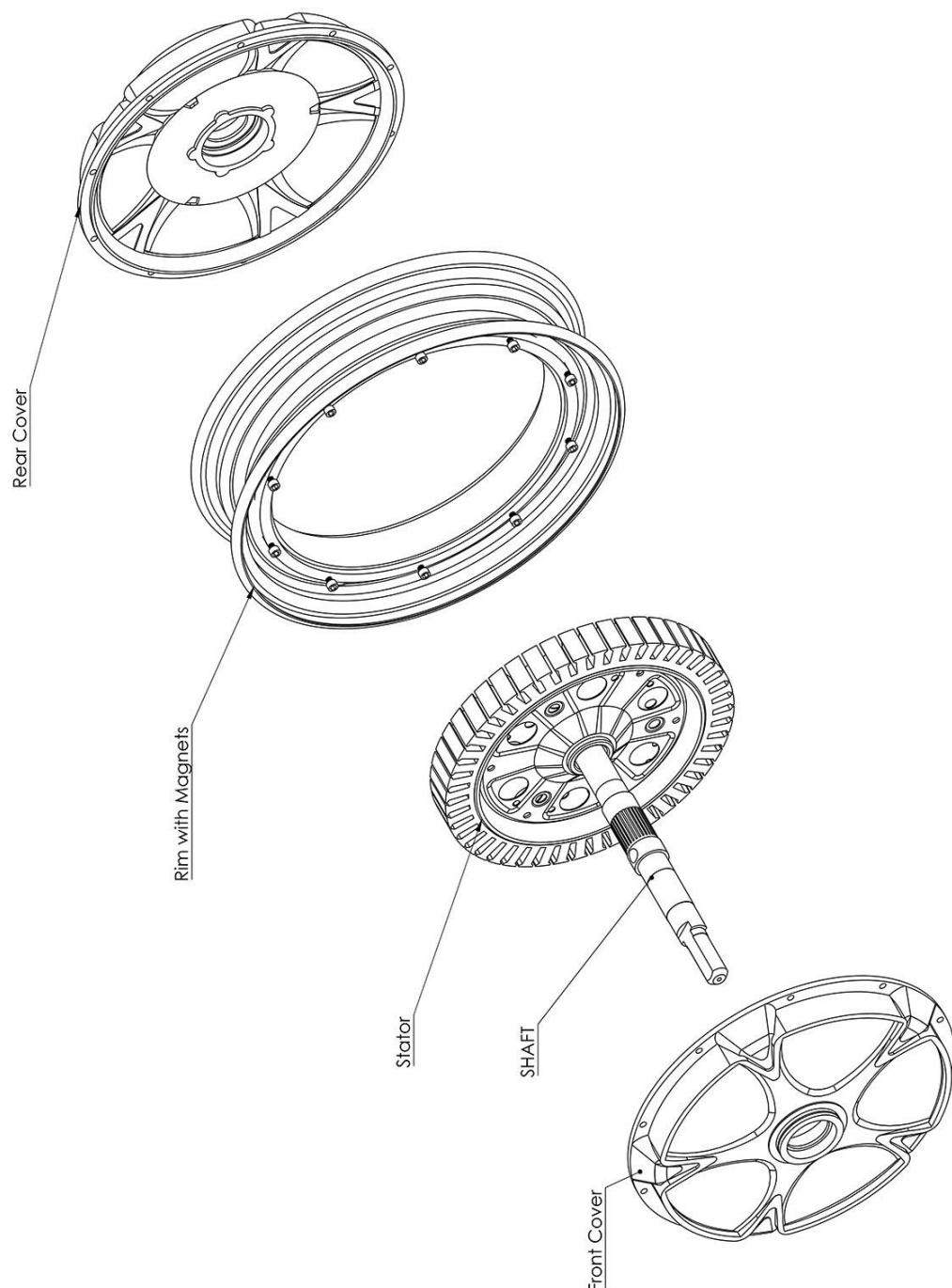
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	35.993	1.2842	46.223	0.1	230.1	1.2337	2.7	0.7970
2	35.987	1.3964	50.252	0.4	229.6	9.3181	18.5	3.1870
3	35.973	1.6675	59.986	0.9	228.7	22.034	36.7	3.9840
4	35.964	1.9940	71.712	1.7	227.2	40.131	56.0	4.7810
5	35.948	2.7839	100.08	2.7	226.4	63.648	63.6	5.5780
6	35.935	3.4830	125.16	3.9	224.1	90.708	72.5	6.3750
7	35.961	4.1903	150.68	5.2	222.3	121.50	80.6	7.1870
8	36.000	5.2368	188.53	6.8	220.0	155.57	82.5	7.9840
9	36.005	6.4034	230.55	8.4	217.2	191.05	82.9	8.7810
10	36.006	7.2616	261.46	10.1	213.9	225.93	86.4	9.5780
11	36.005	8.1533	293.56	11.3	211.0	250.00	85.2	10.083
12	36.005	8.6949	313.05	12.1	209.3	264.62	84.5	10.390
13	36.003	12.930	465.51	18.8	193.6	381.27	81.9	12.797
14	36.002	13.834	498.07	20.0	190.7	398.97	80.2	13.204
15	36.003	15.621	562.43	23.6	174.1	429.27	76.3	14.390
16	36.005	15.980	575.37	26.1	154.9	423.76	73.6	15.172
17	36.004	15.991	575.76	30.0	127.0	397.59	69.0	16.359
18	36.004	15.993	575.81	31.4	116.3	382.60	66.4	16.797
19	36.005	15.979	575.31	36.9	80.5	310.84	54.0	18.390
20	36.003	15.967	574.87	39.7	63.8	265.15	46.1	19.187
21	36.004	15.961	574.67	42.8	48.6	218.19	38.0	20.000
22	36.004	15.923	573.30	45.7	30.2	144.61	25.2	20.797
23	36.004	15.906	572.67	44.1	23.3	107.509	24.3	21.578
23	36.001	15.899	572.40	44.7	0.0	0.0000	0.0	22.375

Specifications

Rated Power (Watts)	250
Rated Torque (N.m)	11
Peak Torque (N.m)	46
Operating Voltage (Volts)	36
Rated Current (A)	8
Peak Current (A)	16
Rated RPM	210

Exploded View



Isometric View



Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

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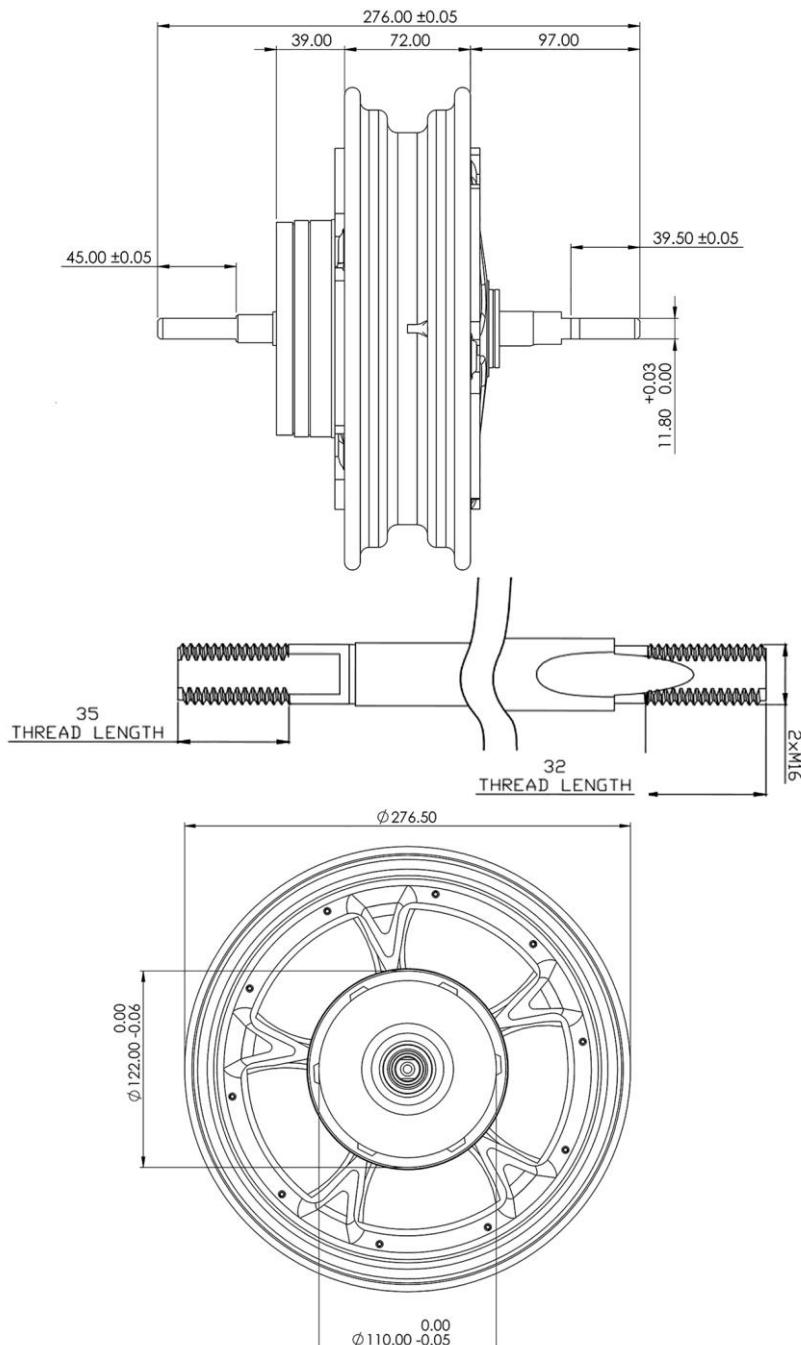
Product Features

- Rear wheel drive
- Low speed Motors support up to 25 km/h*
- Nominal output up to 350 W*
- 10 Nm nominal and 51 Nm peak torque
- Weight: 7.5 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

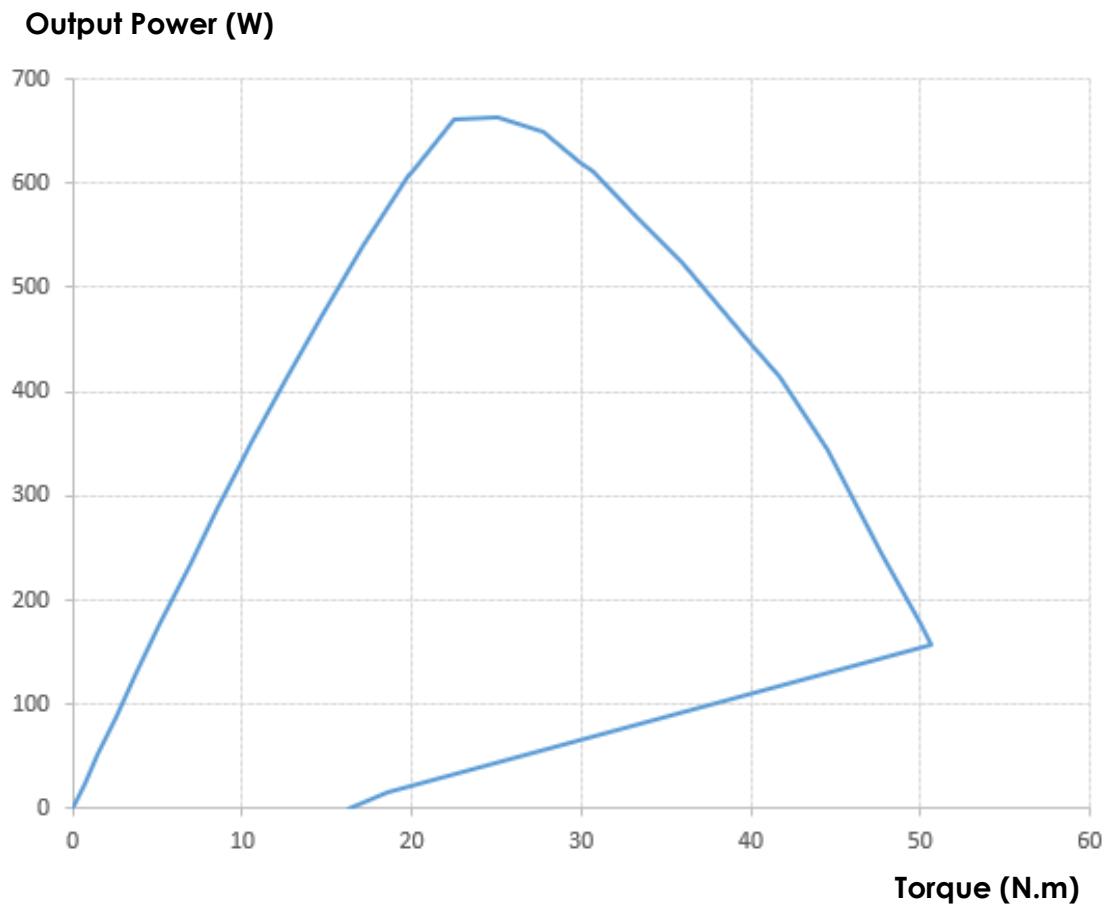
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

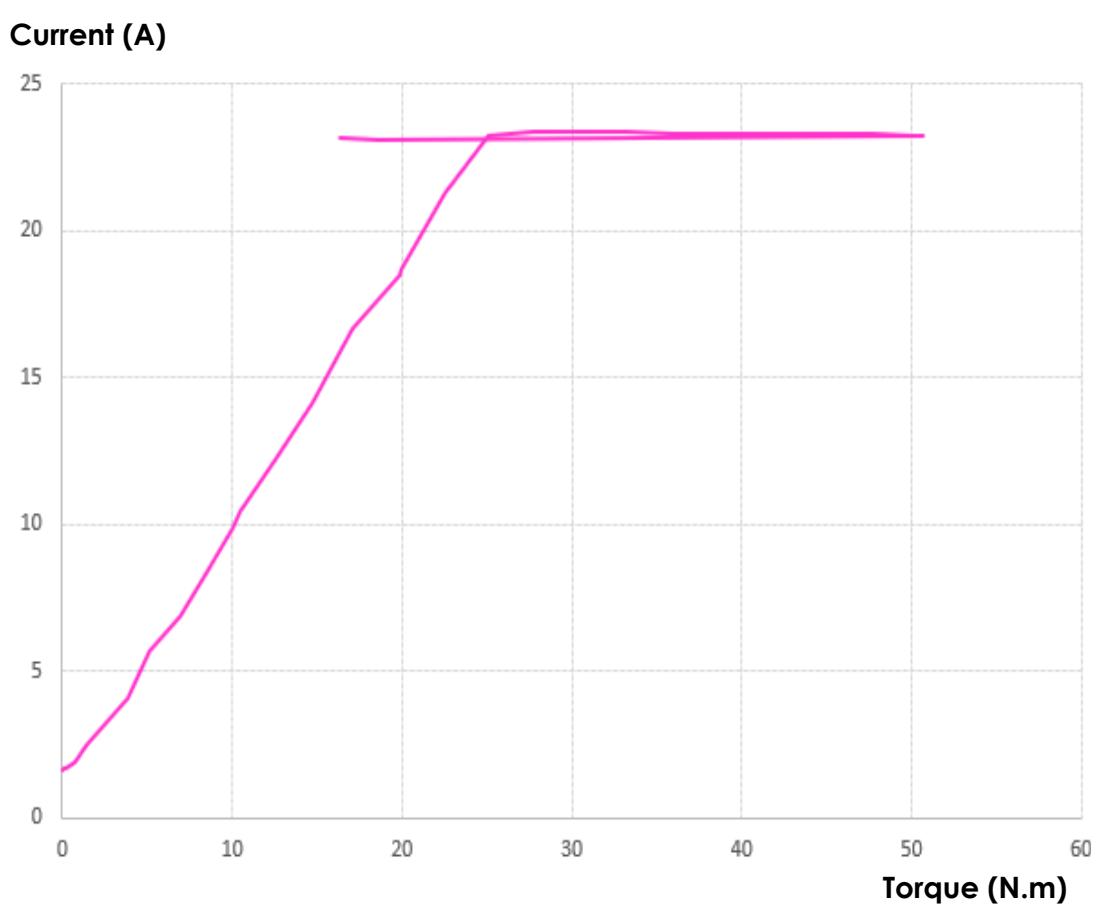
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

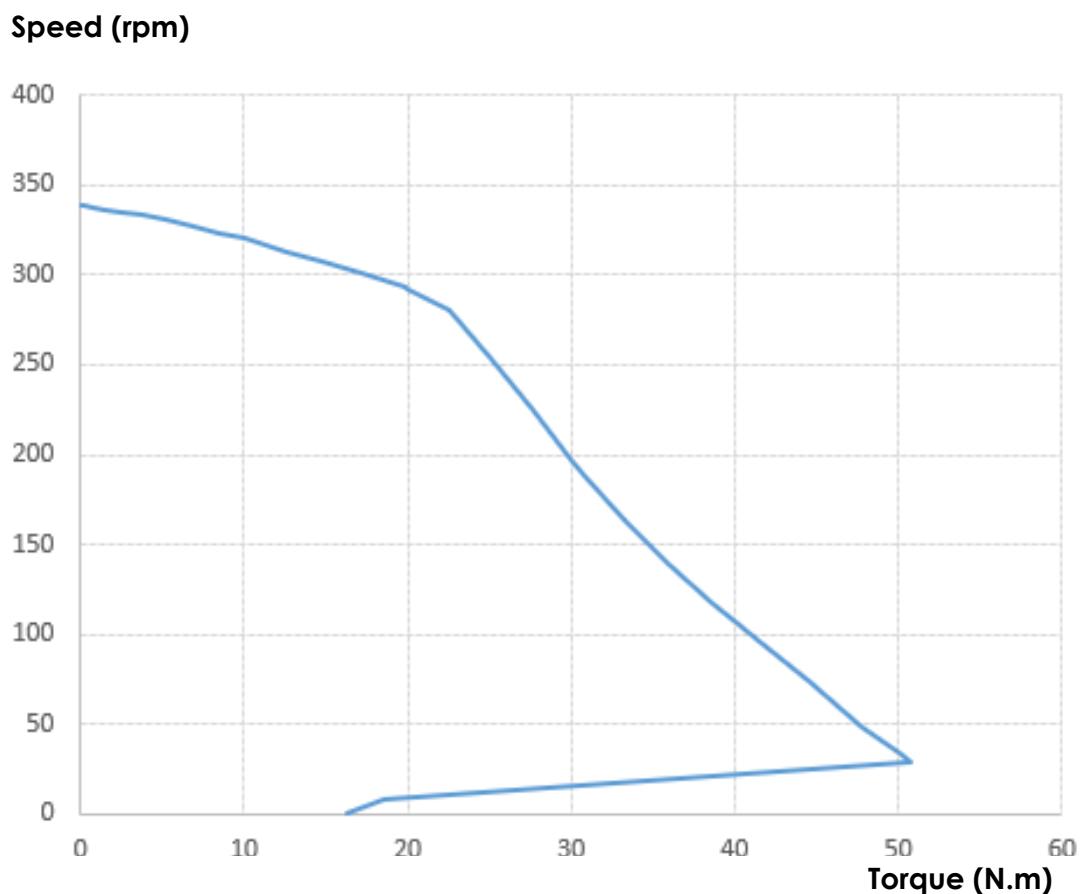
**Output Power (W)
vs Torque (N.m)**



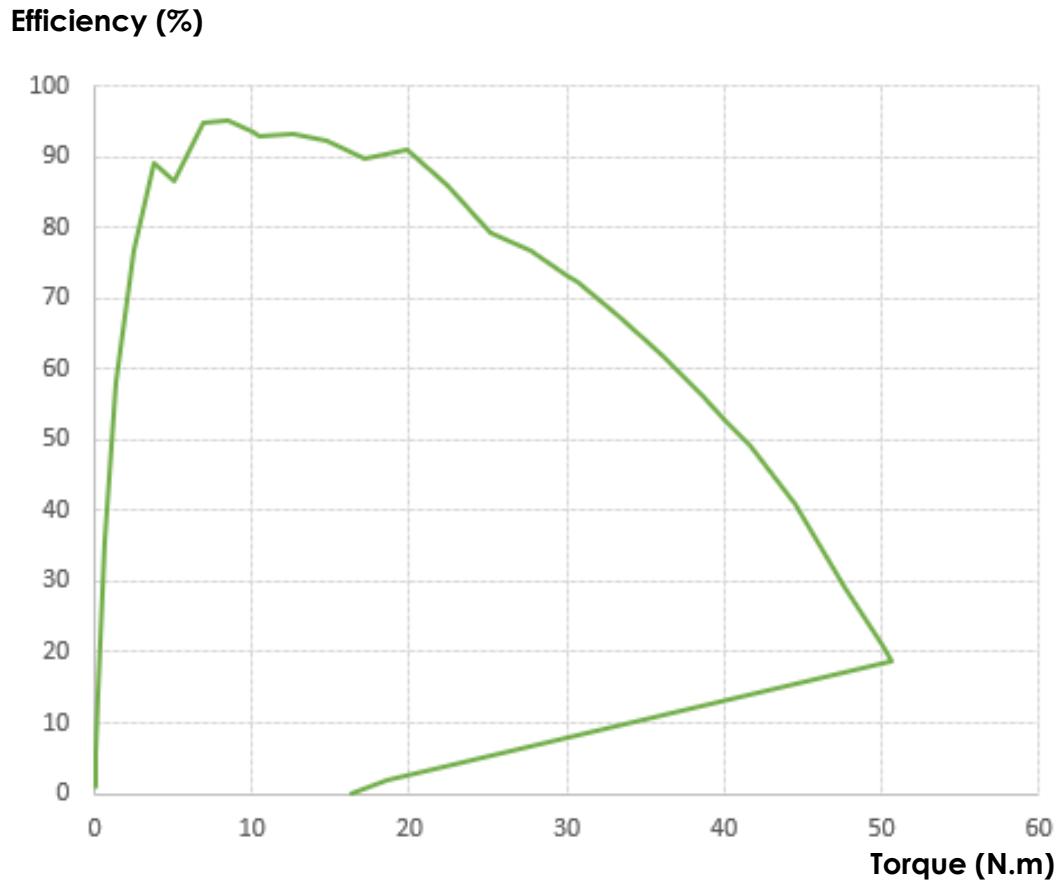
**Current (A)
vs Torque (N.m)**



**Speed (rpm)
vs Torque (N.m)**

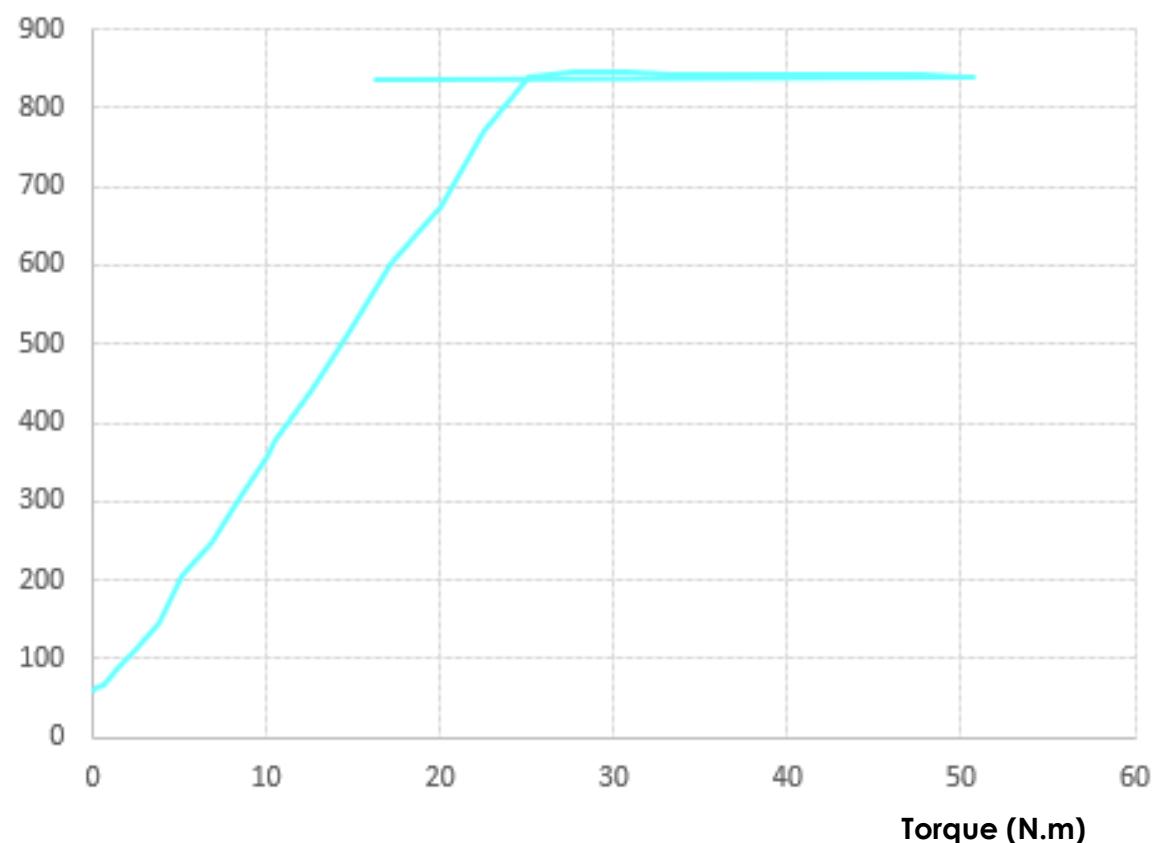


**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**

Input Power (W)



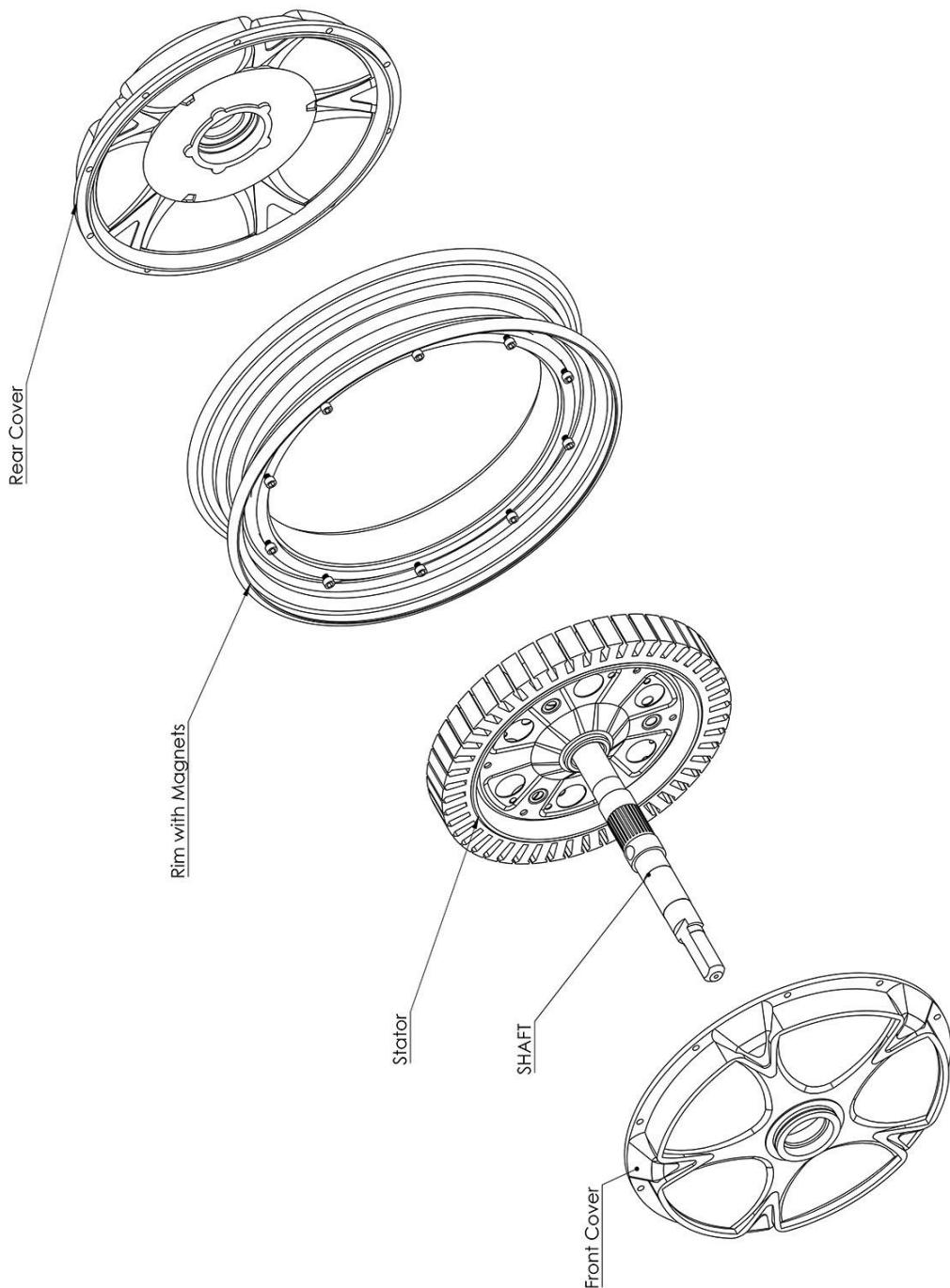
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	36.139	1.6196	58.530	0.0	338.6	1.2020	2.1	1.5940
2	36.138	1.6575	59.897	0.1	338.4	3.3411	5.6	2.3910
3	36.134	1.7119	61.858	0.2	338.1	8.5714	13.9	3.1720
4	36.125	1.8905	68.293	0.7	337.3	24.312	35.6	3.9840
5	36.108	2.4245	87.544	1.4	336.0	50.936	58.2	4.7970
6	36.109	3.1334	113.15	2.5	334.9	86.624	76.6	5.5780
7	36.151	4.0802	147.50	3.8	333.6	131.34	89.0	6.3750
8	36.162	5.6649	204.86	5.1	330.4	177.12	86.5	7.1720
9	36.163	6.8591	248.05	6.9	327.1	235.13	94.8	8.0000
10	36.162	8.3875	303.31	8.5	323.2	288.83	95.2	8.7810
11	36.162	9.9014	358.05	10.0	319.9	334.71	93.6	9.3858
12	36.162	10.406	376.30	10.5	318.8	350.00	93.0	9.5874
13	36.162	12.250	442.98	12.6	313.0	413.02	93.2	10.375
14	36.161	14.151	511.70	14.7	307.6	472.61	92.4	11.172
15	36.146	16.643	601.60	17.1	300.7	539.68	89.7	11.984
16	36.156	18.450	667.08	19.8	292.7	607.59	91.1	12.781
17	36.156	18.660	674.67	20.0	291.8	611.59	90.7	12.841
18	36.160	21.283	769.59	22.5	280.8	661.57	86.0	13.594
19	36.161	23.356	844.59	27.7	224.0	648.76	76.8	15.188
20	36.160	23.352	844.43	30.0	198.0	619.61	73.4	15.811
21	36.161	23.334	843.77	33.2	164.0	569.50	67.5	16.797
22	36.160	23.313	843.02	35.9	139.1	523.19	62.1	17.594
23	36.159	23.302	842.58	41.7	94.9	413.89	49.1	19.172
24	36.160	23.239	840.30	50.0	34.1	177.50	21.1	21.392
25	36.160	23.230	839.99	50.7	29.6	157.06	18.7	21.578
26	36.160	23.107	835.55	18.6	8.6	16.676	2.0	22.391

Specifications

Rated Power (Watts)	350
Rated Torque (N.m)	11
Peak Torque (N.m)	51
Operating Voltage (Volts)	36
Rated Current (A)	8
Peak Current (A)	23
Rated RPM	320

Exploded View



Isometric View



Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

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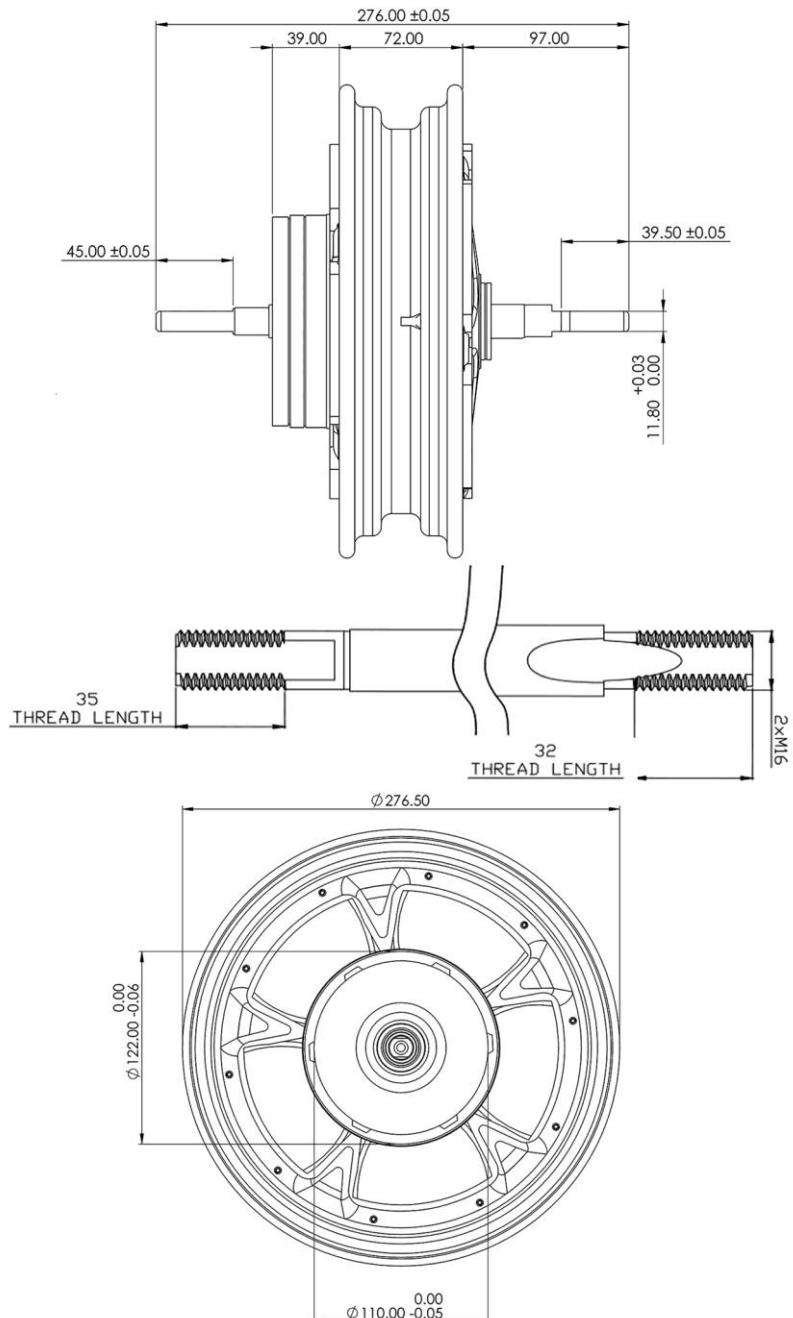
Product Features

- Rear wheel drive
- Low speed Motors support up to 20 km/h*
- Nominal output up to 250 W*
- 8.2 Nm nominal and 55 Nm peak torque
- Weight: 7.3 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

Brake Size: 110mm

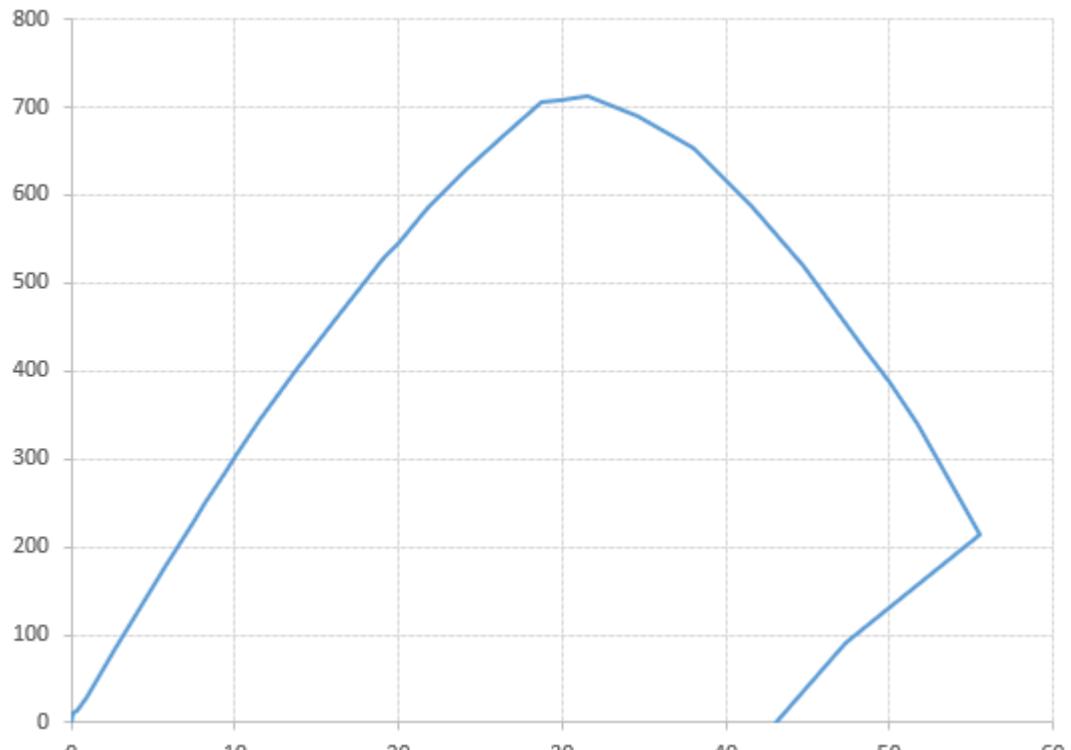
Brake Type: Regular Brakes (shoe type)

Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

**Output Power (W)
vs Torque (N.m)**

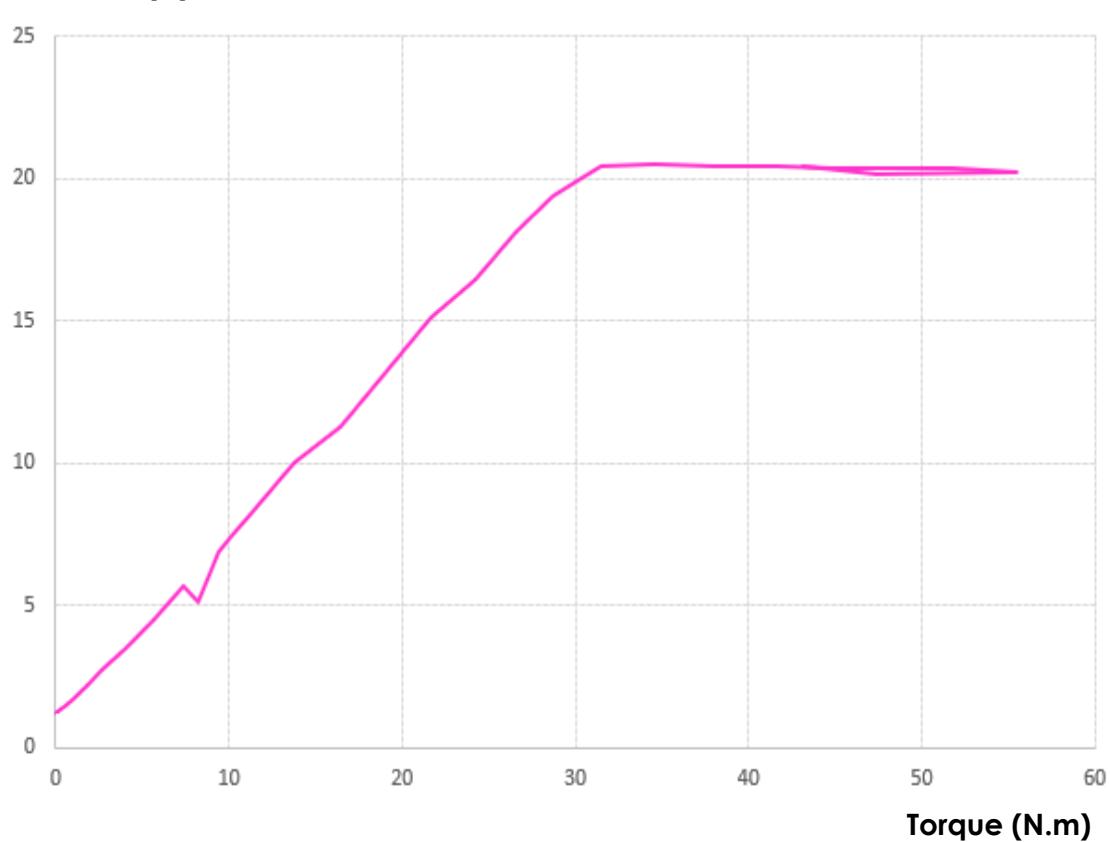
Output Power (W)



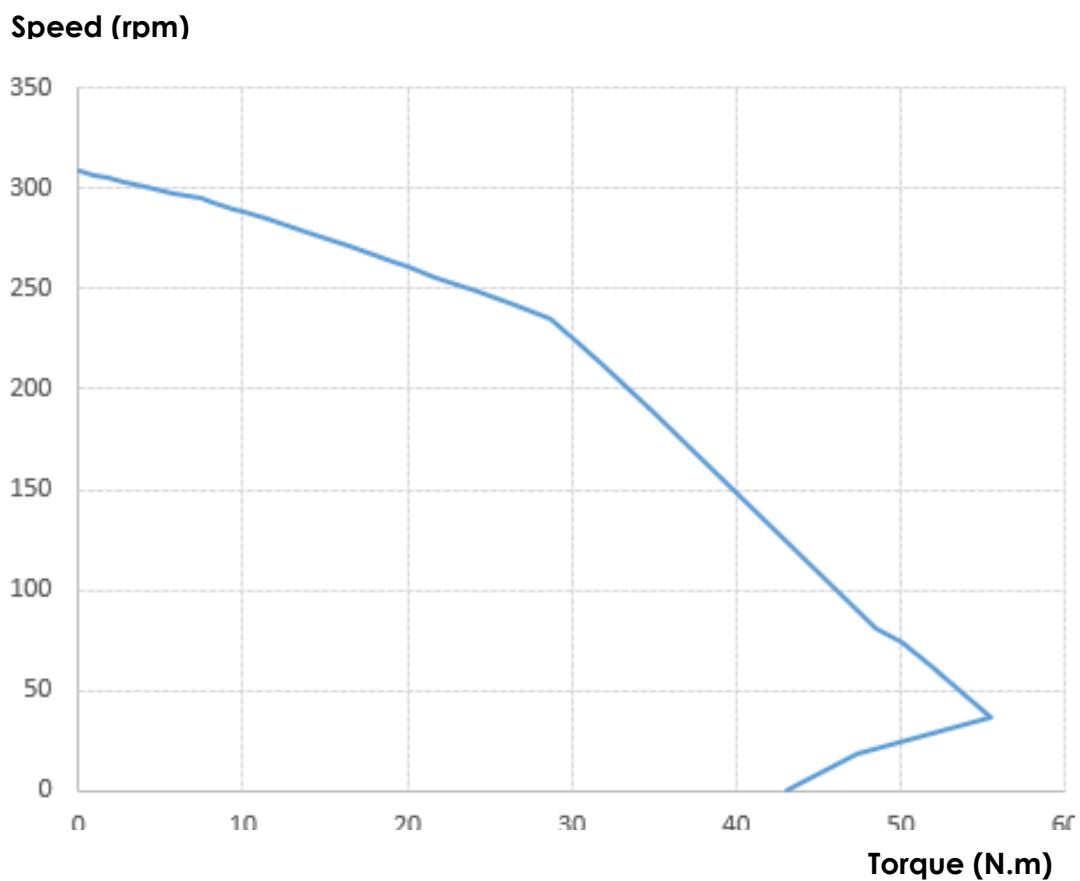
**Current (A)
vs Torque (N.m)**

Current (A)

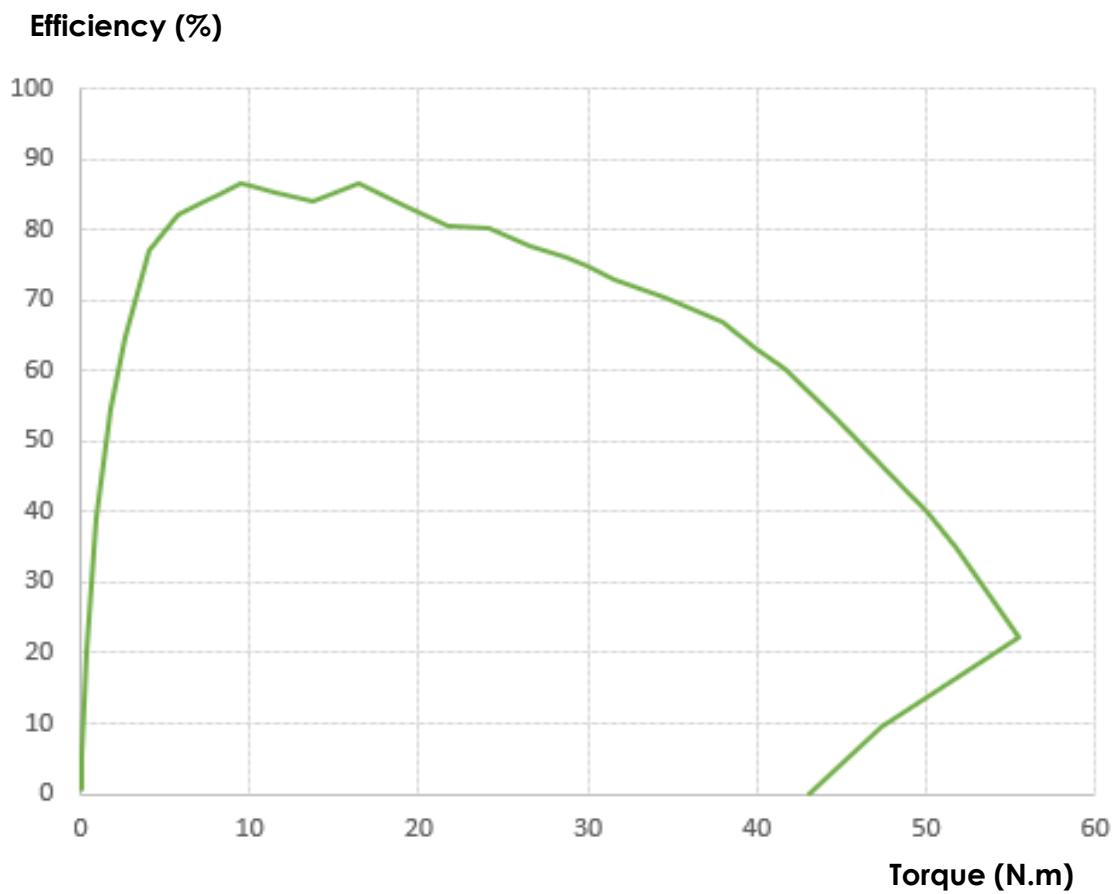
Torque (N.m)



**Speed (rpm)
vs Torque (N.m)**

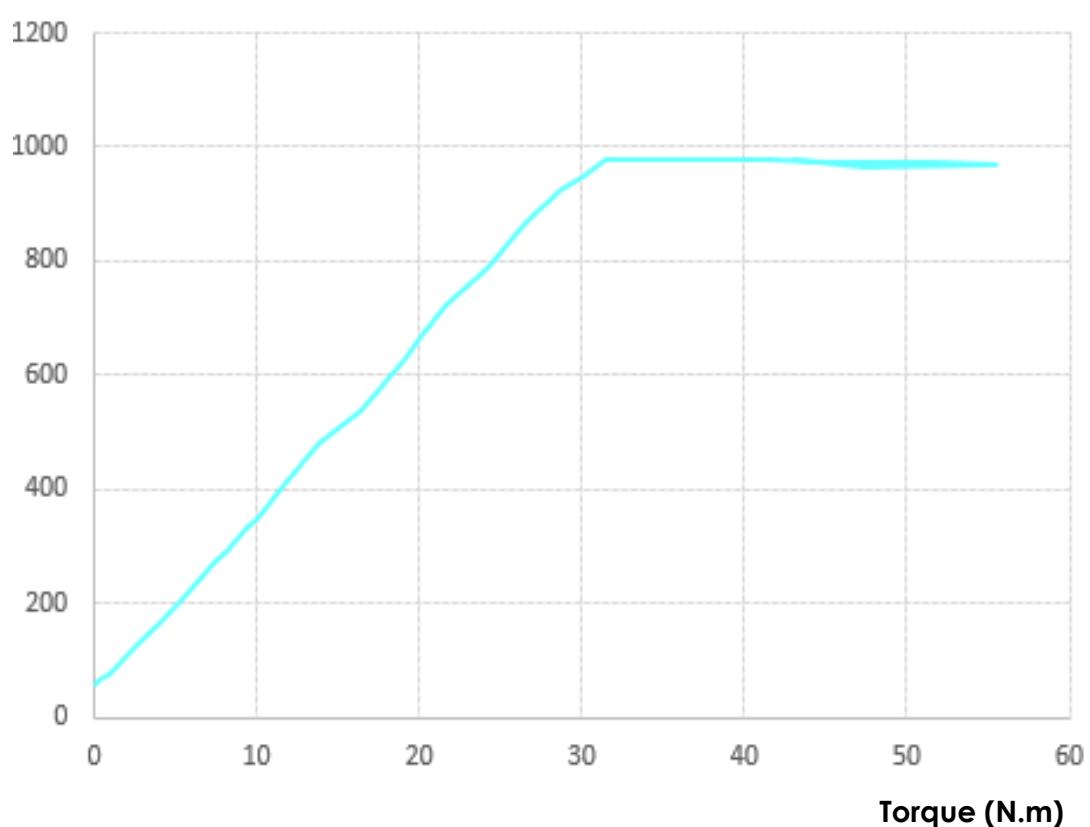


**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**

Input Power (W)



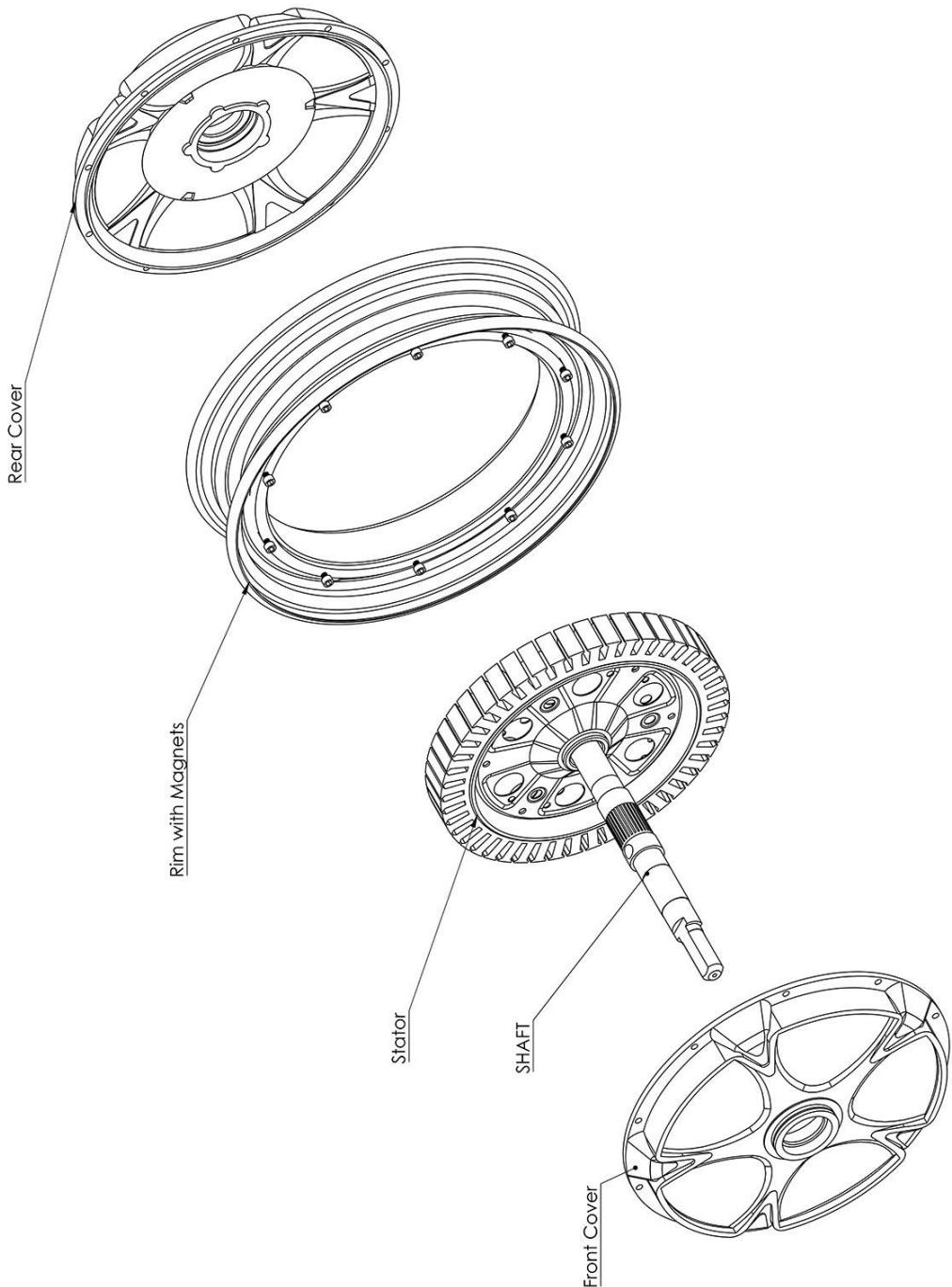
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	47.825	1.2016	57.466	0.0	308.7	0.2946	0.5	1.5940
2	47.827	1.2383	59.225	0.1	308_6	11.304	5.3	2.3750
3	47.818	1.4071	67.284	0.4	308.0	13.402	19.9	11880
4	47.805	1.6045	76.702	0.9	306.7	29.939	39.0	19850
5	47.767	2.1600	103.18	1.8	305.4	56.086	54.4	4.7820
6	47.772	2.7212	130.00	2.7	302.8	84.106	64.7	5.5790
7	47.776	3.4024	162.56	4.0	301.1	125.33	77.1	6.3750
8	47.828	5.6785	271.59	7.4	294.6	228.61	84.2	7.9850
9	47.829	5.1348	293.42	8.2	292.7	250.00	85.1	8.2845
10	47.831	7.3300	350.60	10.0	288.1	302.19	86.2	9.0097
11	47.830	8.4229	402.87	11.5	284.5	343.83	85.3	9.5790
12	47.830	11.238	537.51	16.4	271.2	464.78	86.5	11.172
13	47.829	13.237	631.12	19.1	263.5	527.83	83.4	11.985
14	47.827	15.109	722.61	21.7	255.9	585.31	80.4	12.782
15	47.827	16.450	786.73	24.2	248.8	630.13	80.1	13.579
16	47.826	19.377	926.73	28.7	234.9	704.96	76.1	15.172
17	47.826	19.837	948.72	30.0	225.9	708.12	74.7	15.536
18	47.825	20.474	979.19	34.6	190.7	690.02	70.5	16.797
19	47.825	20.451	978.08	38.0	164.3	653.90	66.9	17.579
20	47.825	20.42	977.02	400	1479	617.05	63.2	18.021
21	47.825	20.411	976.17	416	134.8	587.57	60.2	18.375
22	47.825	20.390	975.15	44.8	110.4	518.12	53.1	19.172
23	47.826	20.339	972.74	50.0	74.3	387.35	39.9	20.342
24	47.826	20.327	972.18	51.8	62.5	339.04	34.9	20.782
25	47.826	20.249	968.44	55.5	369	214.43	22.1	21.579
26	47.826	20.445	977.80	43.1	0.0	0.0000	0.0	23.172

Specifications

Rated Power (Watts)	250
Rated Torque (N.m)	11
Peak Torque (N.m)	48
Operating Voltage (Volts)	36
Rated Current (A)	8
Peak Current (A)	21
Rated RPM	290

Exploded View



Isometric View



Product Description

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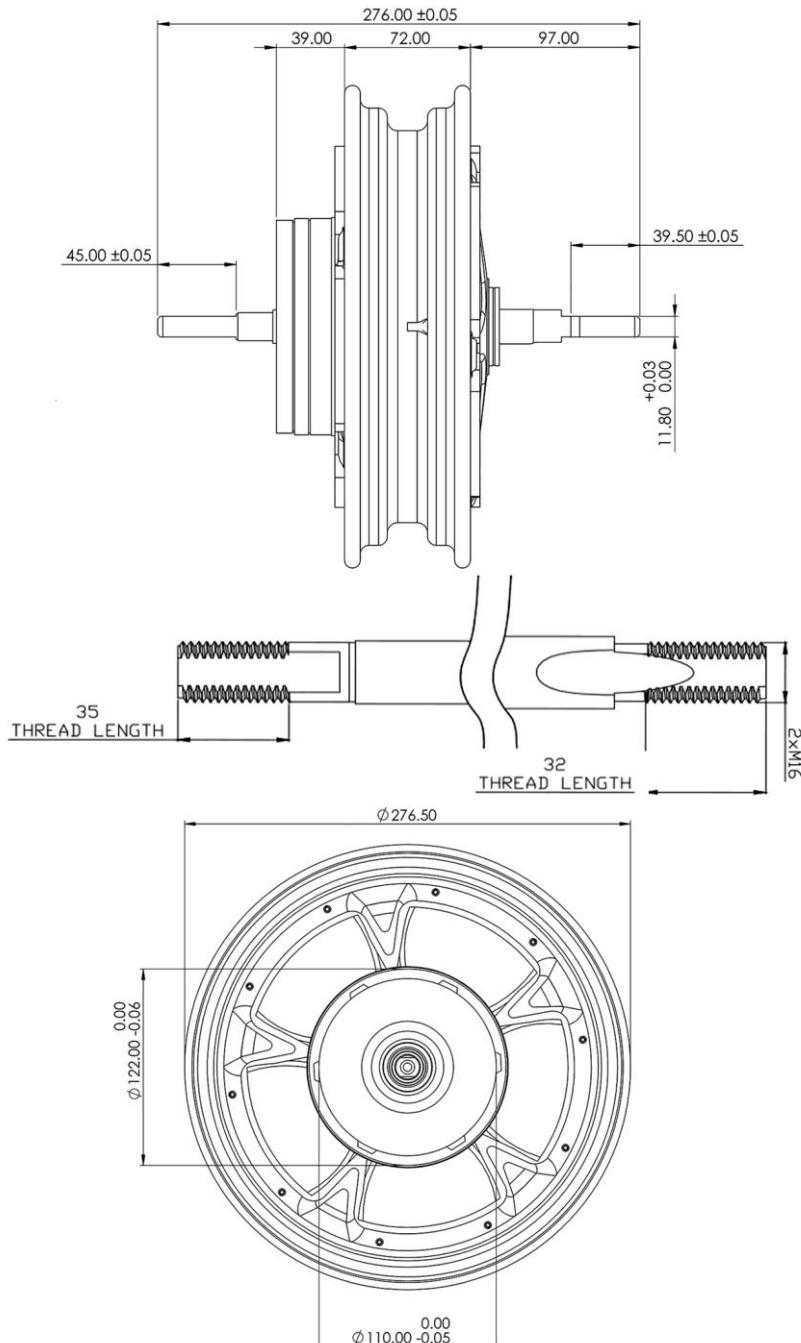
Product Features

- Rear wheel drive
- Low speed Motors support up to 25 km/h*
- Nominal output up to 350 W*
- 8.5 Nm nominal and 59 Nm peak torque
- Weight: 7.5 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

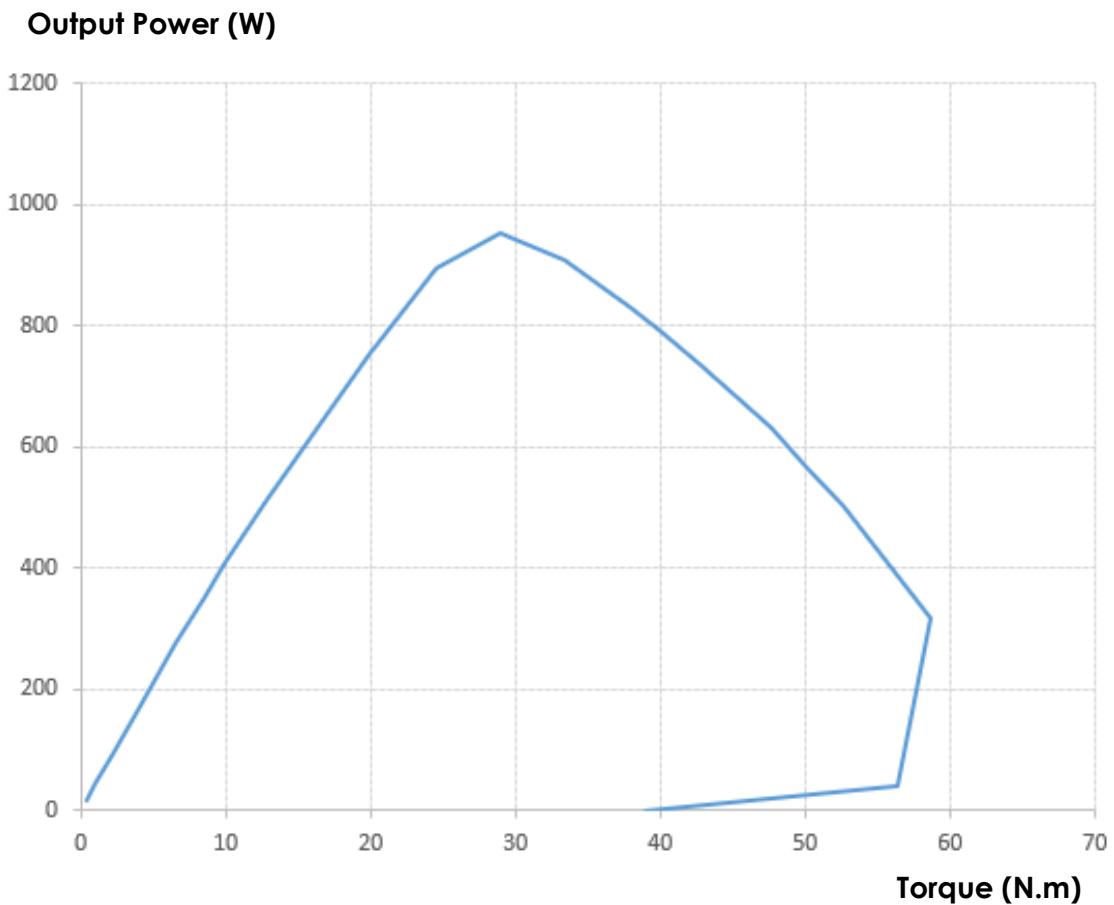
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

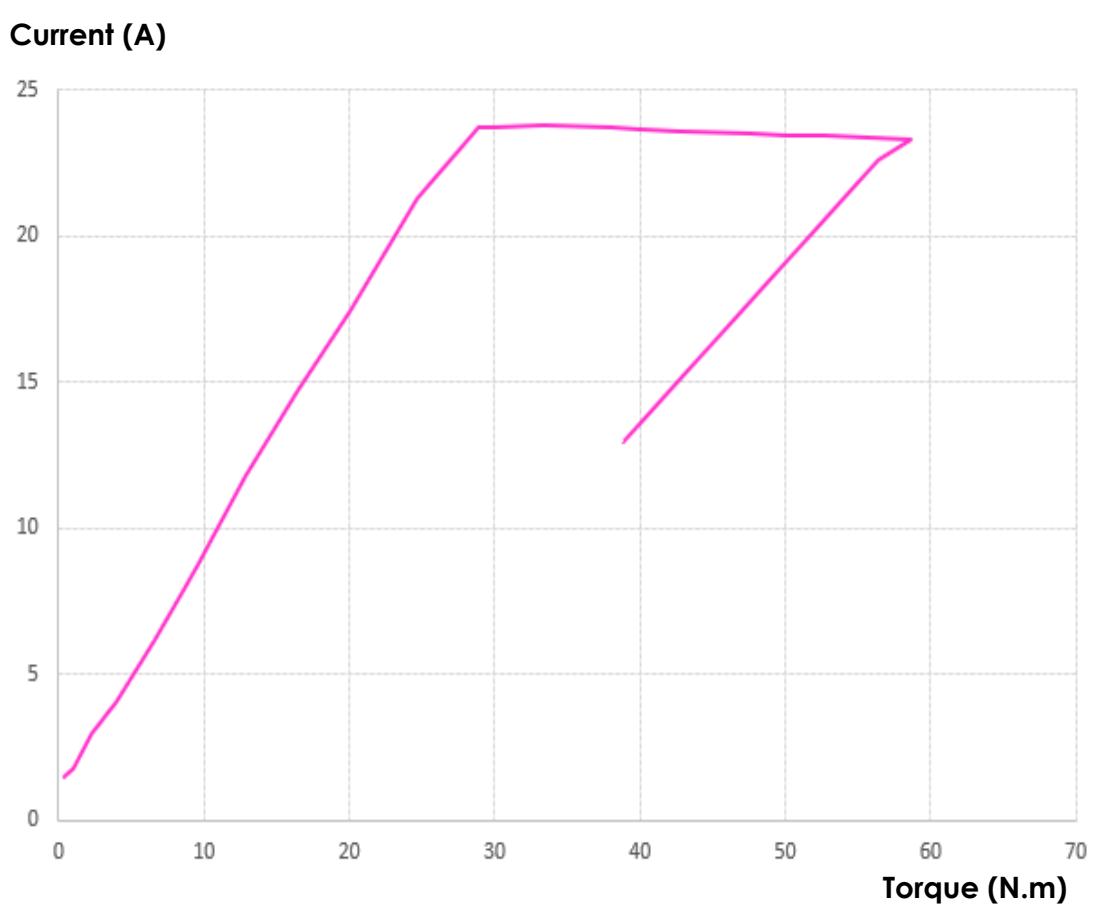
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

**Output Power (W)
vs Torque (N.m)**

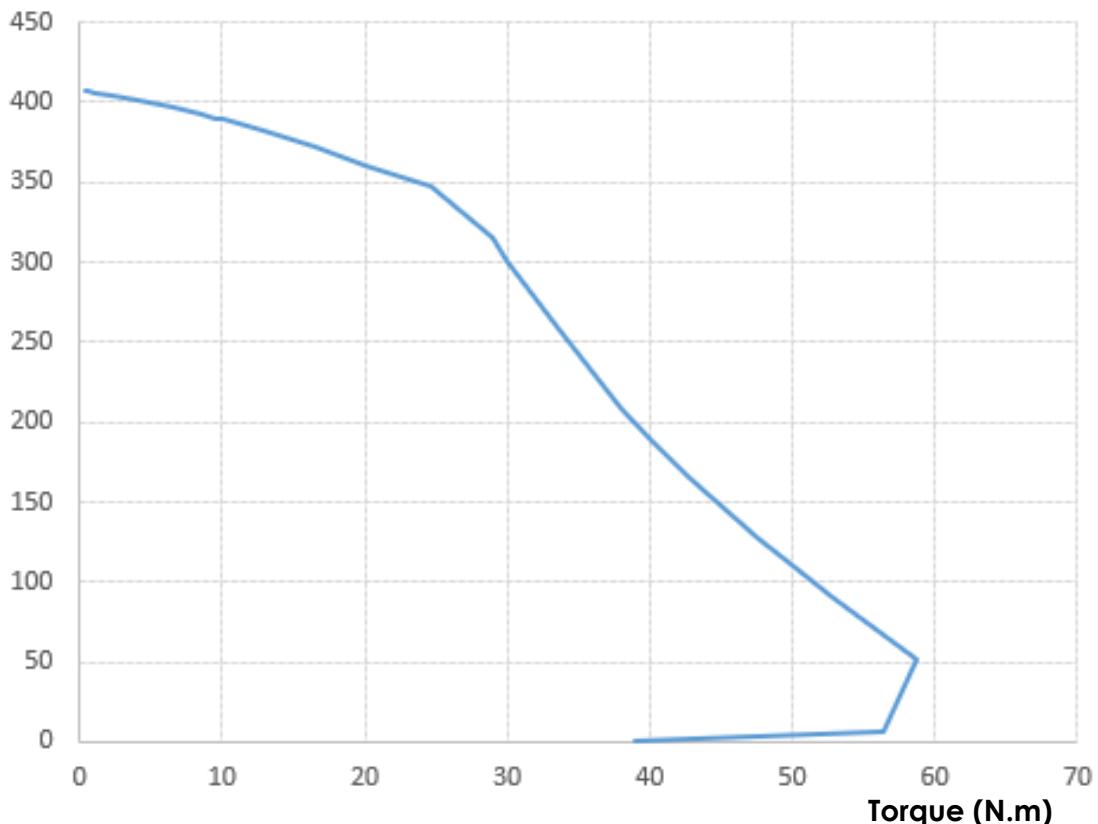


**Current (A)
vs Torque (N.m)**



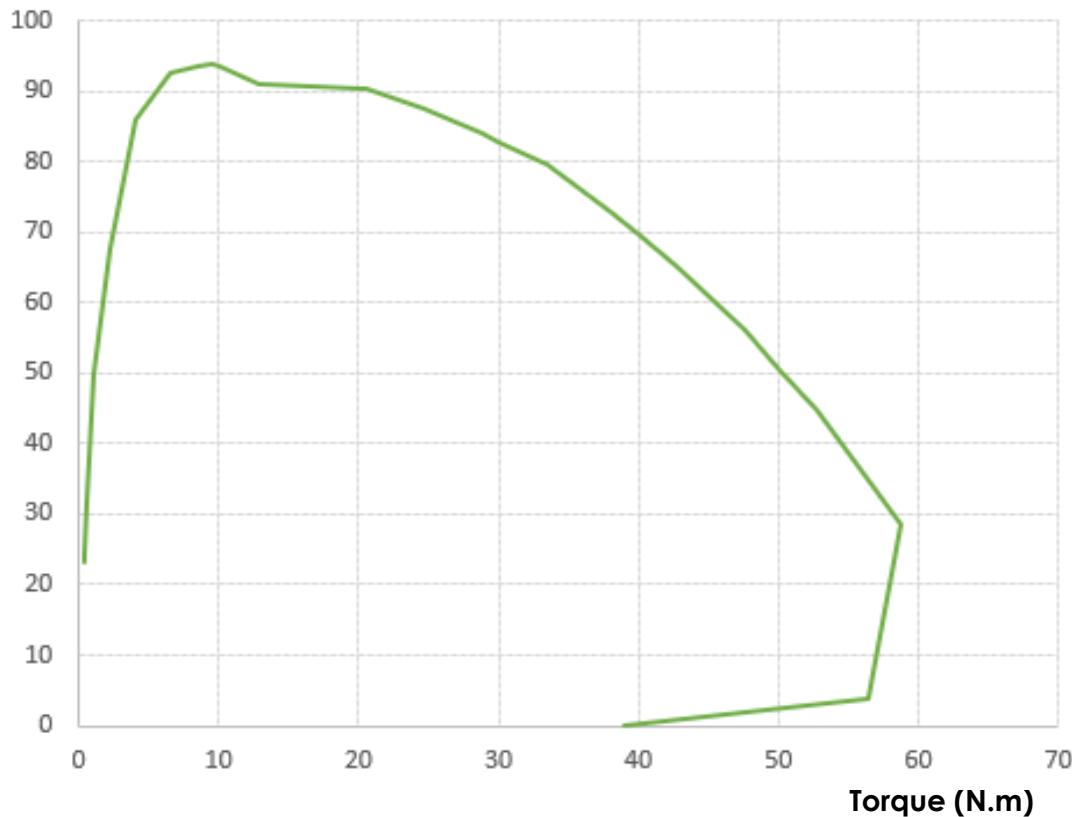
**Speed (rpm)
vs Torque (N.m)**

Speed (rpm)

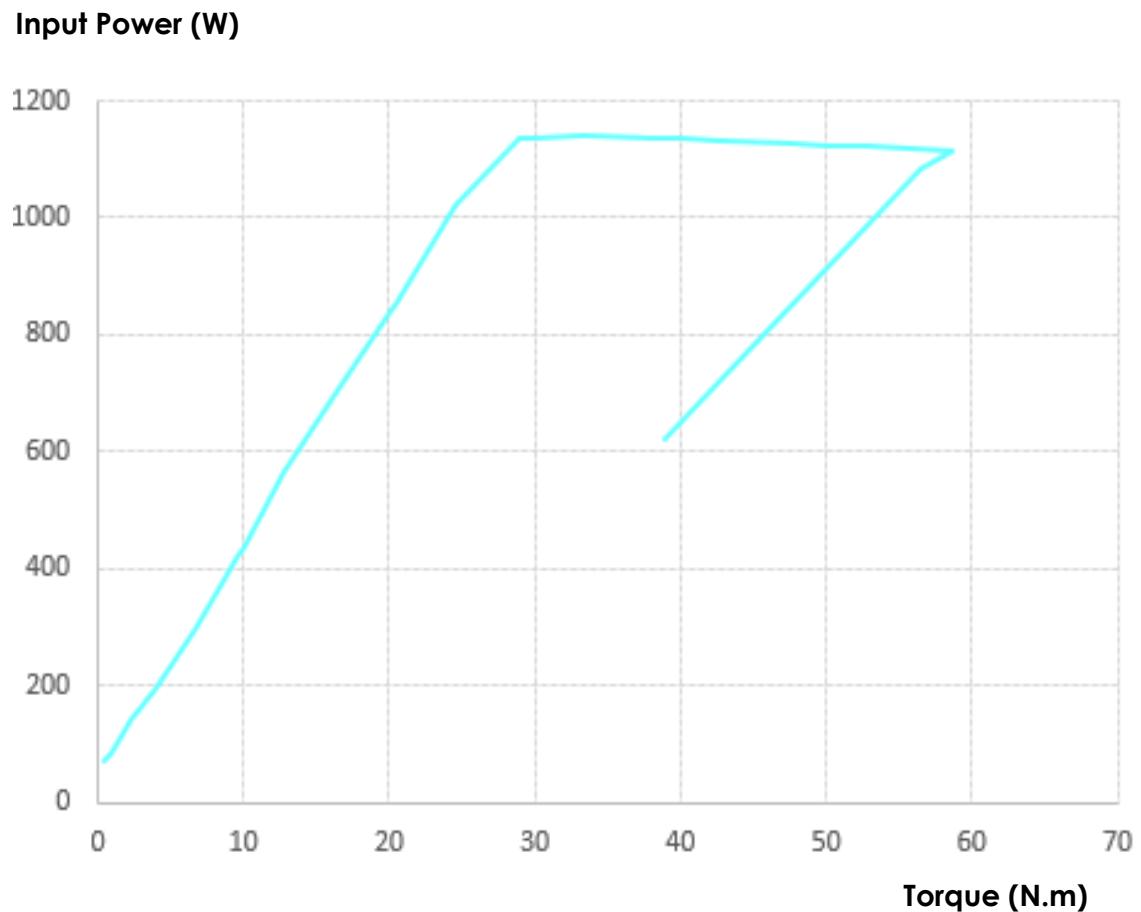


**Efficiency (%)
vs Torque (N.m)**

Efficiency (%)



**Input Power (W)
vs Torque (N.m)**



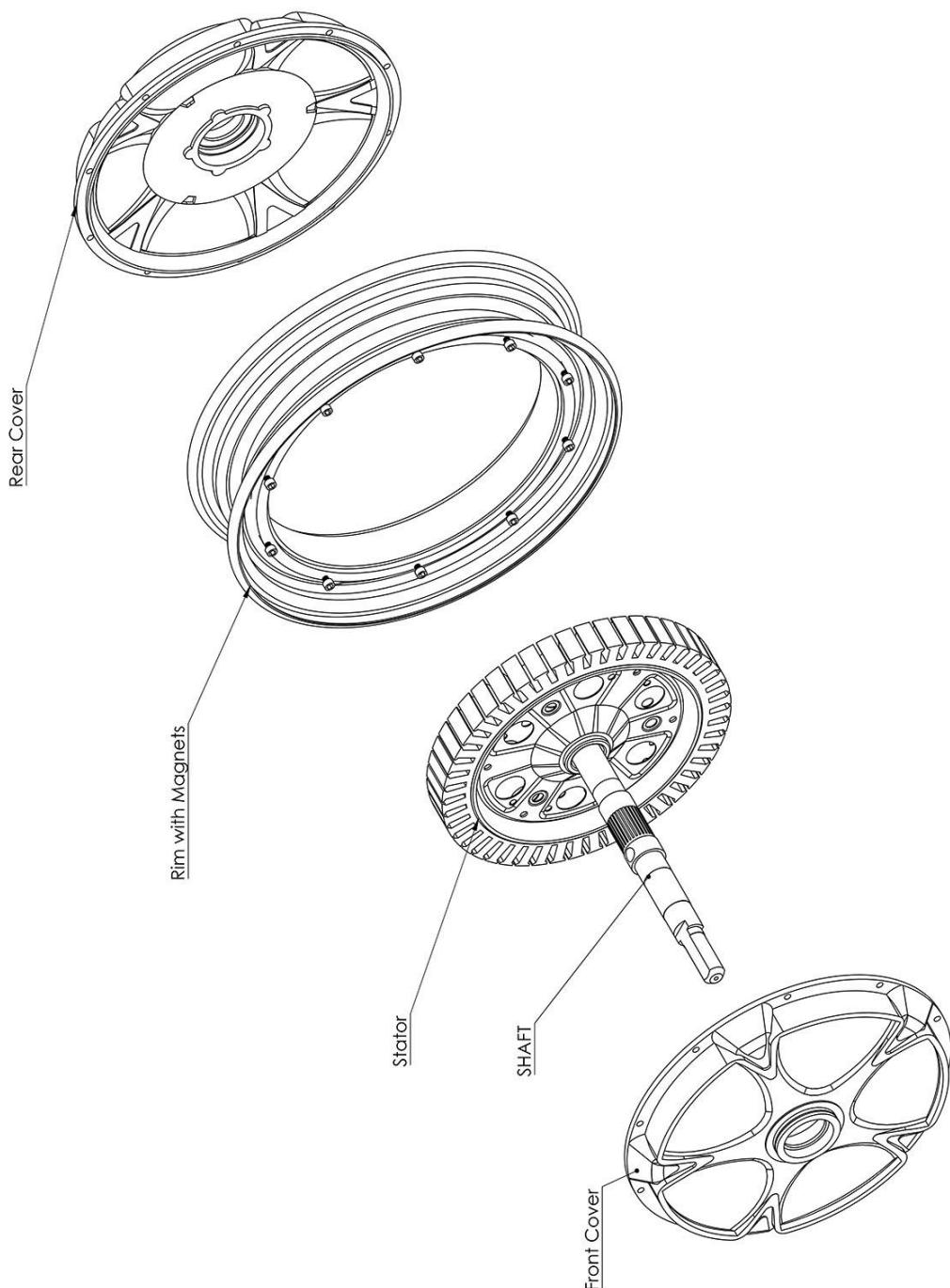
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	47.954	1.4518	69.620	0.4	407.5	16.723	24.0	1.2030
2	47.952	1.5108	72.443	0.5	407.3	22.794	31.5	2.4060
3	47.933	1.7876	85.686	1.0	405.9	42.625	49.7	3.6090
4	47.906	2.9160	139.69	2.2	404.3	94.579	67.7	4.7810
5	47.937	4.0360	193.47	4.0	401.6	166.51	86.1	6.0000
6	47.959	6.1906	296.89	6.6	397.2	275.10	92.7	7.1880
7	47.960	7.7967	373.93	8.5	392.6	350.00	93.5	7.9606
8	47.960	8.7226	418.34	9.6	390.0	393.18	94.0	8.4060
9	47.960	9.1014	436.50	10.0	389.0	408.13	93.6	8.5564
10	47.957	11.753	563.64	12.8	382.0	512.75	91.0	9.6090
11	47.954	14.708	705.32	16.5	371.6	640.22	90.8	10.797
12	47.952	17.444	836.47	20.0	361.2	755.43	90.4	11.850
13	47.952	17.835	855.20	20.5	359.7	771.89	90.3	12.000
14	47.947	21.281	1020.4	24.6	347.2	893.23	87.5	13.203
15	47.944	23.699	1136.2	28.9	314.9	953.41	83.9	14.406
16	47.944	23.719	1137.2	30.0	301.5	942.46	82.9	14.696
17	47.943	23.782	1140.2	33.4	259.9	908.60	79.7	15.594
18	47.944	23.715	1137.0	38.0	208.7	831.41	73.1	16.781
19	47.945	23.666	1134.7	40.0	190.1	791.69	69.7	17.293
20	47.947	23.600	1131.6	42.7	165.1	738.07	65.2	17.984
21	47.950	23.480	1125.8	47.6	126.7	631.03	56.0	19.203
22	47.950	23.445	1124.2	50.0	109.9	569.94	50.7	19.769
23	47.951	23.406	1122.4	52.7	90.9	501.22	44.7	20.406
24	47.955	23.276	1116.2	58.7	51.9	318.47	28.5	21.609
25	47.958	22.605	1084.1	56.4	6.9	40.753	3.8	22.797
26	47.966	12.959	621.57	38.9	0.0	0.0000	0.0	24.000

Specifications

Rated Power (Watts)	350
Rated Torque (N.m)	8.5
Peak Torque (N.m)	58
Operating Voltage (Volts)	48
Rated Current (A)	8
Peak Current (A)	23
Rated RPM	400

Exploded View



Isometric View



Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

Our drive can be installed in the front or rear wheel and the shaft can be modified to the design needs of the customer for specific application needs. This lowers manufacturing costs and gives our customers the highest possible flexibility in product design. Our warranty options also deliver after sales services and enable overall customer satisfaction.

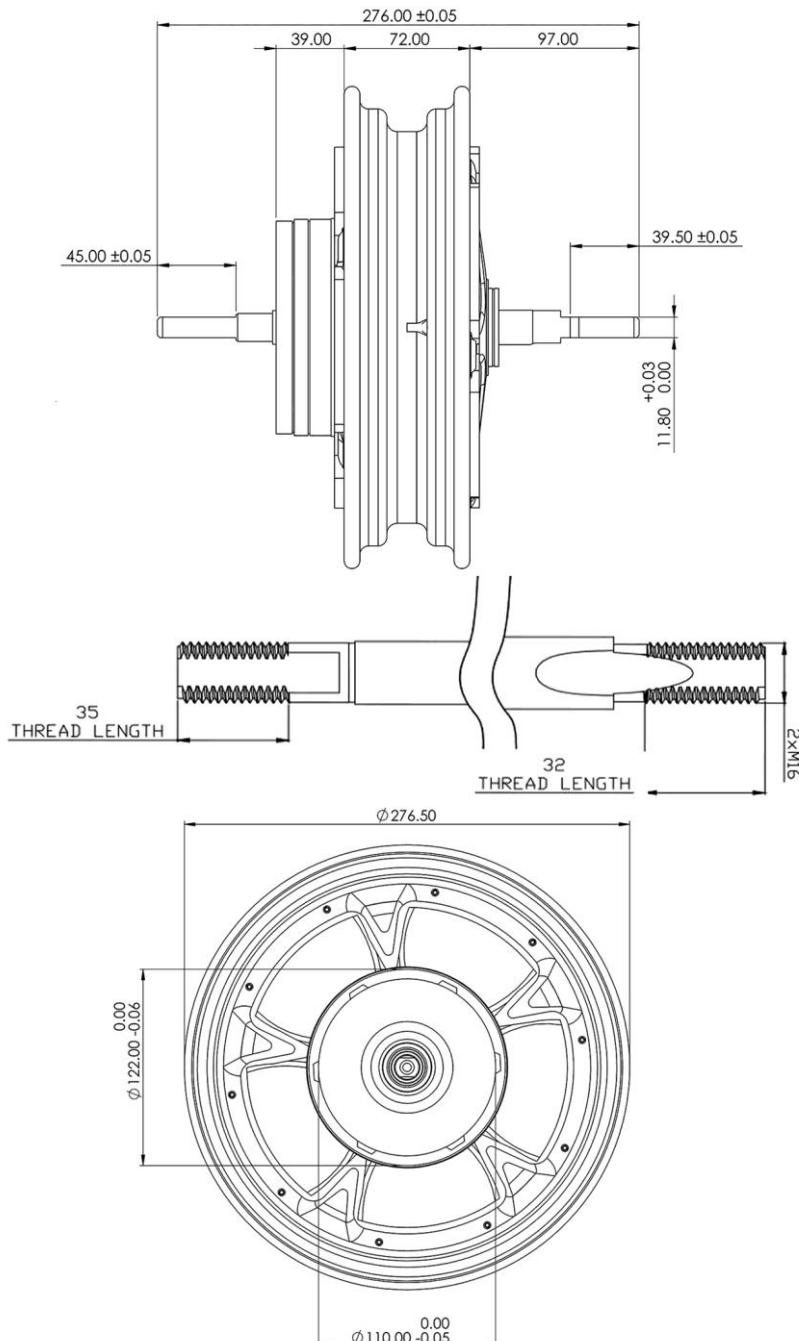
Product Features

- Rear wheel drive
- Low speed Motors support up to 40 km/h*
- Nominal output up to 550 W*
- 11 Nm nominal and 60 Nm peak torque
- Weight: 8.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

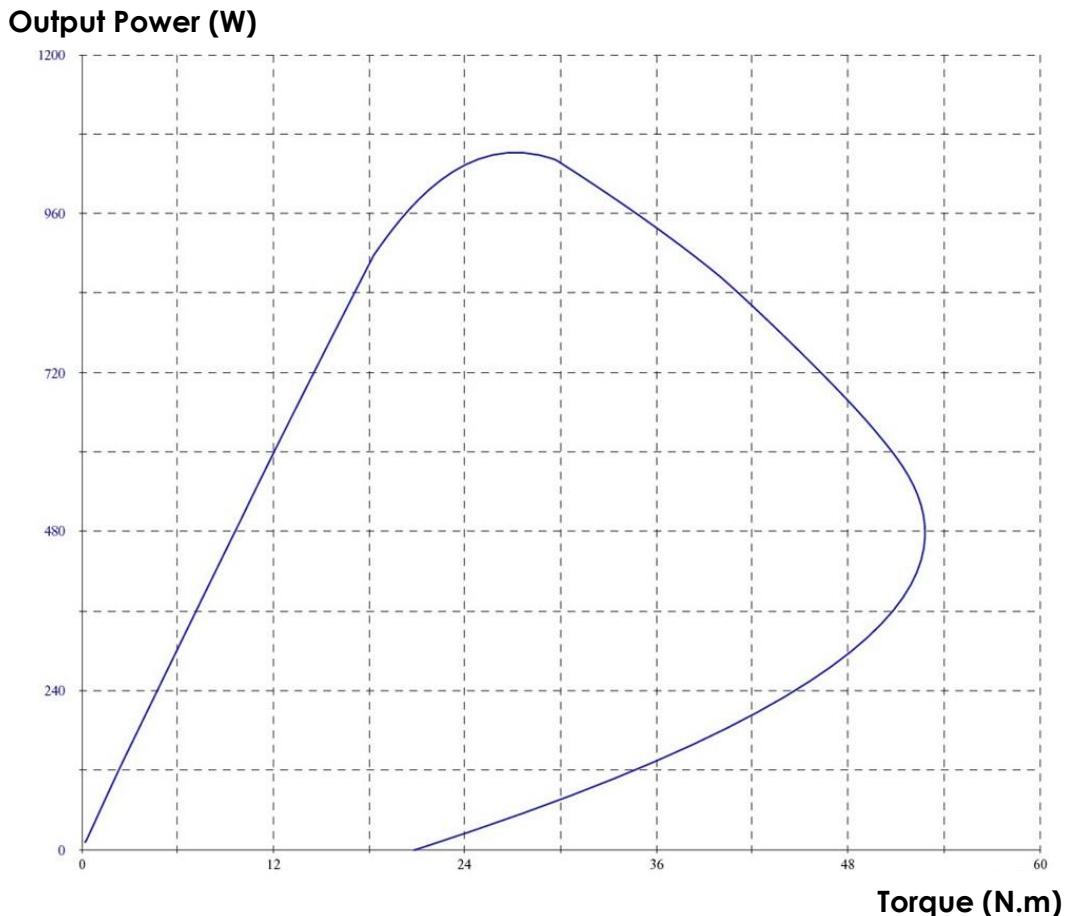
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

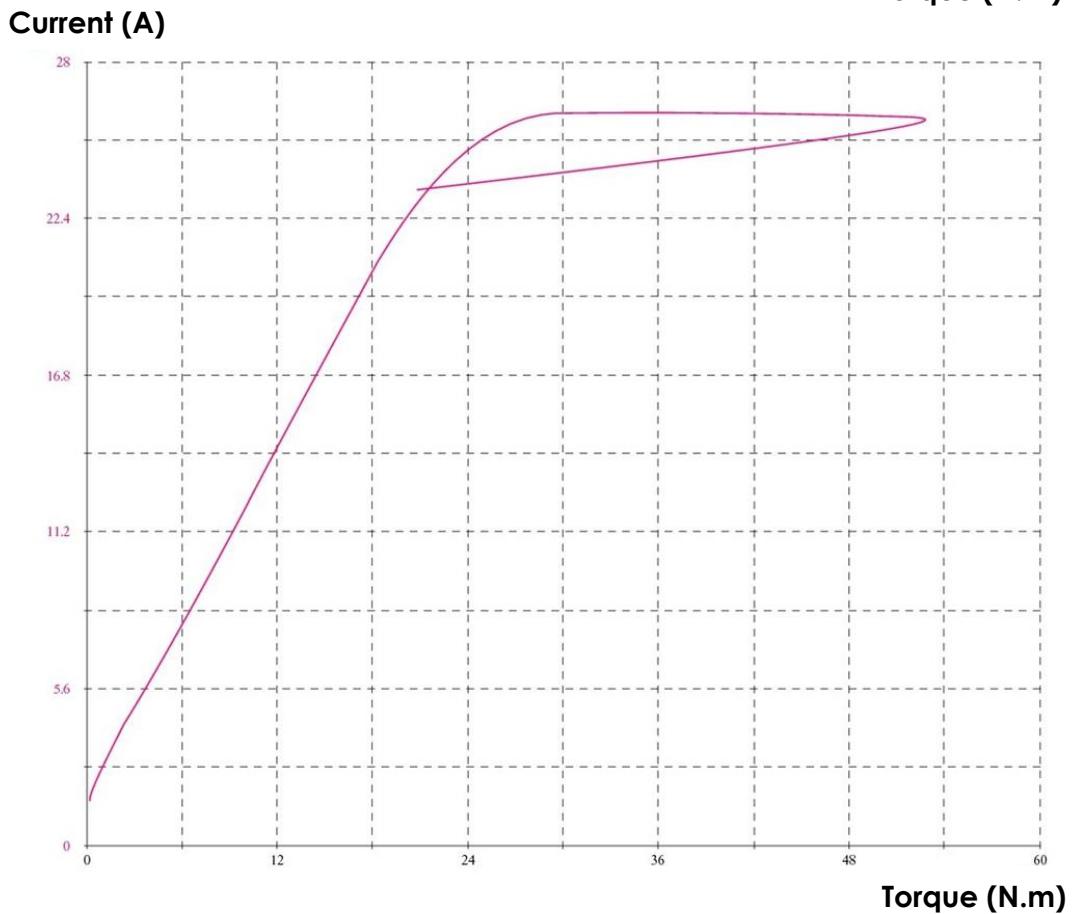
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

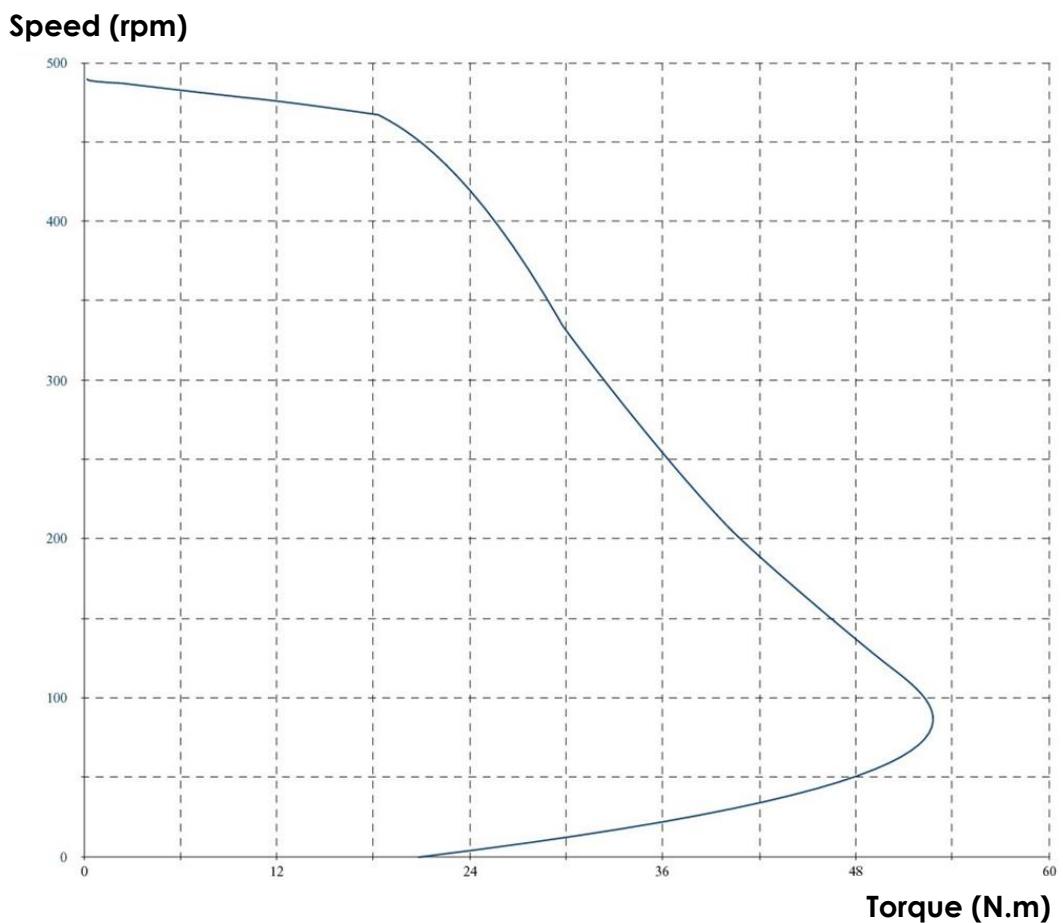
**Output Power (W)
vs Torque (N.m)**



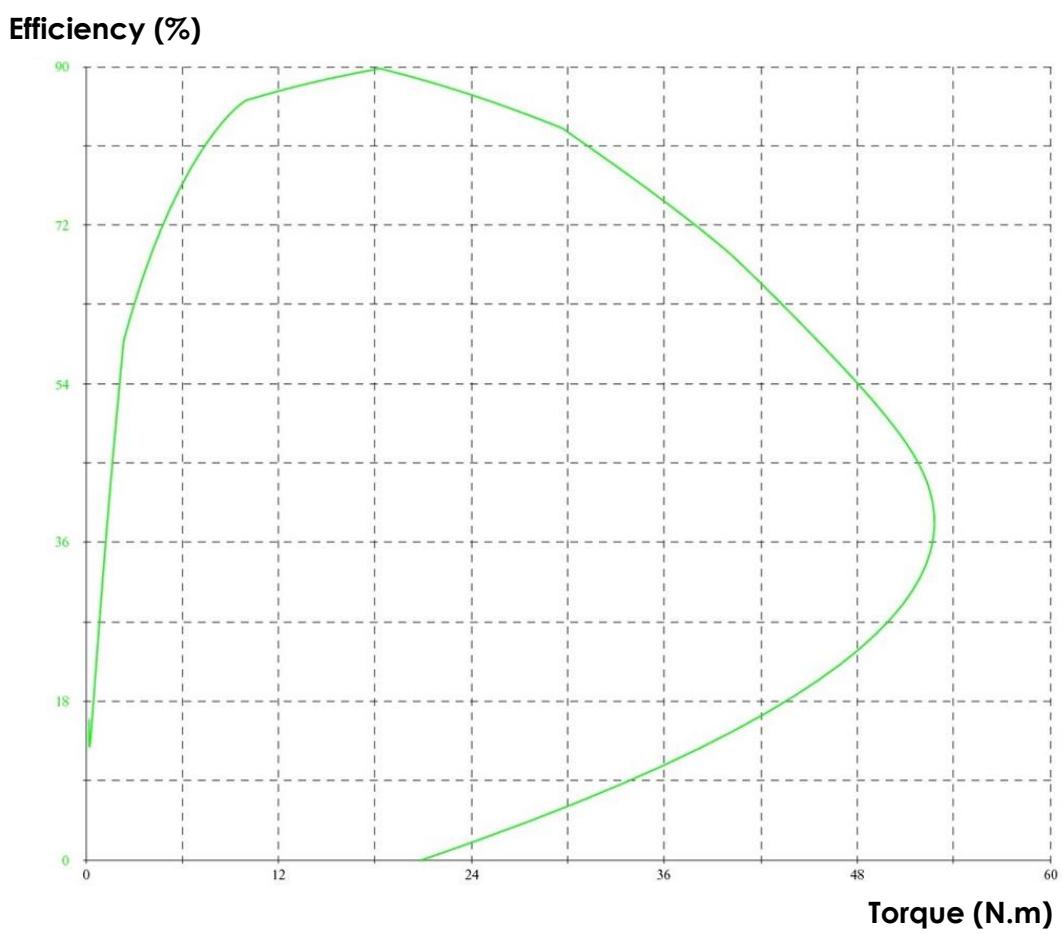
**Current (A)
vs Torque (N.m)**



**Speed (rpm)
vs Torque (N.m)**

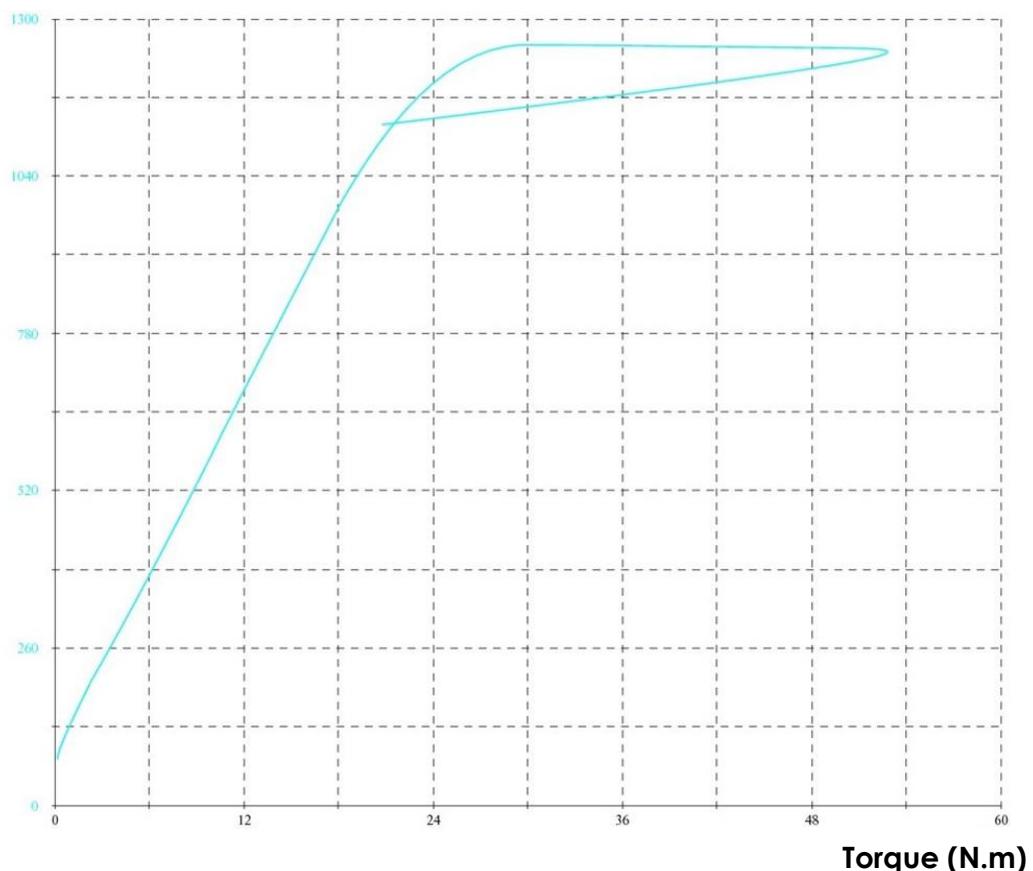


**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**

Input Power (W)



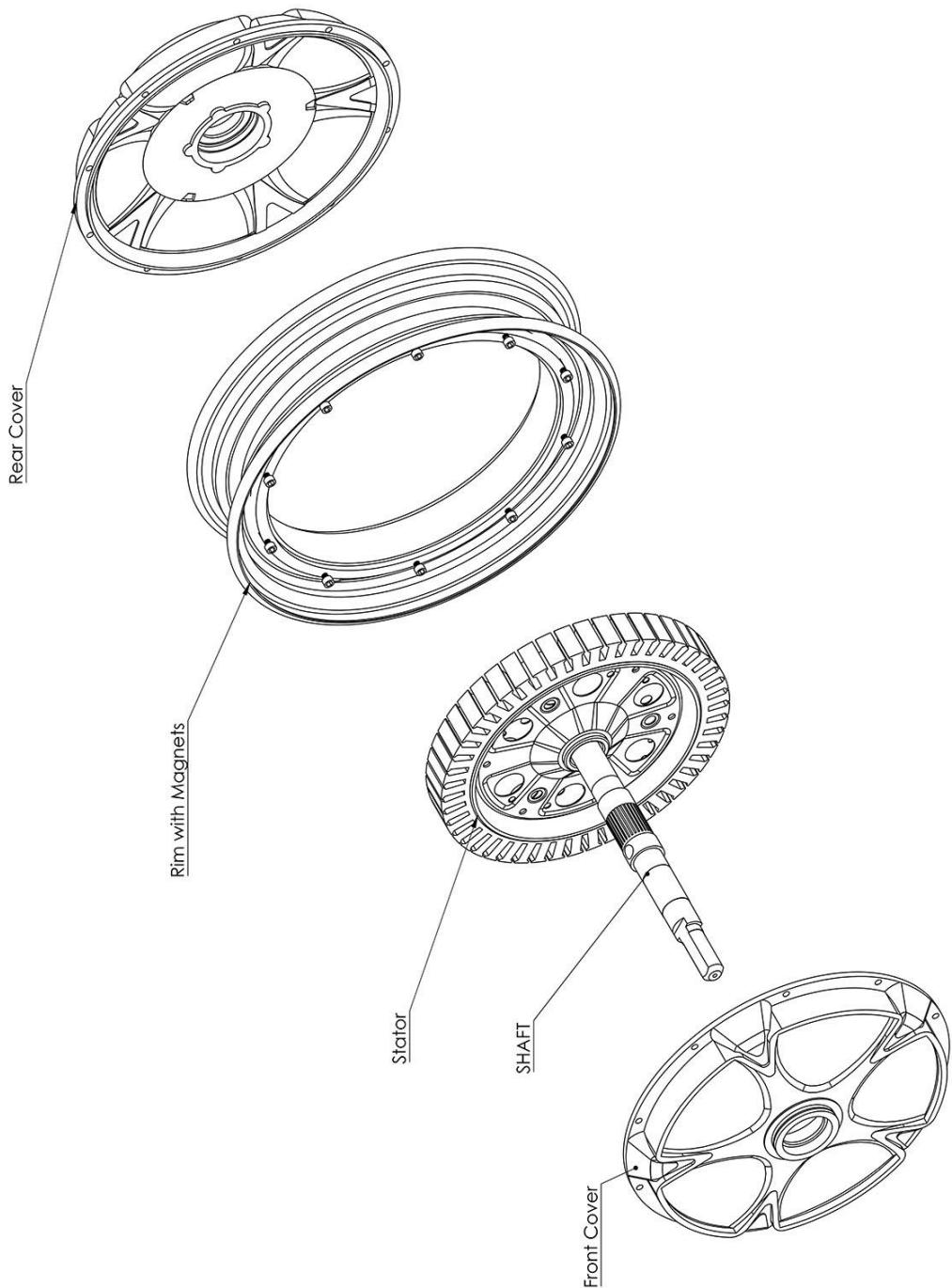
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	47.998	1.5991	76.753	0.2	489.2	12.09	15.8	0
2	47.986	1.7438	83.681	0.1	488.9	3.6939	4.4	2.984
3	47.962	2.3775	114.03	0.6	487.6	28.932	25.4	6
4	47.985	4.3405	208.28	2.4	487.3	122.42	58.8	8.984
5	48.013	7.0319	337.62	5.3	482.9	266.72	79	11.984
6	48.011	11.201	537.78	9.2	479.1	460.41	85.6	15
7	48.011	12.081	580.02	10	478.1	500.23	86.1	15.58
8	48.011	13.18	632.81	11	476.8	550	86.7	16.304
9	48.01	15.729	755.17	13.4	473.9	665.35	88.1	17.984
10	48.009	20.82	999.54	18.3	467.4	896.46	89.7	21
11	48.009	22.402	1075.5	20	458	955.23	89	21.89
12	48.008	26.126	1254.3	24	435.9	1093.5	87.2	23.984
13	48.007	26.173	1256.5	29.7	334.9	1041	82.9	26.984
14	48.007	26.174	1256.5	30	330.9	1036.5	82.5	27.132
15	48.008	26.192	1257.4	35.8	253	948.79	75.5	30
16	48.008	26.149	1255.3	40	208.3	863.93	68.9	32.1
17	48.008	26.13	1254.4	41.8	189.1	827.56	66	33
18	48.009	26.082	1252.2	47.9	136.8	685.81	54.8	35.984
19	48.009	26.061	1251.2	50	120.7	624.77	49.9	37.017
20	48.008	26.022	1249.3	54	90	508.49	40.7	38.984
21	48.008	25.98	1247.2	59.6	47.9	299.15	24	41.984
22	48.011	23.418	1124.3	20.8	0	0	0	45

Specifications

Rated Power (Watts)	550
Rated Torque (N.m)	11
Peak Torque (N.m)	60
Operating Voltage (Volts)	48
Rated Current (A)	13
Peak Current (A)	26
Rated RPM	475

Exploded View



Isometric View



Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

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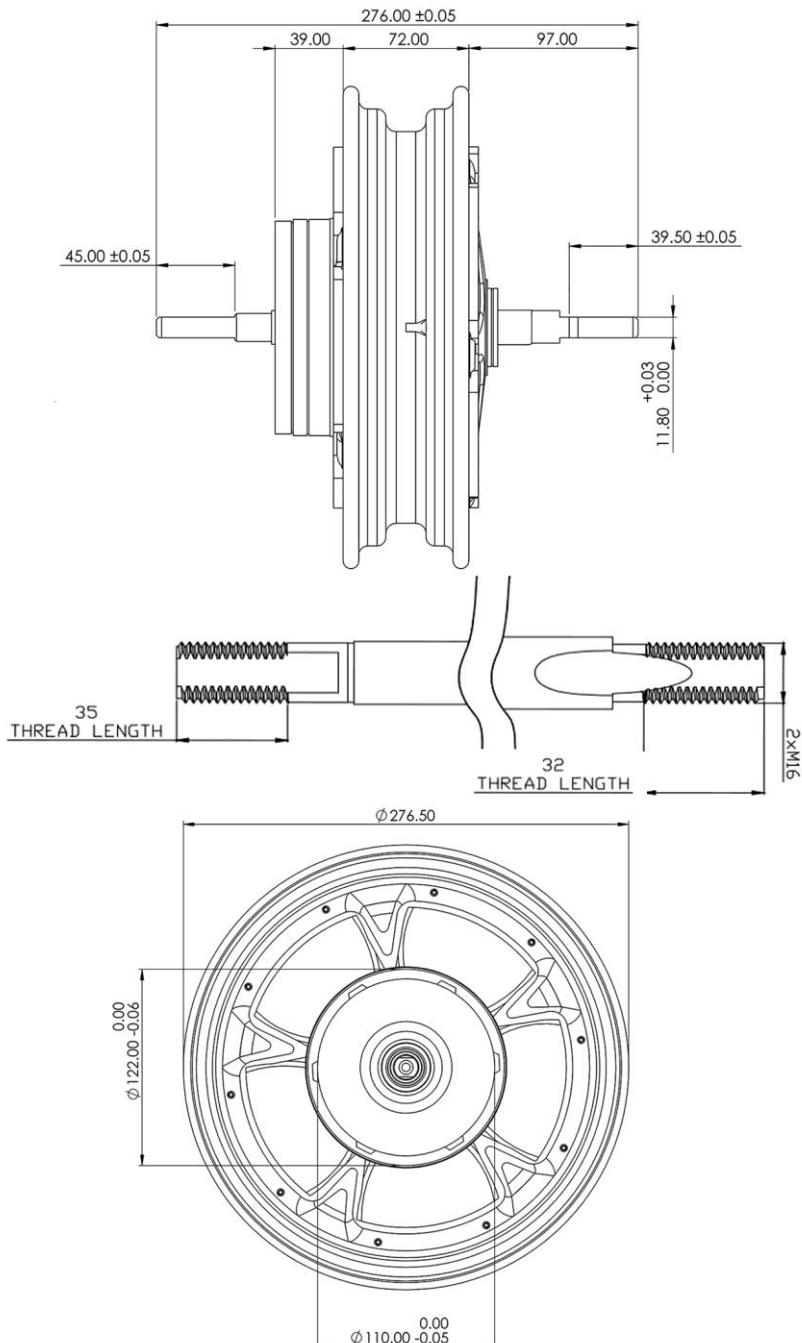
Product Features

- Rear wheel drive
- Low speed Motors support up to 40 km/h*
- Nominal output up to 850 W*
- 15.5 Nm nominal and 66 Nm peak torque
- Weight: 8.5 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

Brake Size: 110mm

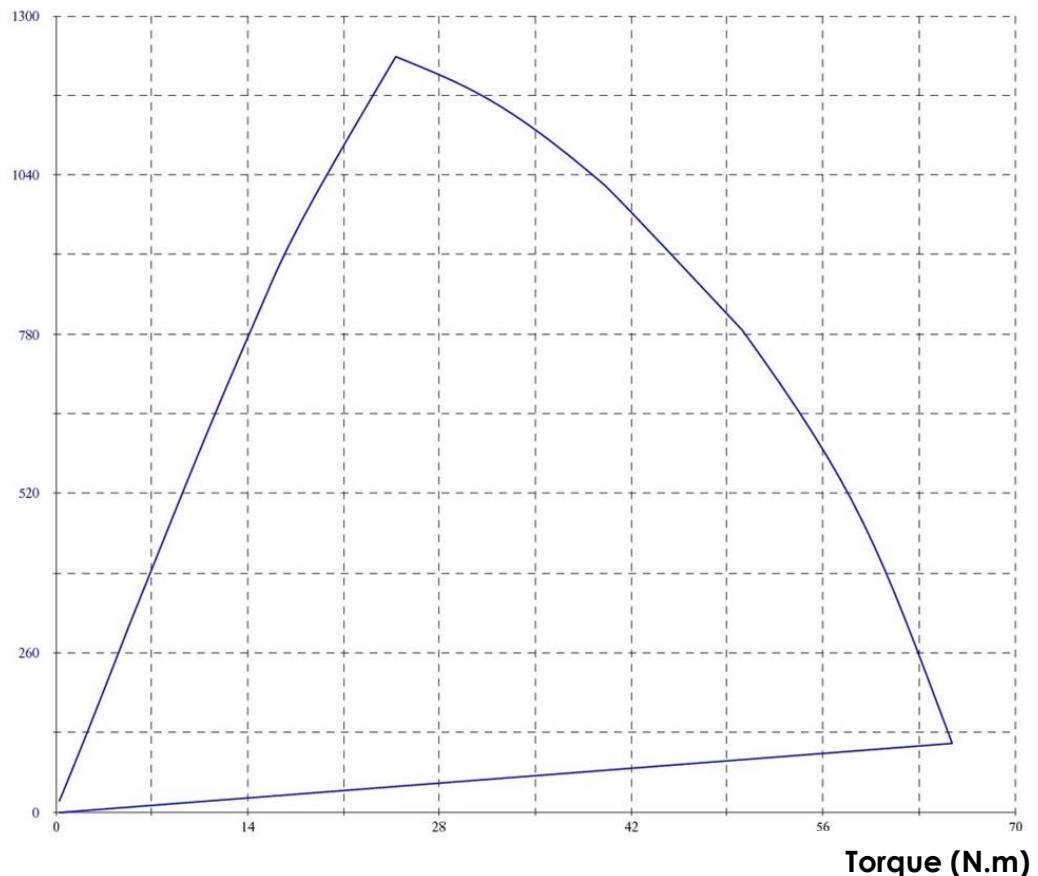
Brake Type: Regular Brakes (shoe type)

Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

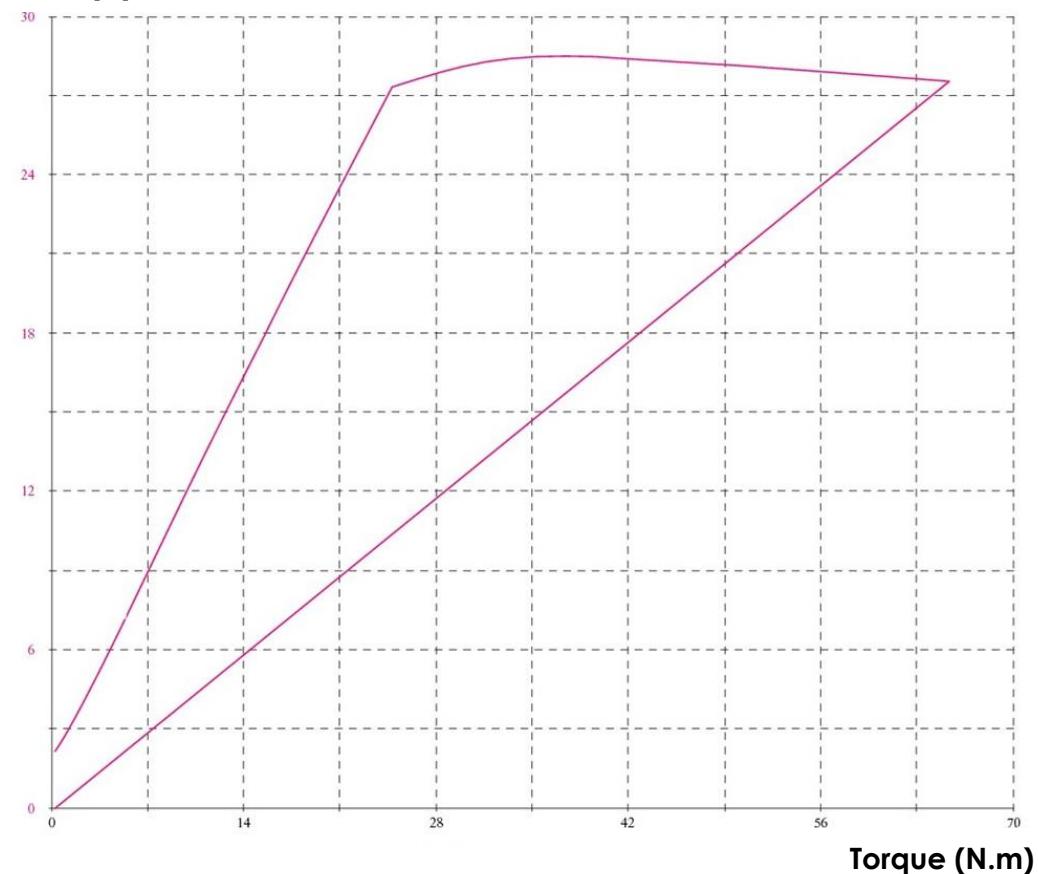
**Output Power (W)
vs Torque (N.m)**

Output Power (W)

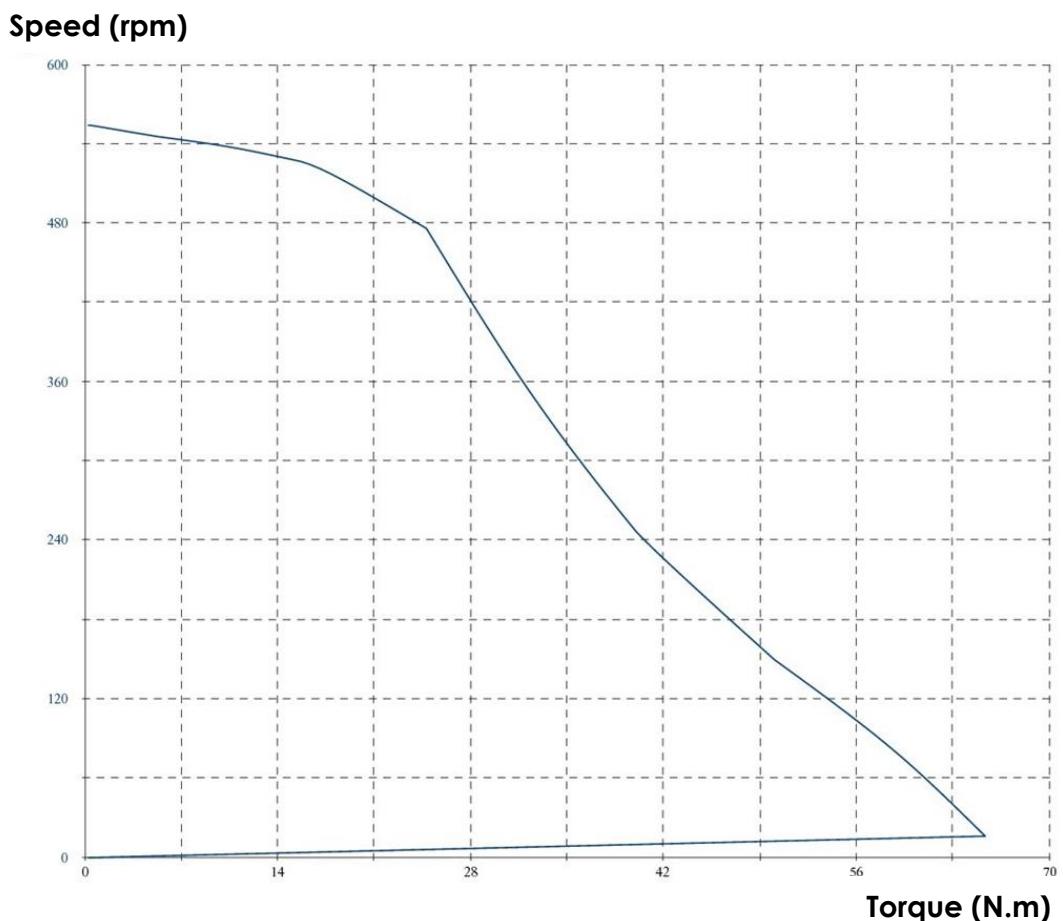


**Current (A)
vs Torque (N.m)**

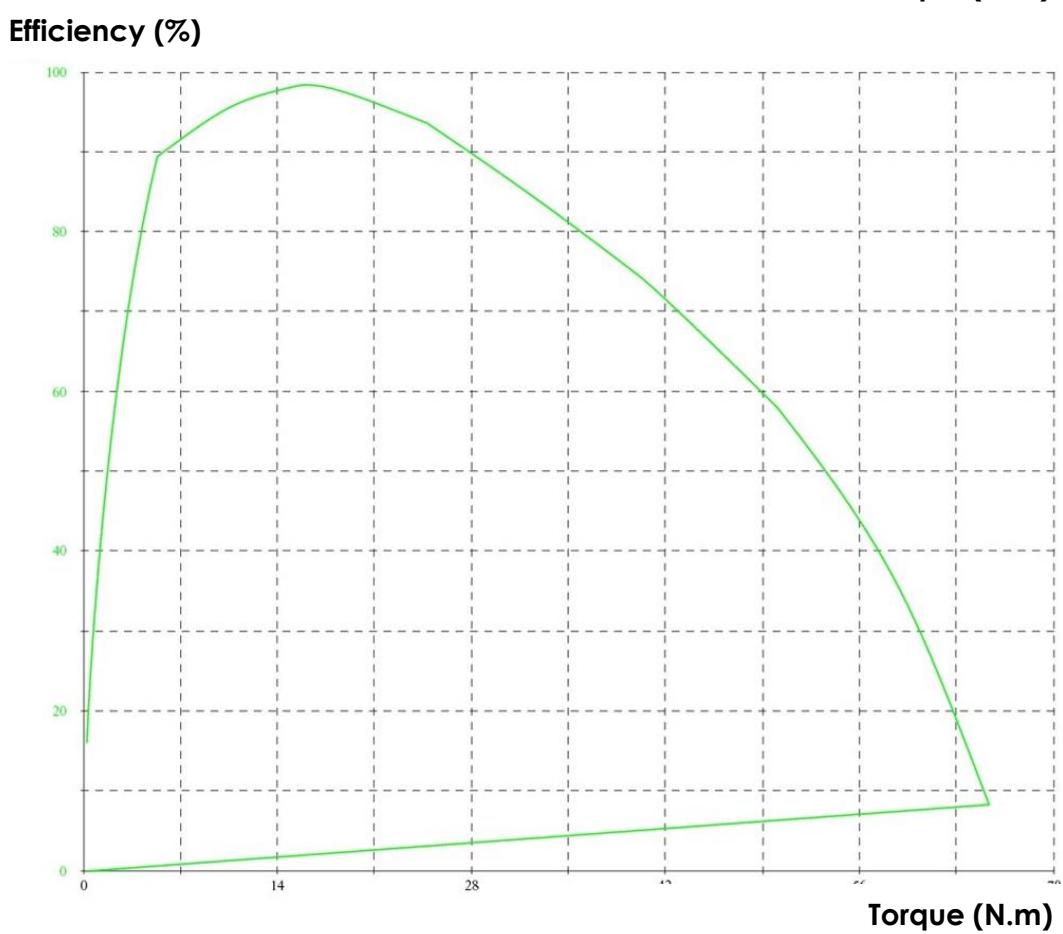
Current (A)



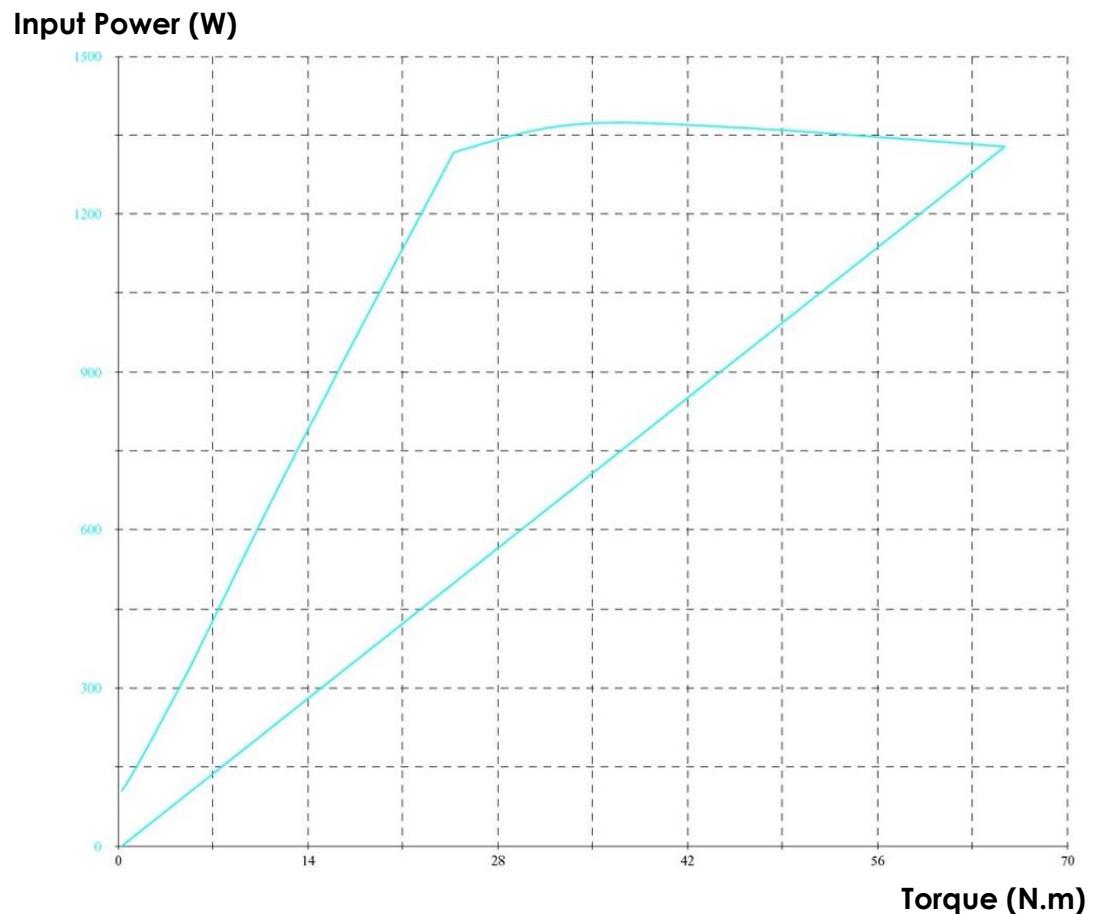
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



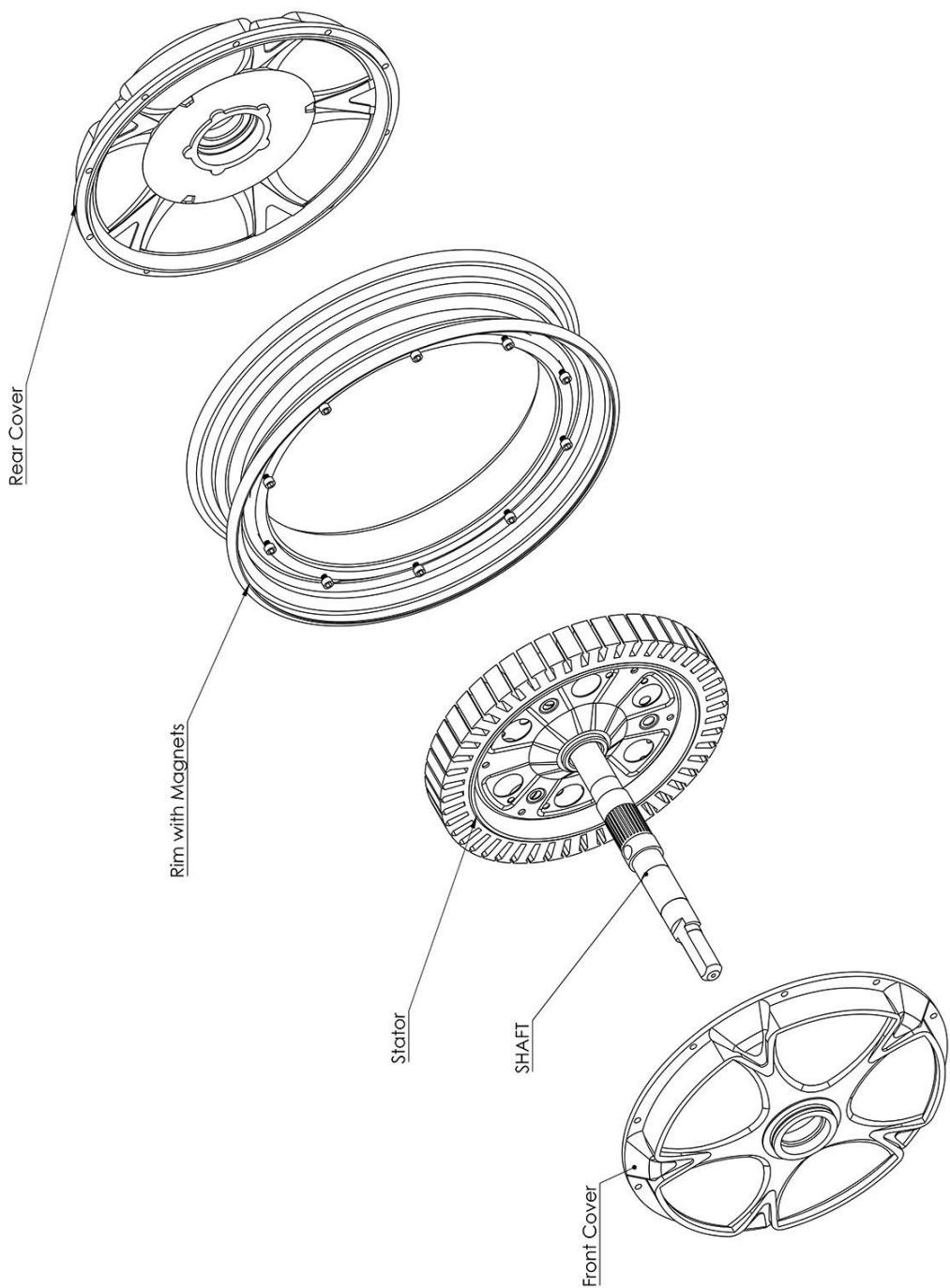
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	48.245	2.1439	103.43	0.3	554.2	16.589	16	0
2	48.235	2.3018	111.03	0.6	553.7	33.046	29.8	3
3	48.243	3.6782	177.45	2.1	551	118.71	66.9	5.985
4	48.25	7.133	344.17	5.4	545.6	307.62	89.4	8.985
5	48.253	12.173	587.38	10	538.8	563.26	95.4	11.553
6	48.254	13.049	629.68	10.8	537.6	607.72	96.5	12
7	48.253	17.922	864.76	15.5	526.7	850	98.2	14.143
8	48.252	19.836	957.11	17.3	522.4	945.18	98.8	14.985
9	48.252	22.528	1087	20	505.5	1048.5	96.9	16.065
10	48.252	27.314	1317.9	24.8	475.5	1232.2	93.5	17.985
11	48.251	28.16	1358.7	30	386.5	1186.2	87.4	19.935
12	48.25	28.615	1380.7	32.8	338.5	1161.4	84.1	20.985
13	48.251	28.434	1372	40	247.3	1023.5	74.6	23.539
14	48.251	28.401	1370.4	41.3	230.8	998.61	72.9	24
15	48.25	28.136	1357.5	50	150.6	787.97	58.1	26.966
16	48.25	28.133	1357.4	50.1	149.7	785.55	57.9	27
17	48.251	27.792	1341	58.6	85.4	523.79	39.1	29.985
18	48.251	27.738	1338.4	60	71.2	438.71	32.8	30.606
19	48.25	27.529	1328.3	65.4	16.2	110.52	8.3	33
20	48.317	0	0	0.3	0	0	0	35.985

Specifications

Rated Power (Watts)	850
Rated Torque (N.m)	15.5
Peak Torque (N.m)	66
Operating Voltage (Volts)	48
Rated Current (A)	17
Peak Current (A)	28
Rated RPM	520

Exploded View



Isometric View



Product Description

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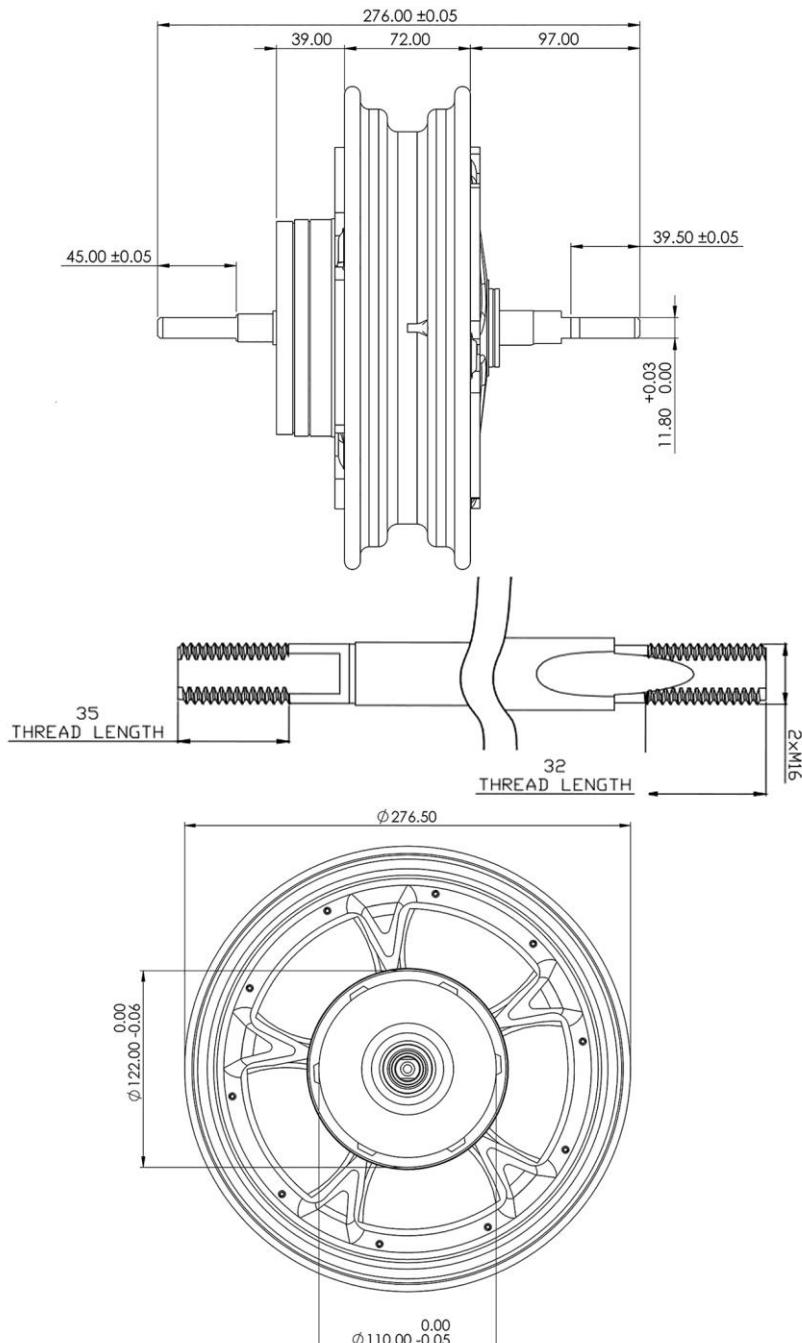
Product Features

- Rear wheel drive
- Low speed Motors support up to 40 km/h*
- Nominal output up to 1000 W*
- 19 Nm nominal and 83 Nm peak torque
- Weight: 8.5 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

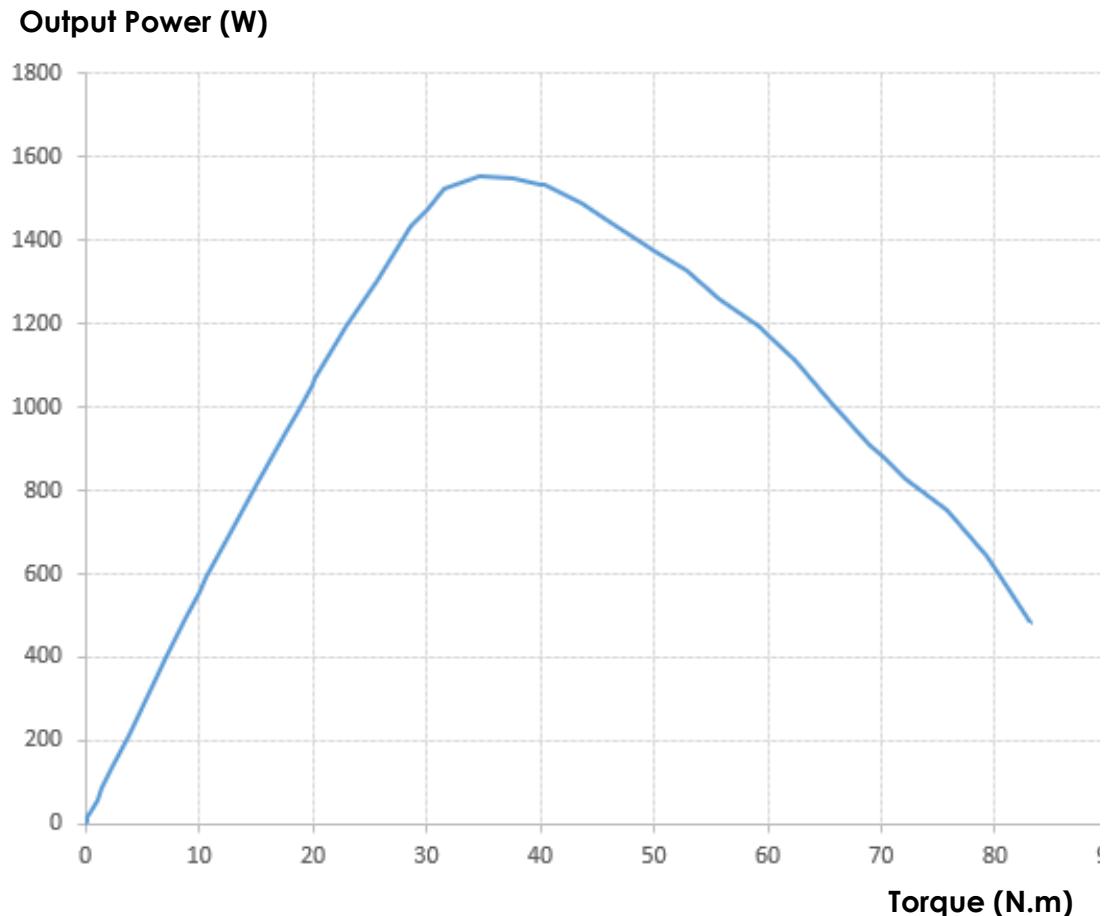
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

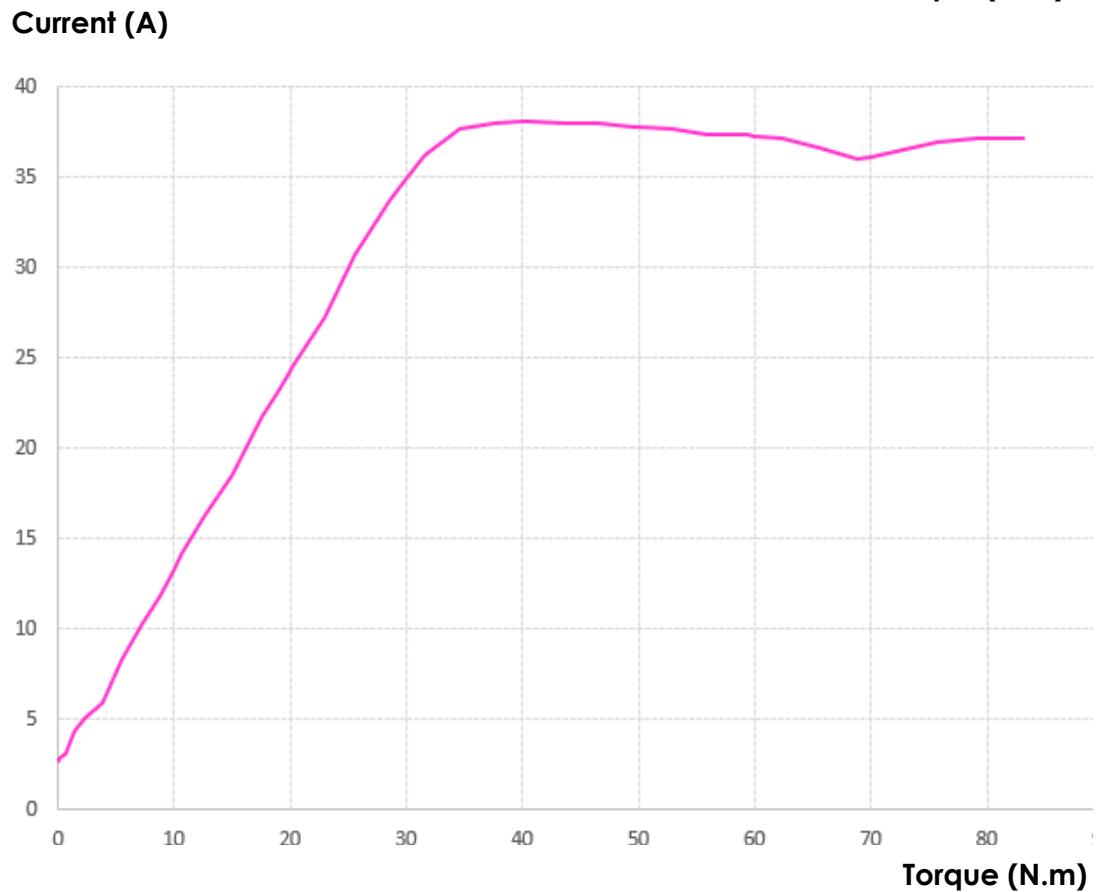
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

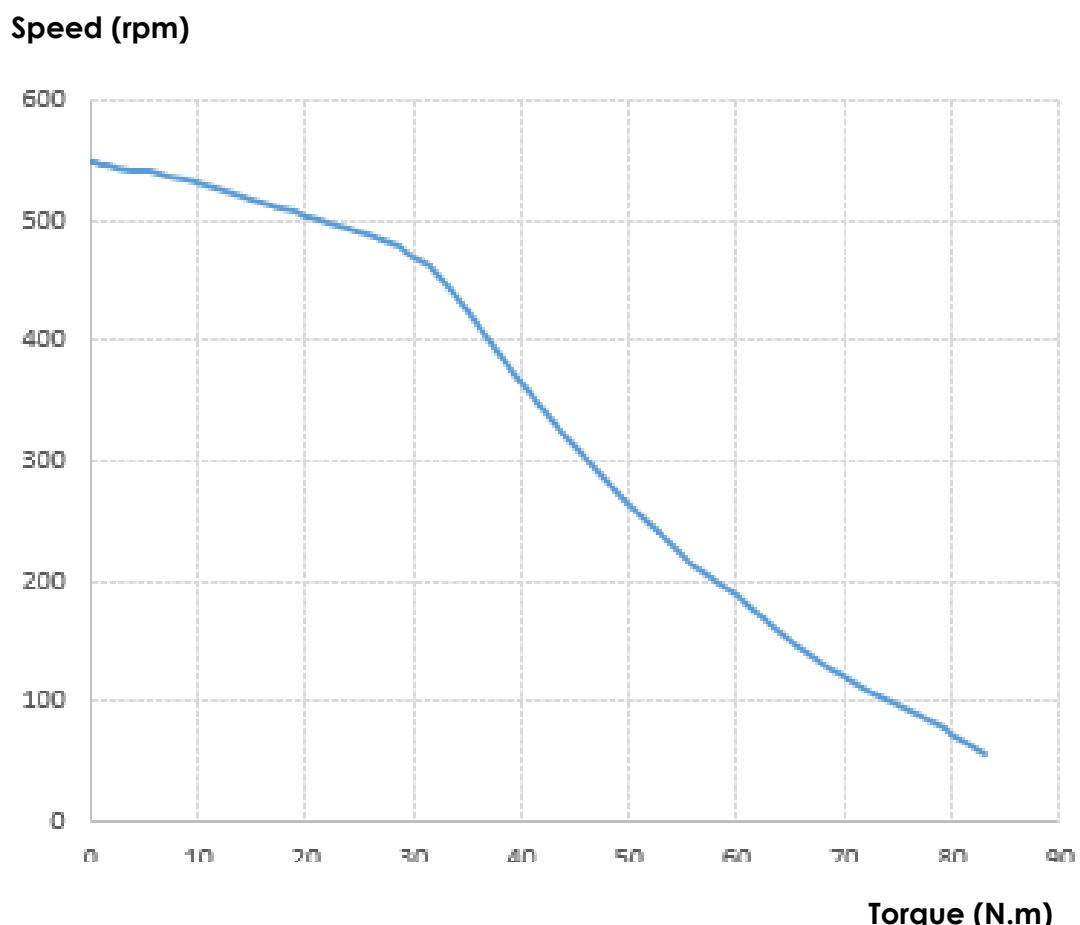
**Output Power (W)
vs Torque (N.m)**



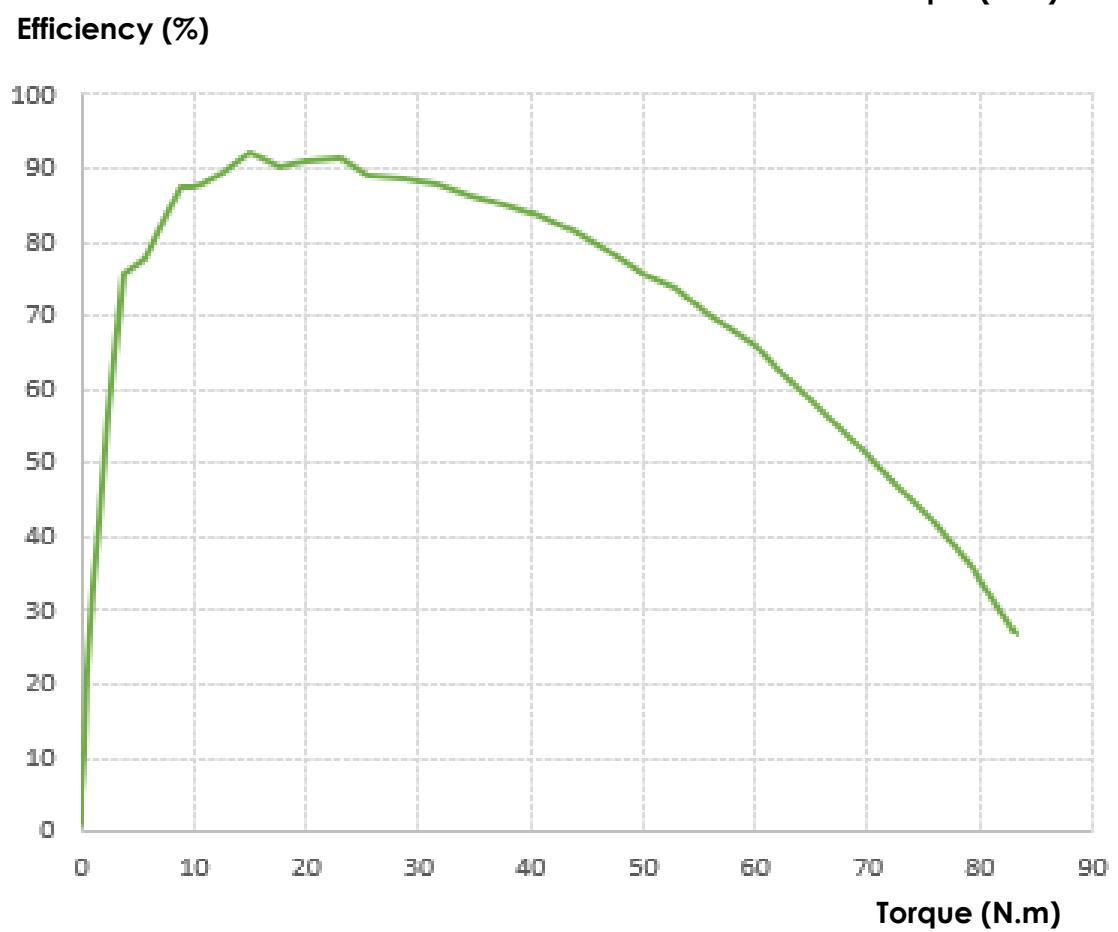
**Current (A)
vs Torque (N.m)**



**Speed (rpm)
vs Torque (N.m)**

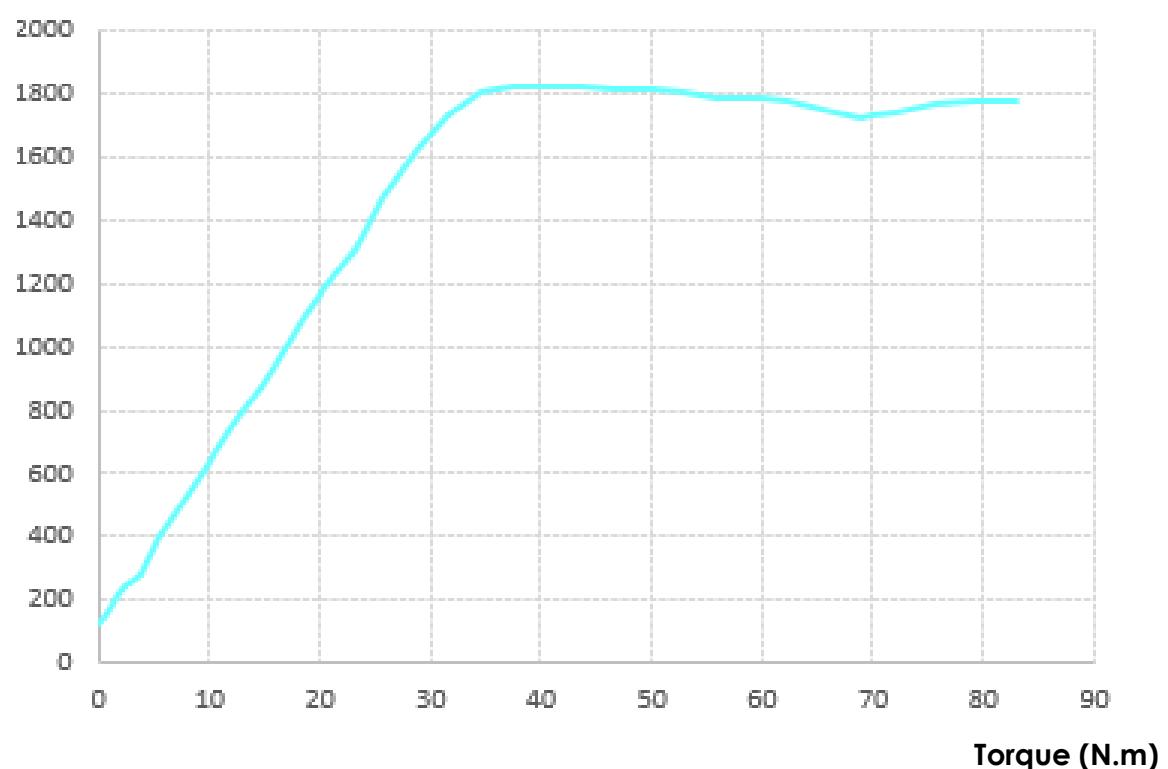


**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**

Input Power (W)



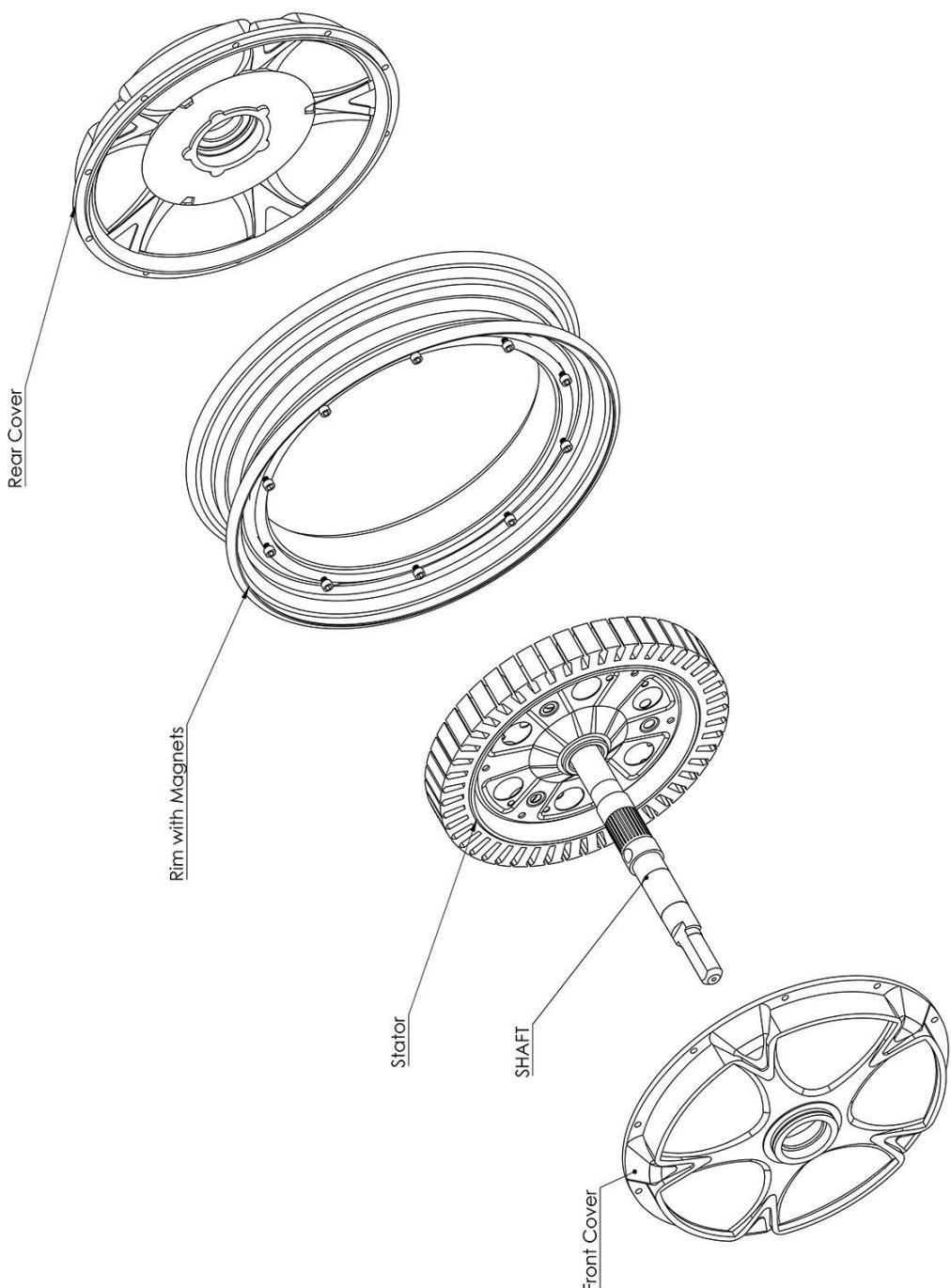
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	47.955	2.6867	128.84	0.1	547.6	6.0297	4.7	2.3910
2	47.974	3.6052	172.96	1.0	546.6	57.650	33.3	4.7810
3	47.989	5.0169	240.76	2.4	544.4	135.93	56.5	6.3750
4	47.996	5.8821	282.32	3.8	541.8	214.24	75.9	7.1720
5	47.996	8.2729	397.07	5.5	540.7	308.61	77.7	7.9850
6	47.997	10.101	484.80	7.1	537.3	400.83	82.7	8.7810
7	47.998	11.773	565.09	8.8	533.7	494.01	87.4	9.5940
8	47.996	14.101	676.79	10.7	529.4	593.47	87.7	10.391
9	47.994	16.123	773.79	12.6	524.6	692.89	89.5	11.188
10	47.994	18.415	883.80	15.0	518.1	812.88	92.0	11.985
11	47.991	21.639	1038.5	17.6	510.1	937.63	90.3	12.781
12	47.991	22.991	1103.4	18.9	506.7	1000.0	90.6	13.168
13	47.989	27.188	1304.7	23.0	494.9	1193.3	91.5	14.375
14	47.988	30.583	1467.6	25.6	487.2	1306.5	89.0	15.172
15	47.983	37.563	1802.4	34.6	429.7	1555.3	86.3	17.578
16	47.986	37.914	1819.4	37.6	394.1	1550.3	85.2	18.391
17	47.983	37.950	1820.9	43.7	325.1	1487.7	81.7	19.985
18	47.987	37.897	1818.5	46.5	295.6	1440.7	79.2	20.781
19	47.989	37.761	1812.1	49.5	266.5	1381.7	76.2	21.594
20	47.984	37.286	1789.2	59.3	192.3	1194.9	66.8	23.985
21	47.984	37.238	1786.9	60.0	187.3	1175.8	65.8	24.174
22	47.986	36.542	1753.5	65.5	148.0	1015.2	57.9	25.578
23	47.986	36.084	1731.5	70.0	120.6	882.28	51.0	26.641
24	47.987	37.127	1781.6	79.3	77.3	641.55	36.0	28.781
25	47.987	37.125	1781.5	80.0	73.2	612.01	34.3	28.928
26	47.987	37.118	1781.2	83.1	55.3	481.17	27.0	29.578

Specifications

Rated Power (Watts)	1000
Rated Torque (N.m)	18
Peak Torque (N.m)	83
Operating Voltage (Volts)	48
Rated Current (A)	23
Peak Current (A)	38
Rated RPM	510

Exploded View



Isometric View



Product Description

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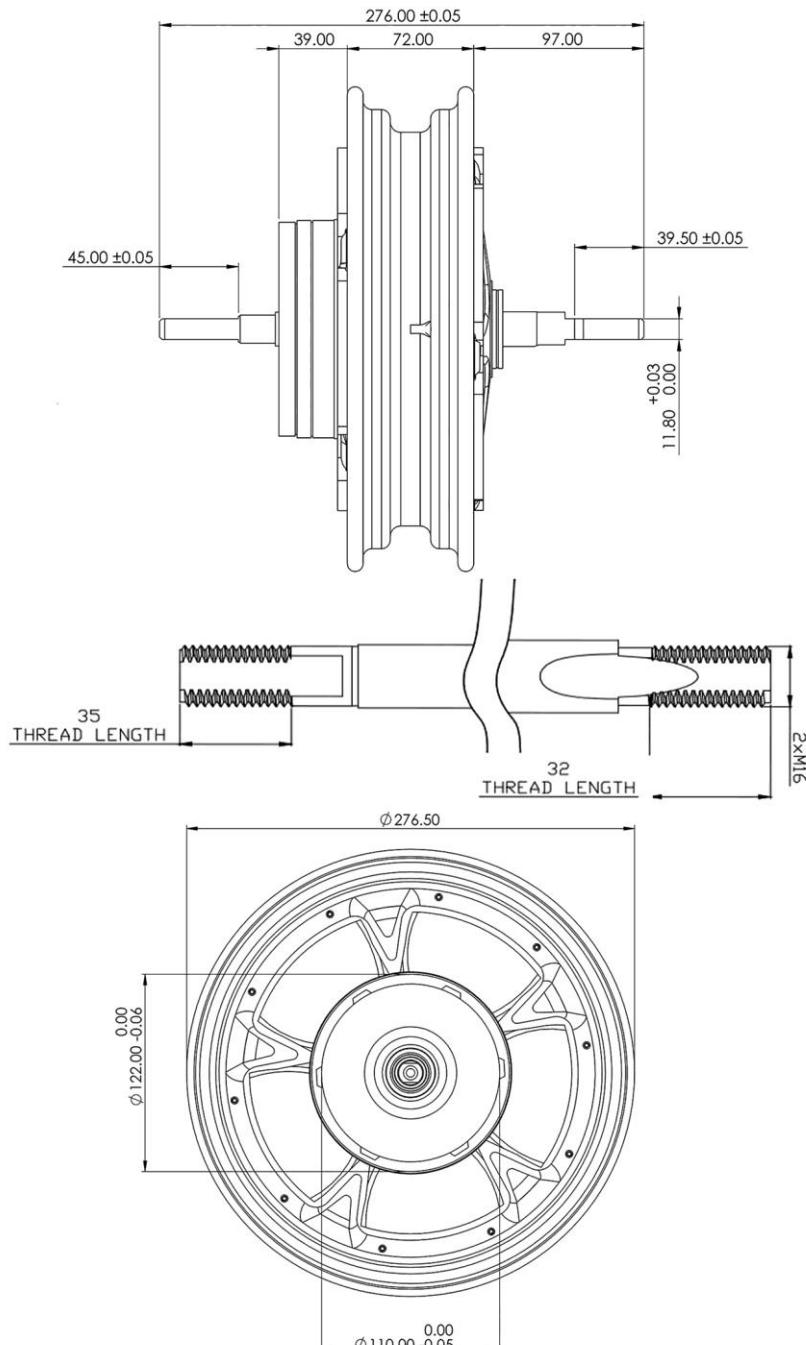
Product Features

- Rear wheel drive
- Low speed Motors support up to 45 km/h*
- Nominal output up to 1200 W*
- 17 Nm nominal and 80 Nm peak torque
- Weight: 9.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

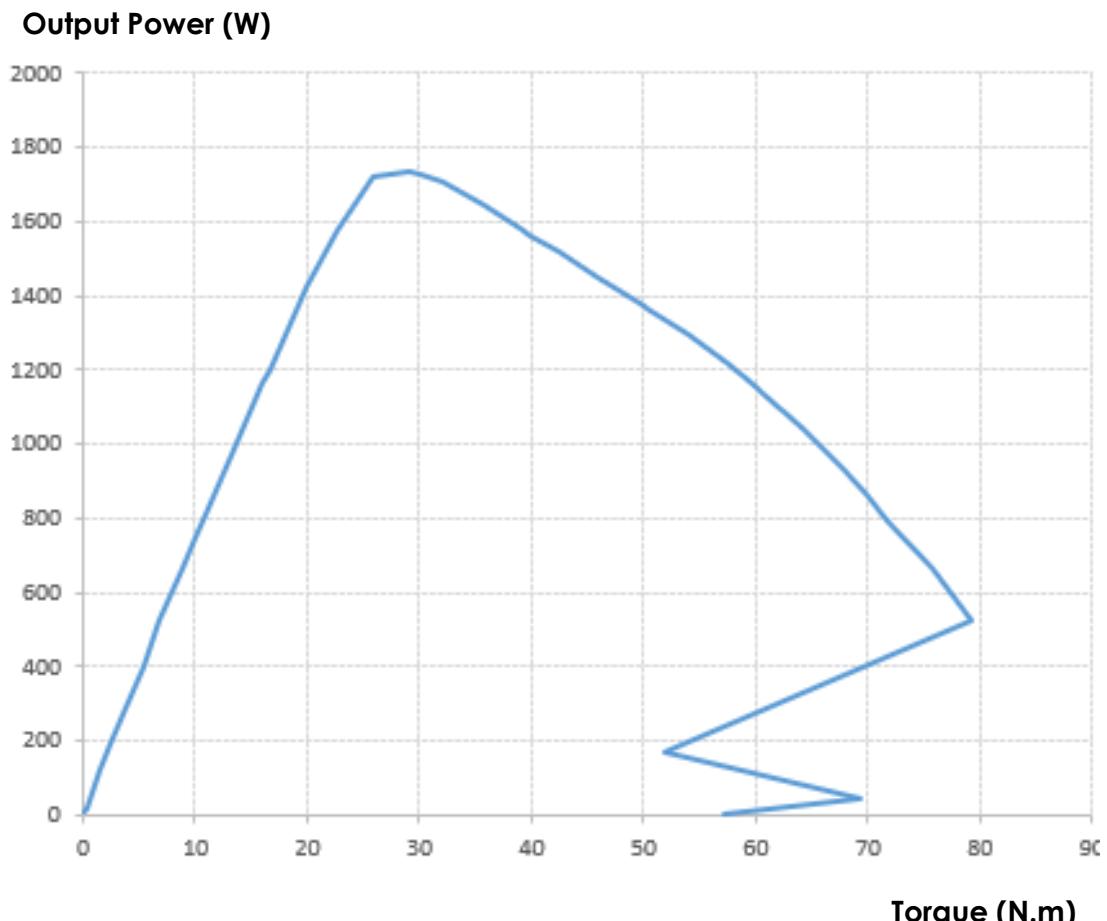
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

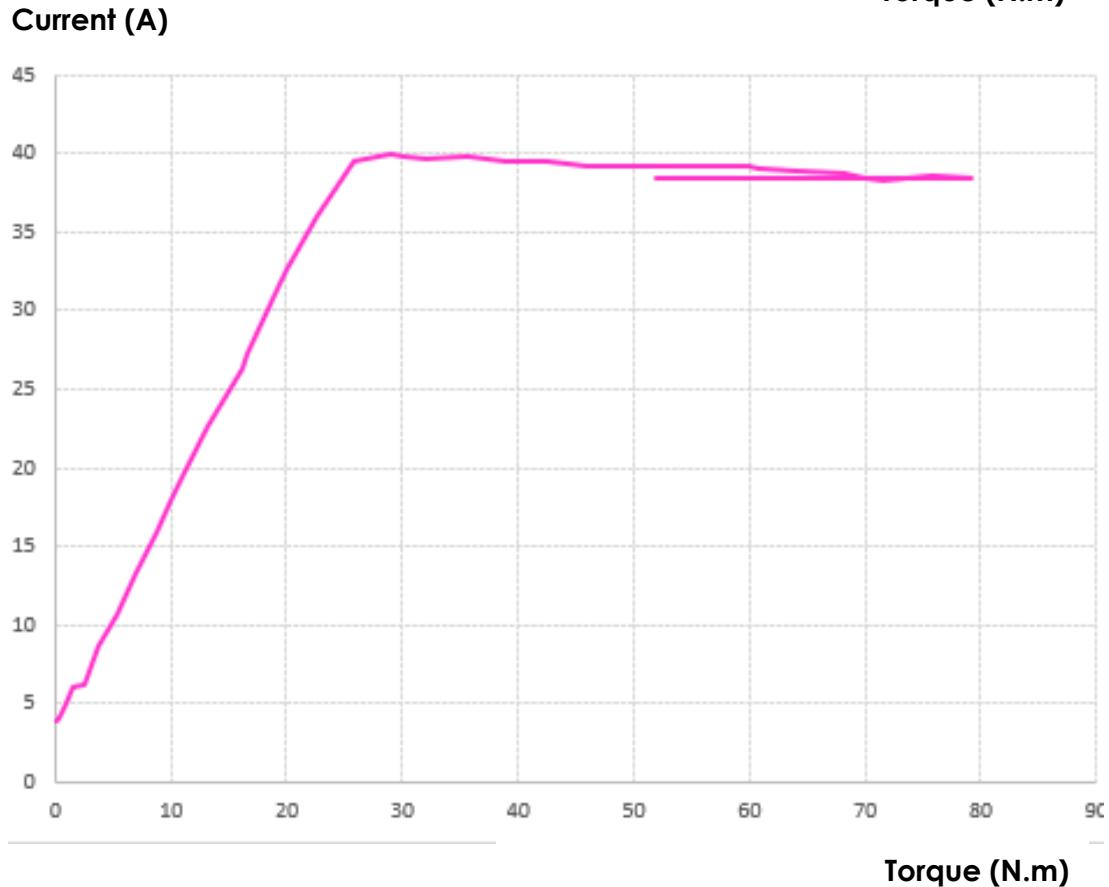
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

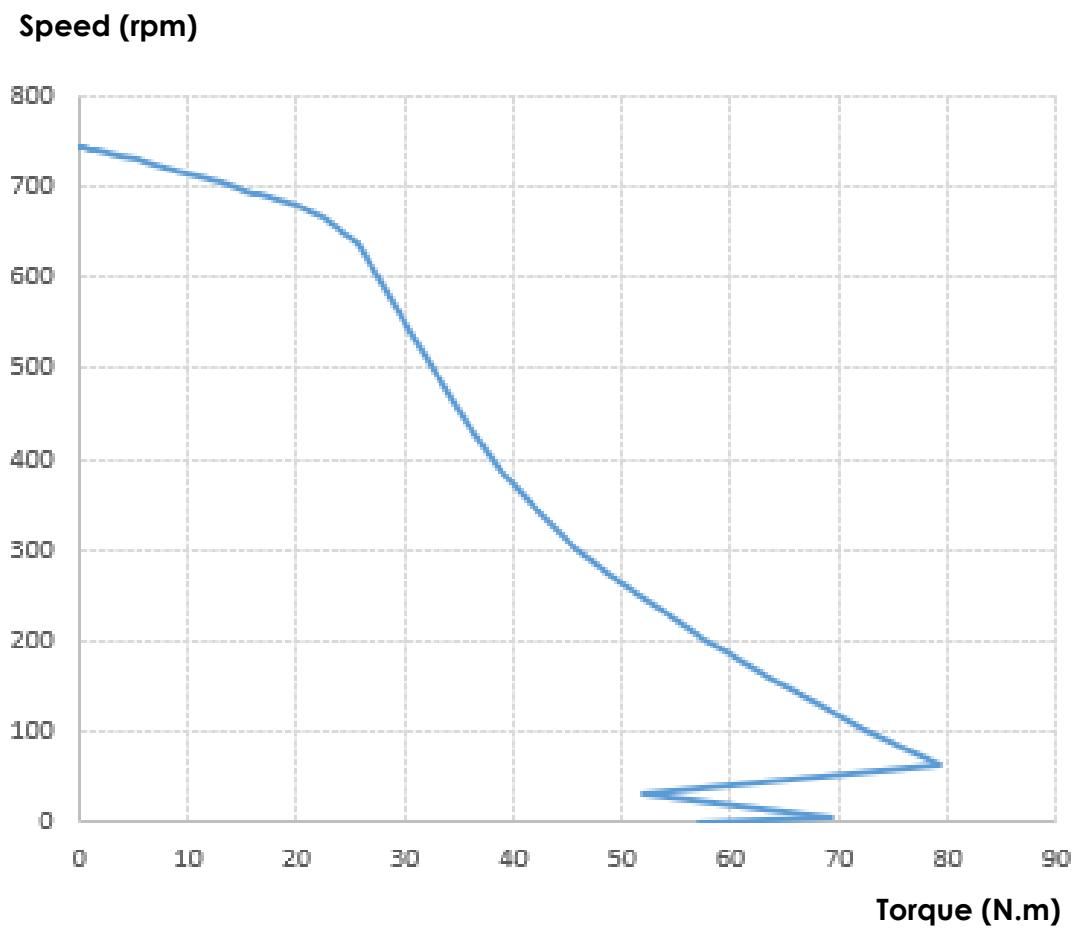
**Output Power (W)
vs Torque (N.m)**



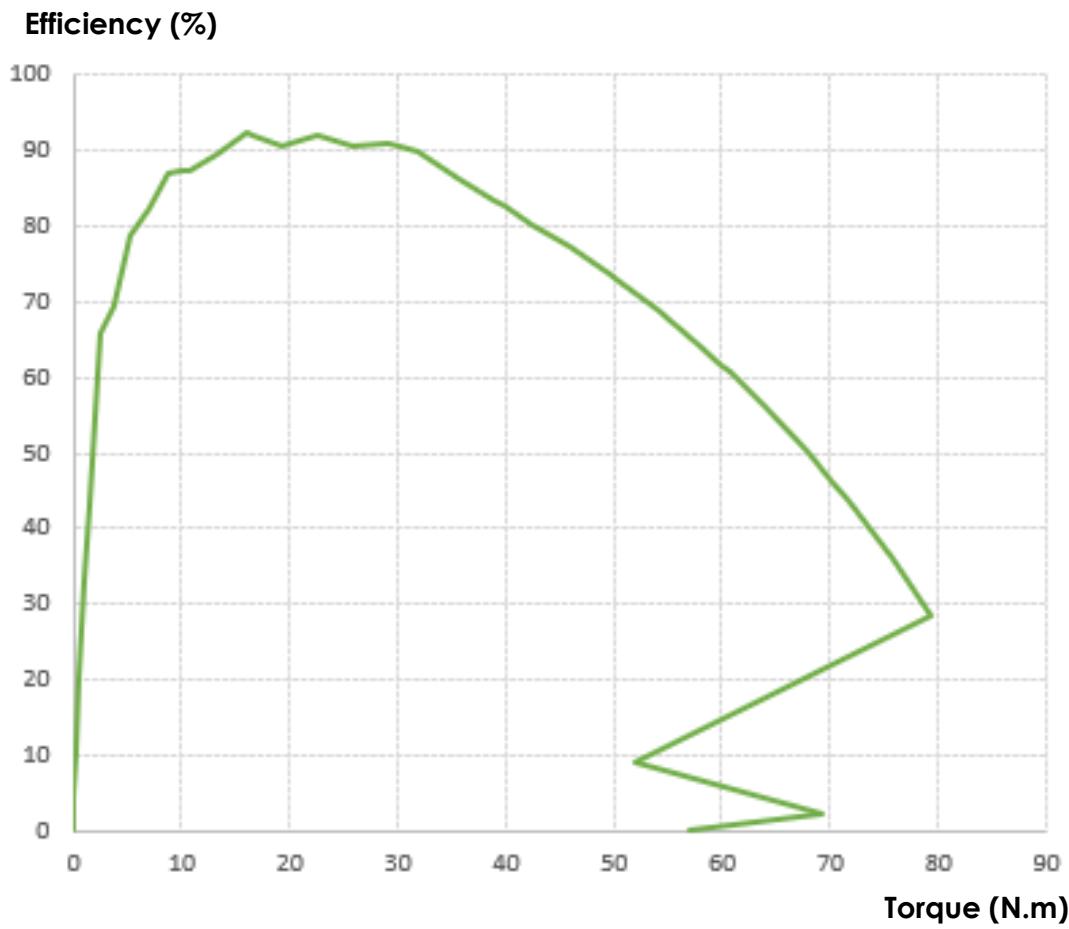
**Current (A)
vs Torque (N.m)**



**Speed (rpm)
vs Torque (N.m)**

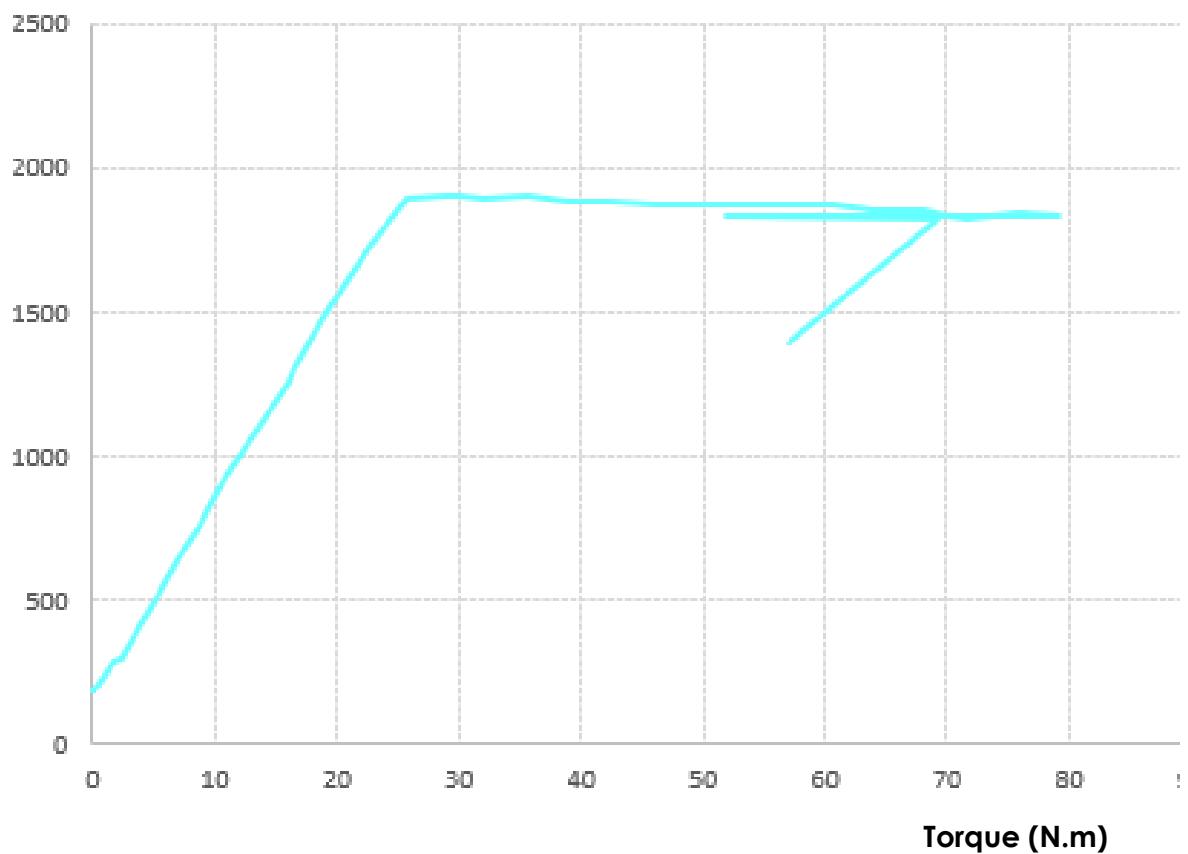


**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**

Input Power (W)



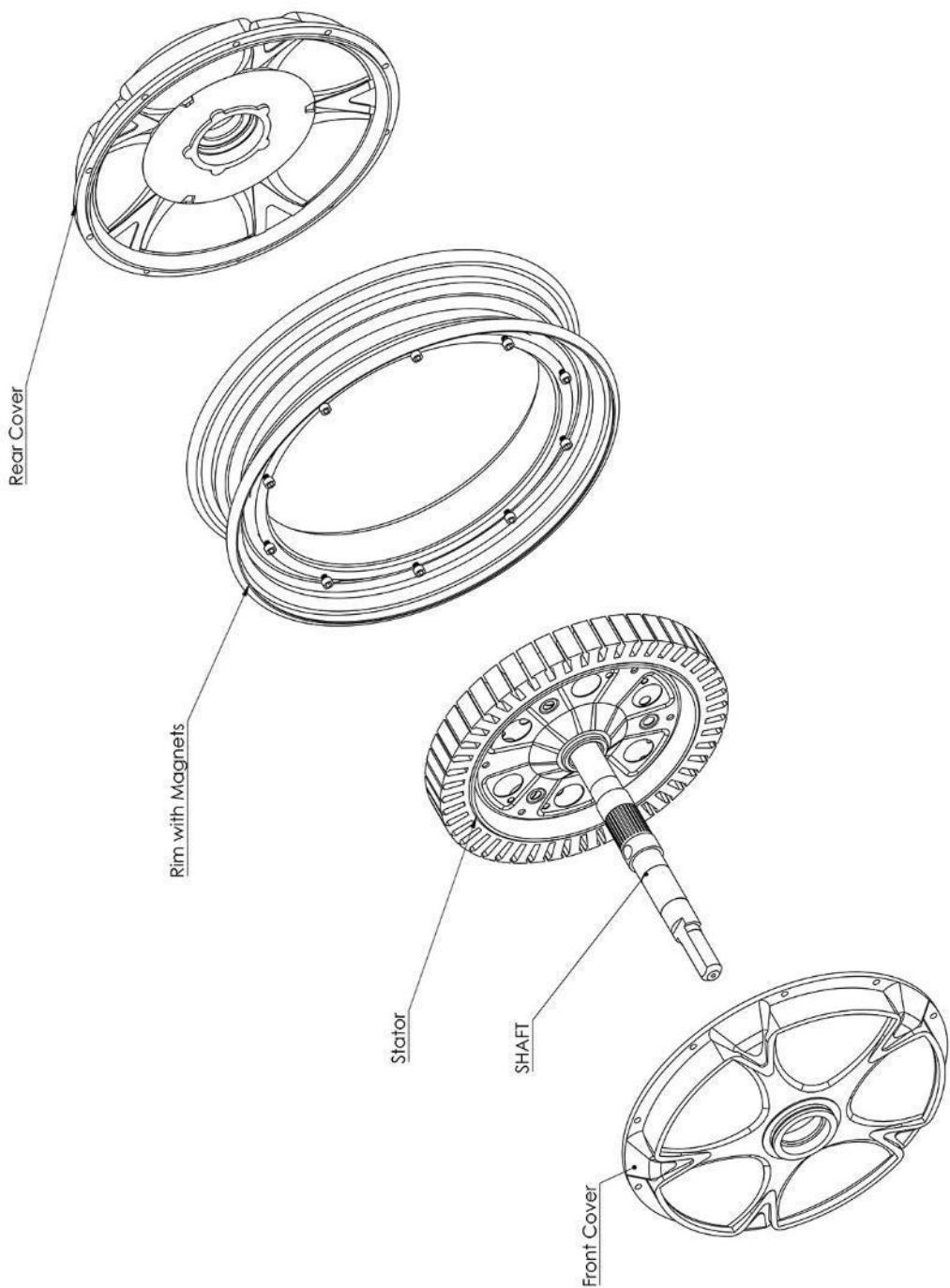
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	47_952	39152	187.74	0.1	7429	7.9948	4.3	2.3910
2	47.951	4.0986	196.53	0.3	742.7	19.729	10.0	11880
3	47.956	6.0611	290.67	1.6	741.5	124.61	42.9	5.5780
4	47.950	6.1509	294.94	2.5	737.2	194.03	65.8	6.3750
5	47.951	8.5860	411.71	3.7	735.2	285.61	69.4	7.1720
6	47.953	10.649	510.64	5.3	730.3	402.47	78.8	8.0000
7	47.954	13.250	635.40	6.9	725.6	522.92	82.3	8.7810
8	47.951	15.898	762.35	8.8	718.8	662.69	86.9	9.5780
9	47.952	17.885	857.66	10.0	714.8	747.83	87.2	10.043
10	47.952	19.376	929.14	10.9	711.8	811.69	87.4	10.391
11	47.947	22.605	1083.8	13.2	703.8	969.29	89.4	11.188
12	47.946	27.217	1305.0	16.6	690.7	1200.6	92.0	12.117
13	47.944	31.635	1516.7	19.3	681.0	1376.1	90.7	12.781
14	47.940	39.548	1895.9	25.8	6374	1718.5	90.6	14.375
15	47.941	39.917	1913.6	29.0	573.1	1737.4	90.8	15.188
16	47.940	39.811	1908.5	30.0	551.5	1726.5	90.5	15.453
17	47.938	39.599	1898.3	32.0	508.4	1704.8	89.8	15.984
18	47.939	39.864	1911.0	35.7	440.3	1646.2	86.1	16.797
19	47.940	39.149	1876.8	54.0	228.8	1294.0	68.9	20.781
20	47.940	39.262	1882.2	57.5	202.4	1218.8	64.8	21.594
21	47.941	39.113	1875.1	60.7	179.0	1138.1	60.7	22.375
22	47.938	38.870	1863.4	64.0	155.9	1045.2	56.1	23.188
23	47.942	38.674	1854.1	68.1	129.9	925.49	49.9	23.984
24	47.943	38.439	1842.9	70.0	117.3	857.17	46.5	24.405
25	47.944	38.228	1832.8	71.7	106.1	796.05	43.4	24.781
26	47.942	38.566	1848.9	75.9	83.4	663.06	35.9	25.594
27	47.941	38.455	1843.6	79.3	63.6	528.06	28.6	26.375

Specifications

Rated Power (Watts)	1200
Rated Torque (N.m)	17
Peak Torque (N.m)	80
Operating Voltage (Volts)	48
Rated Current (A)	27
Peak Current (A)	40
Rated RPM	690

Exploded View



Isometric View



Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

Our drive can be installed in the front or rear wheel and the shaft can be modified to the design needs of the customer for specific application needs. This lowers manufacturing costs and gives our customers the highest possible flexibility in product design. Our warranty options also deliver after sales services and enable overall customer satisfaction.

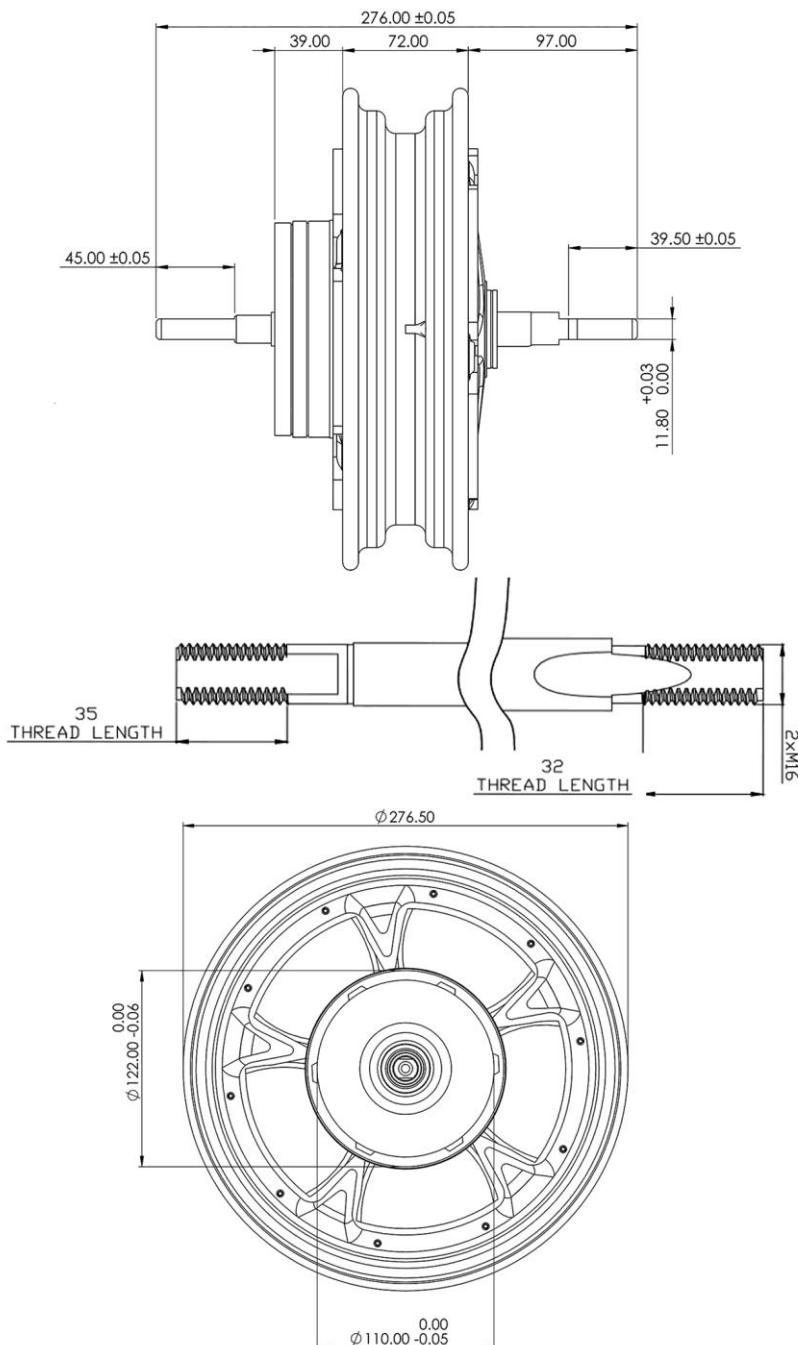
Product Features

- Rear wheel drive
- Low speed Motors support up to 40 km/h*
- Nominal output up to 550 W*
- 10.5 Nm nominal and 74.5 Nm peak torque
- Weight: 8.5 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

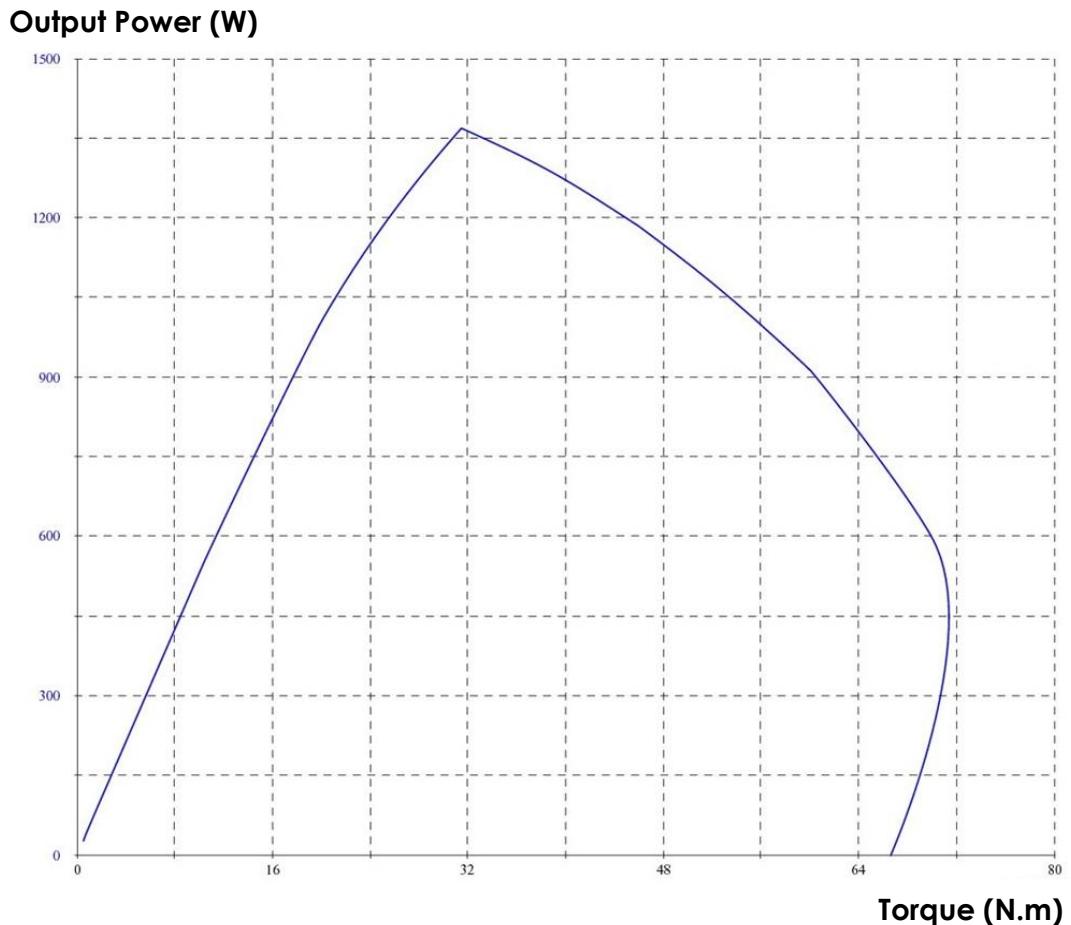
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

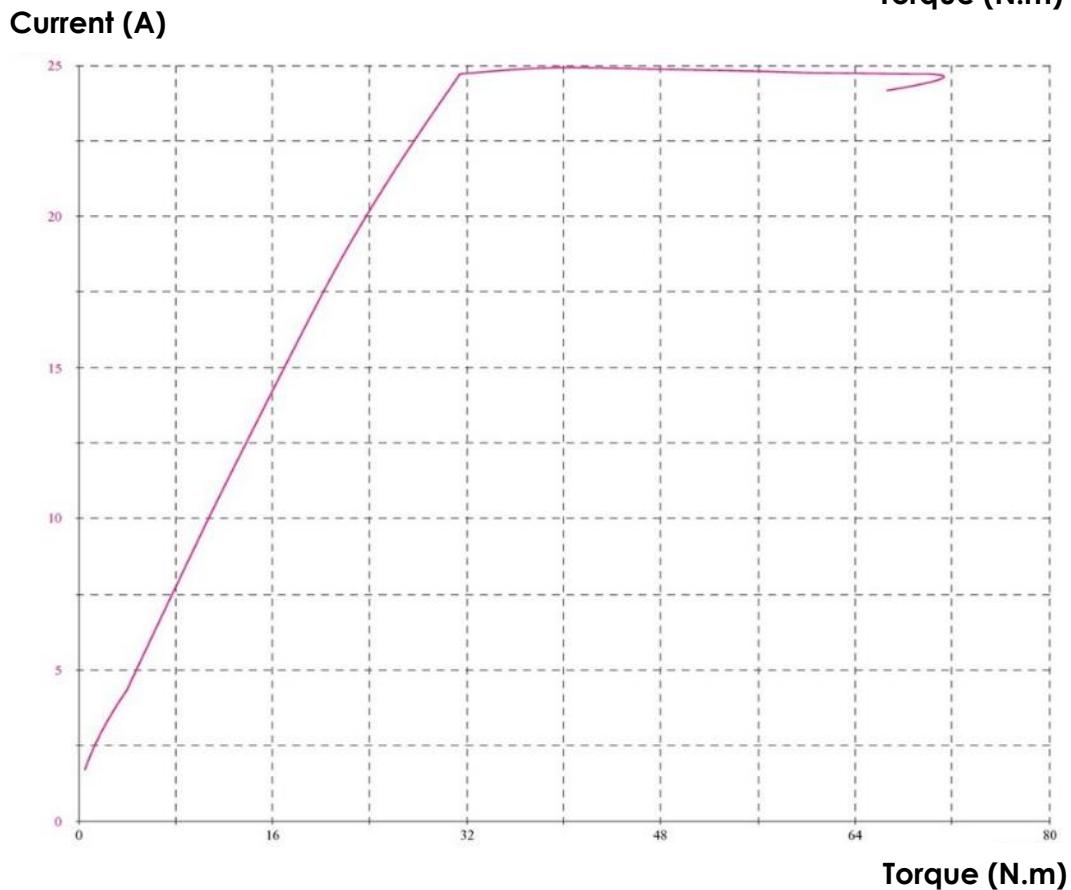
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

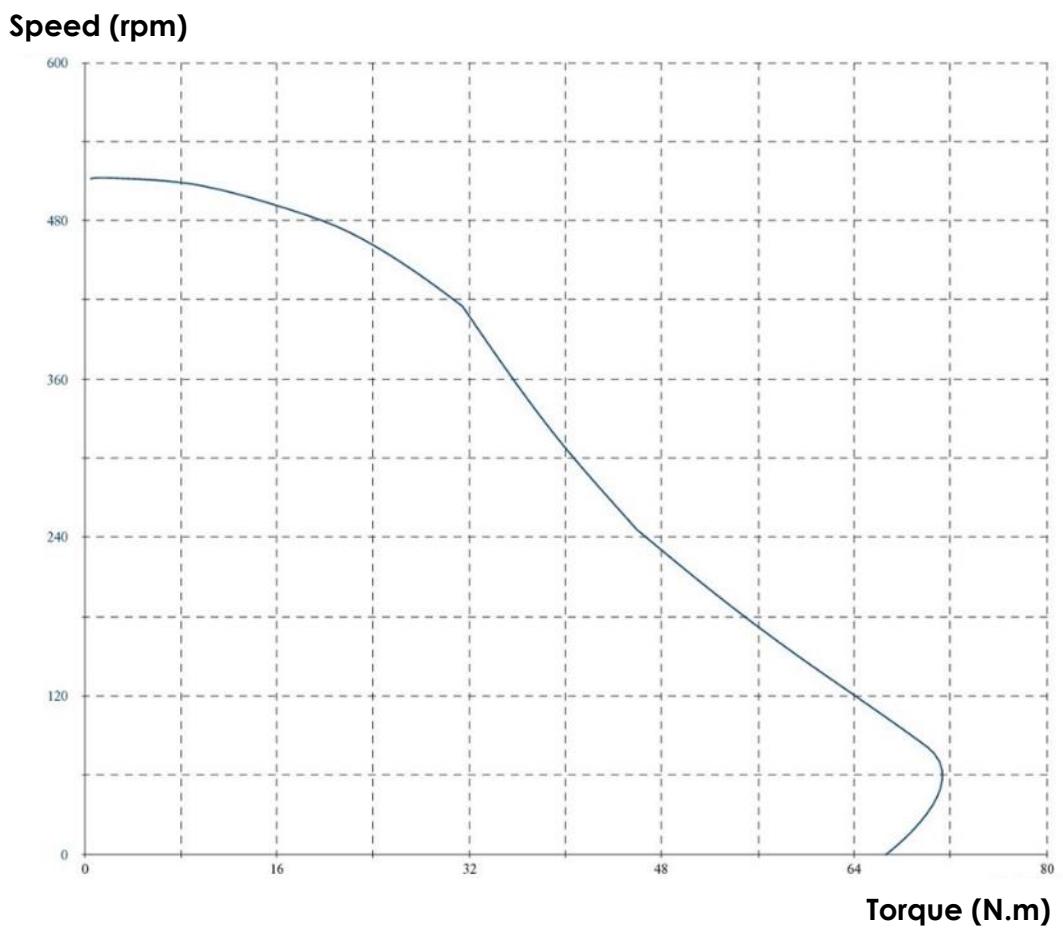
**Output Power (W)
vs Torque (N.m)**



**Current (A)
vs Torque (N.m)**



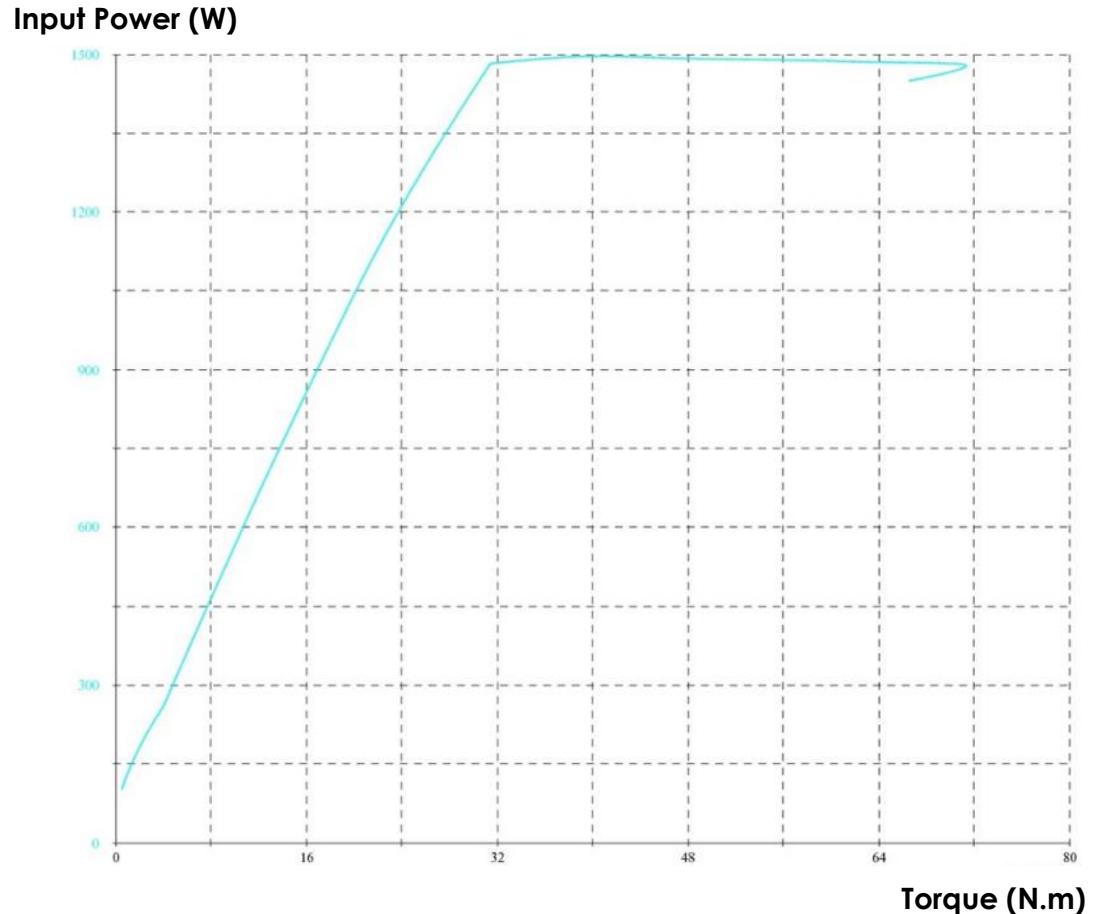
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



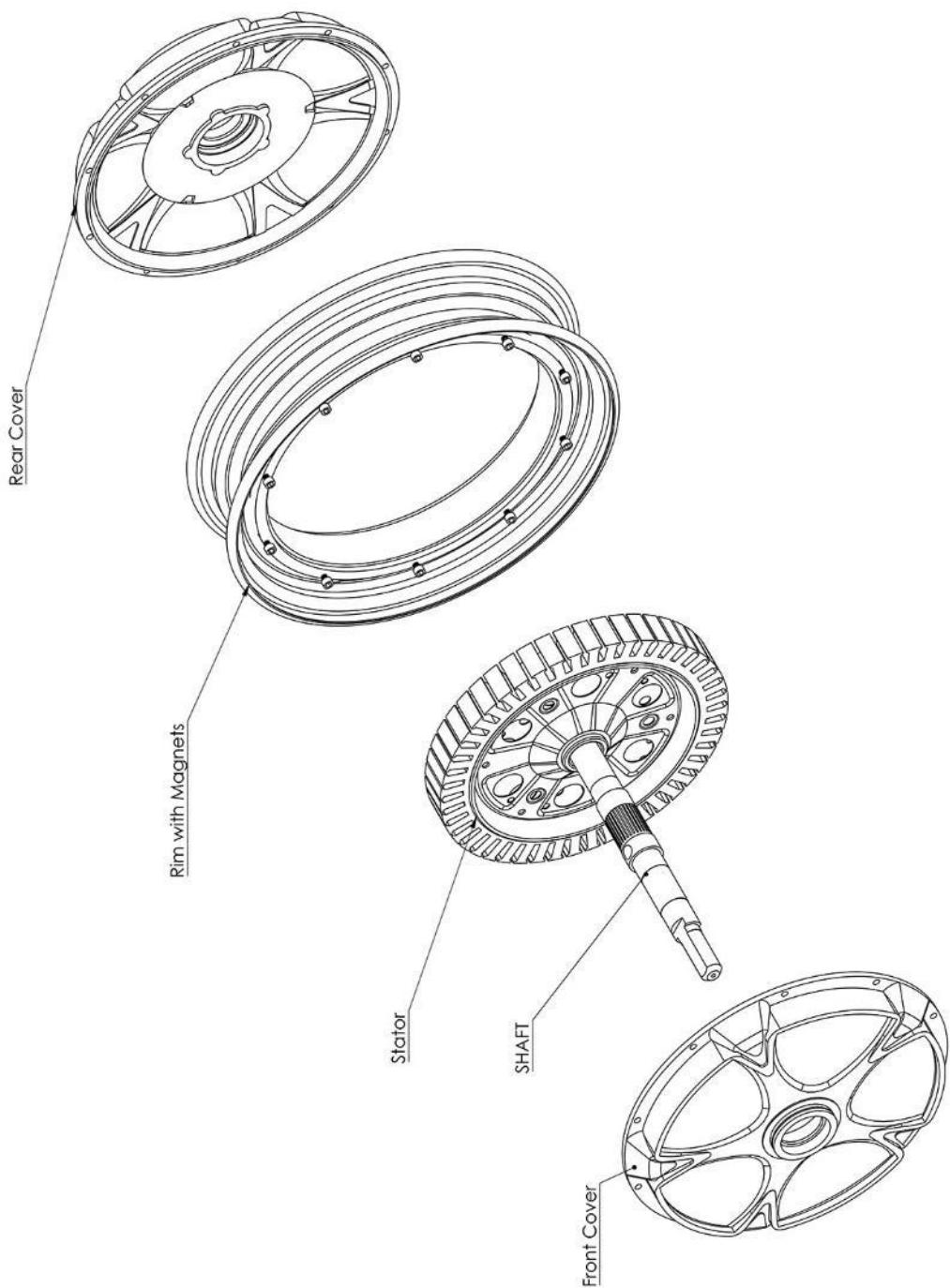
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	60.012	1.6732	100.41	0.5	512.1	26.729	26.6	0
2	60.007	1.8189	109.15	0.7	512.4	37.314	34.2	3
3	59.998	2.9511	177.06	1.6	512.2	85.189	48.1	6
4	60.005	4.2994	257.98	4	511.5	212.59	82.4	8.985
5	60.021	7.5807	455	7.8	510.2	416.61	91.6	12
6	60.022	9.4127	564.96	10	506.3	529.48	93.3	13.395
7	60.022	9.7458	584.95	10.4	505.6	550	93.6	13.649
8	60.022	11.499	690.18	12.5	501.8	658.01	95.3	14.985
9	60.022	16.034	962.37	18.2	485.2	925.84	96.2	18
10	60.021	17.388	1043.6	20	479.3	1001.1	96	18.84
11	60.02	20.848	1251.3	24.6	464.2	1193.4	95.4	20.985
12	60.02	23.861	1432.1	30	425.3	1329.9	93	23.333
13	60.02	24.698	1482.3	31.5	414.5	1367.8	92.3	23.985
14	60.021	24.963	1498.3	38.6	320	1294.1	86.4	27
15	60.021	24.946	1497.3	40	306	1273.5	85.1	27.565
16	60.021	24.872	1492.8	46	246	1185	79.4	29.985
17	60.02	24.844	1491.1	50	215	1114.9	74.8	31.615
18	60.02	24.821	1489.7	53.4	188.7	1055.4	70.8	33
19	60.02	24.768	1486.5	60	145.7	913.28	61.4	35.775
20	60.02	24.764	1486.3	60.5	142.4	902.51	60.7	35.985
21	60.02	24.725	1484	67.9	96.2	683.56	46.1	38.985
22	60.02	24.712	1483.2	70	82.4	597.47	40.3	39.944
23	60.021	24.683	1481.5	74.5	52.9	413	27.9	42
24	60.021	24.167	1450.5	66.6	0	0	0	45

Specifications

Rated Power (Watts)	550
Rated Torque (N.m)	10.5
Peak Torque (N.m)	74.5
Operating Voltage (Volts)	60
Rated Current (A)	9.7
Peak Current (A)	25
Rated RPM	500

Exploded View



Isometric View



Product Description

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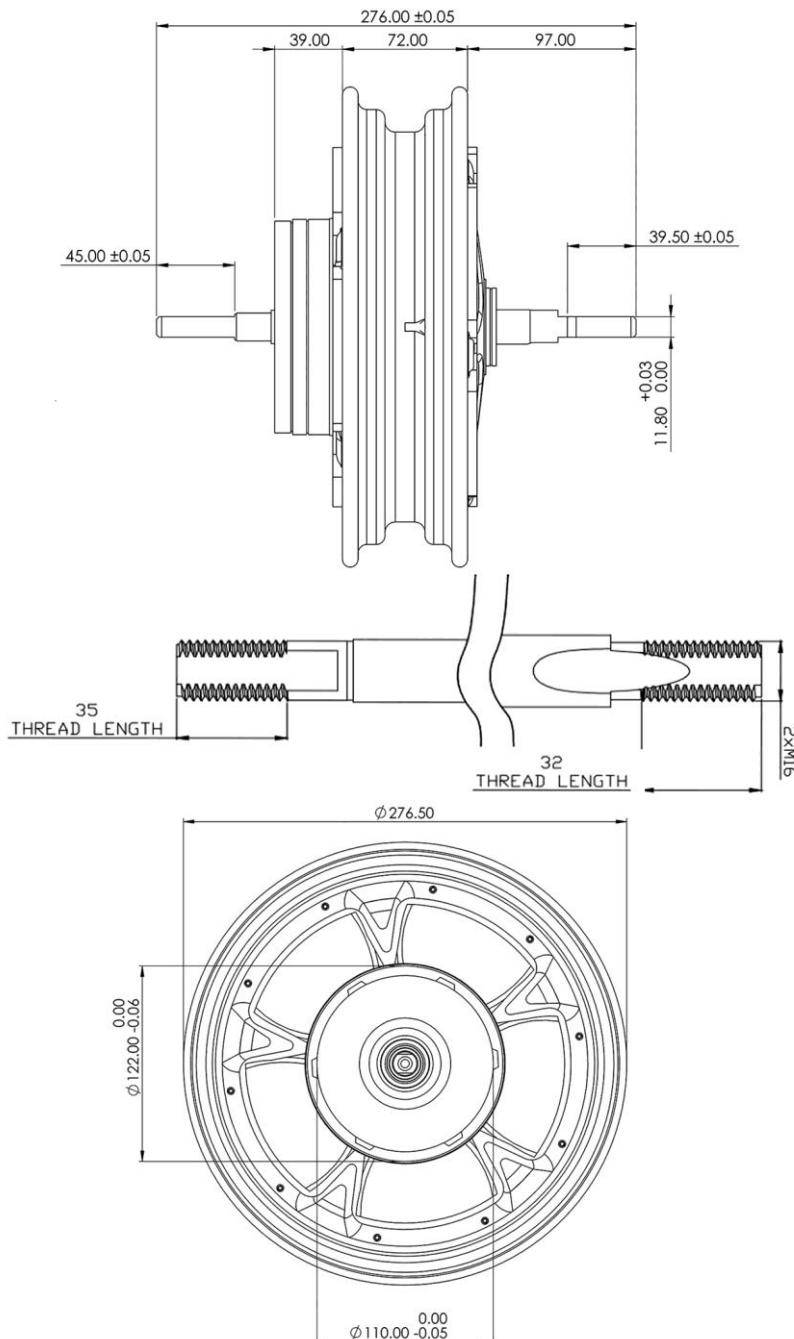
Product Features

- Rear wheel drive
- Low speed Motors support up to 42 km/h*
- Nominal output up to 850 W*
- 14.4 Nm nominal and 73 Nm peak torque
- Weight: 8.5 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

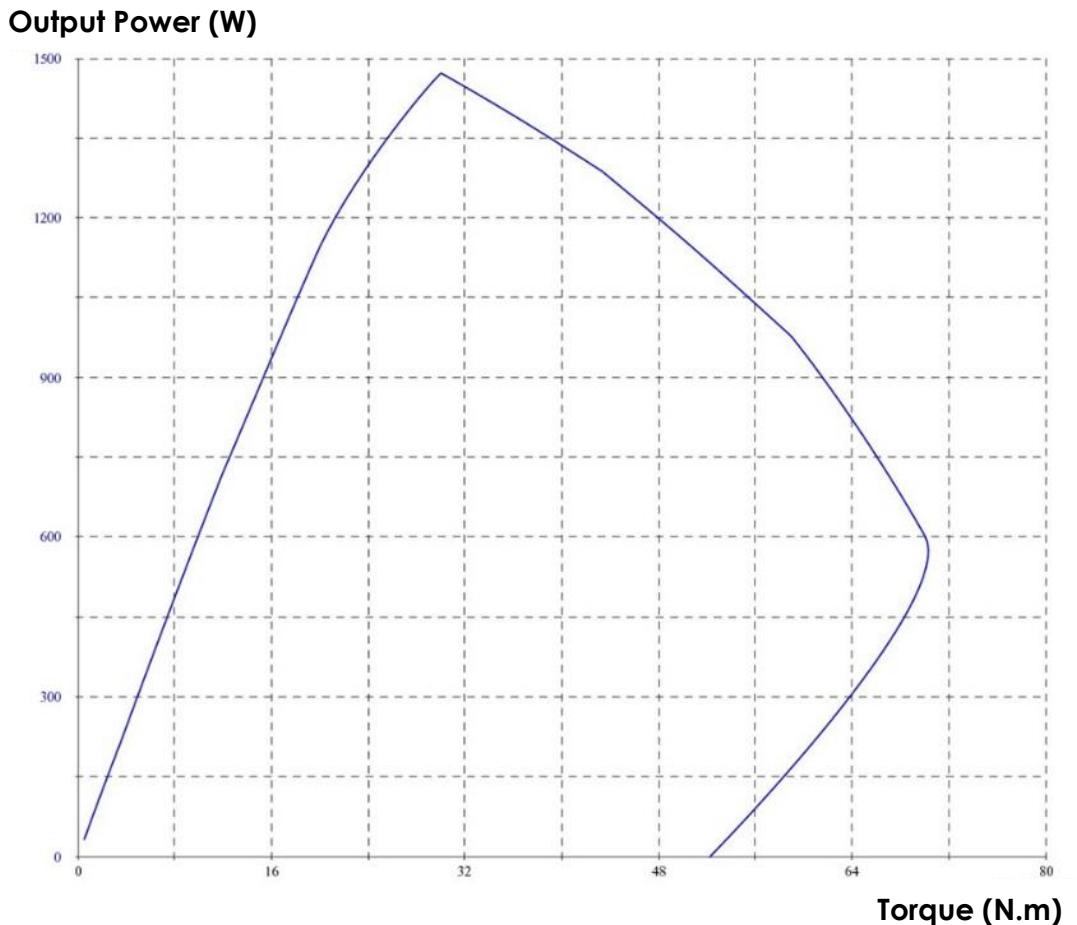
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

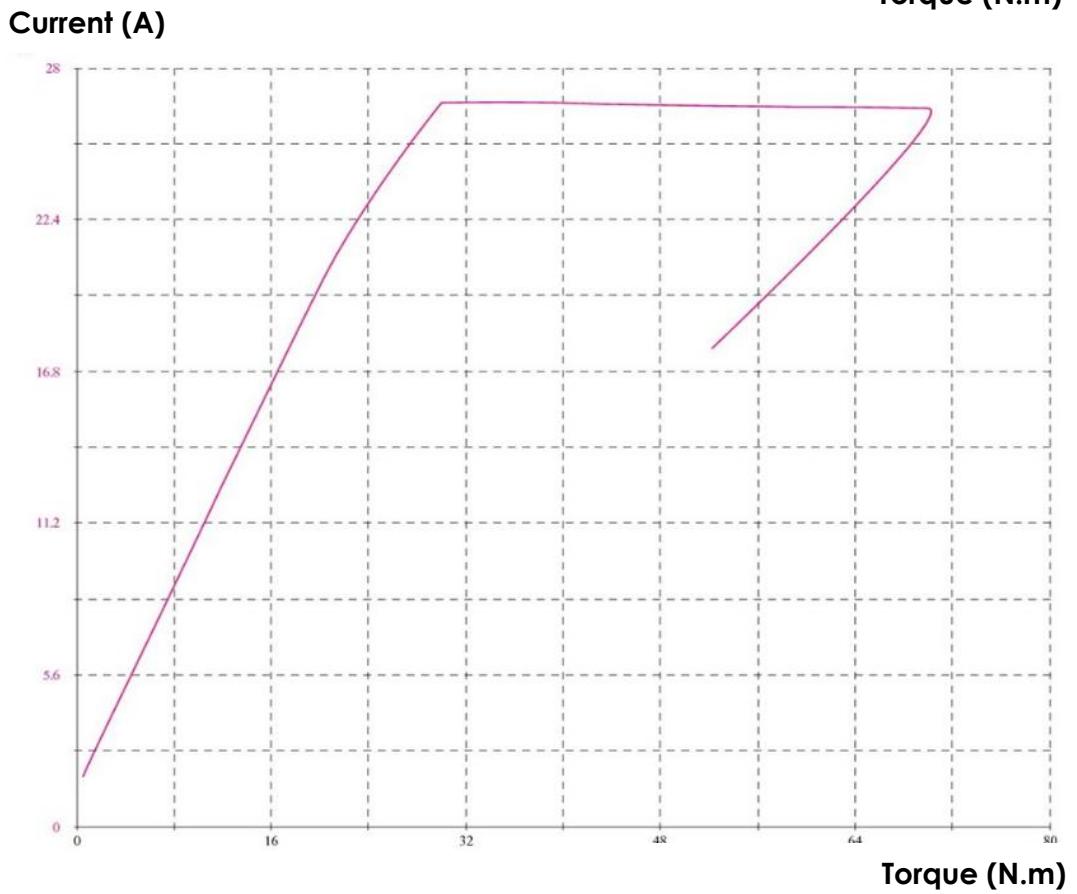
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

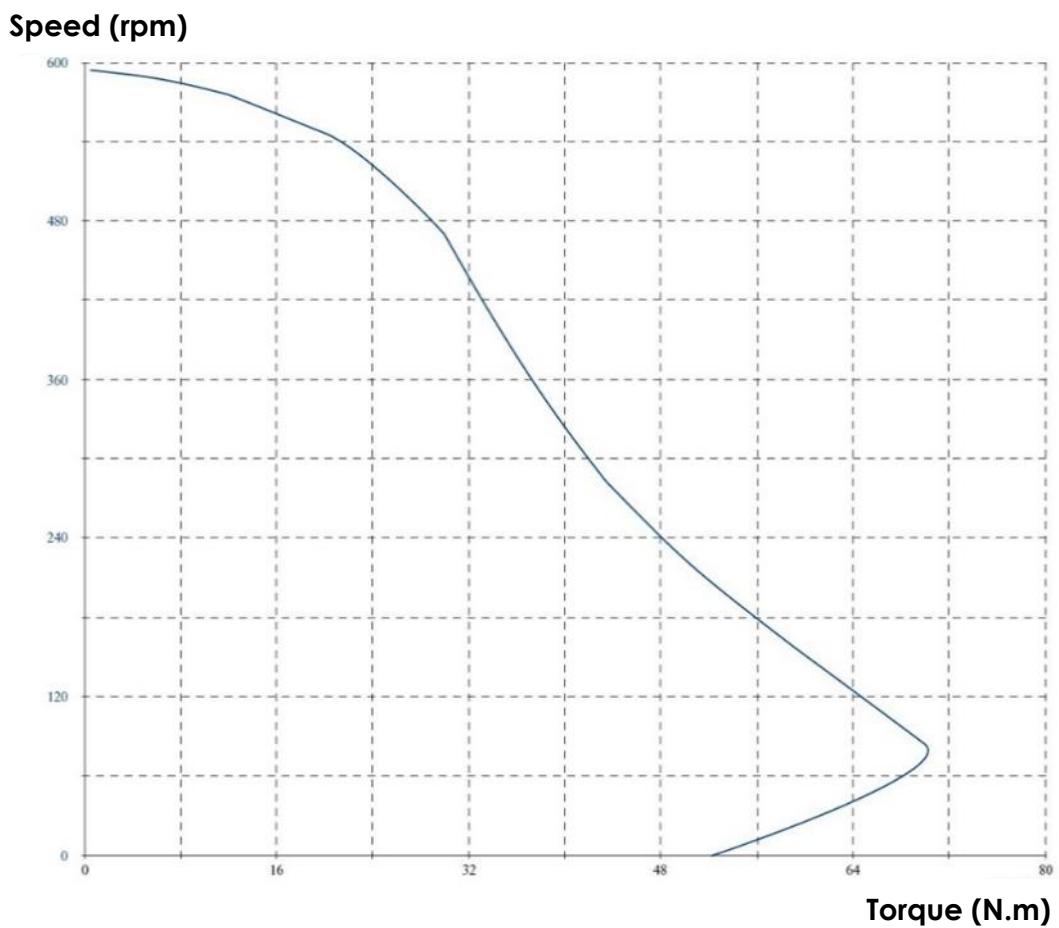
**Output Power (W)
vs Torque (N.m)**



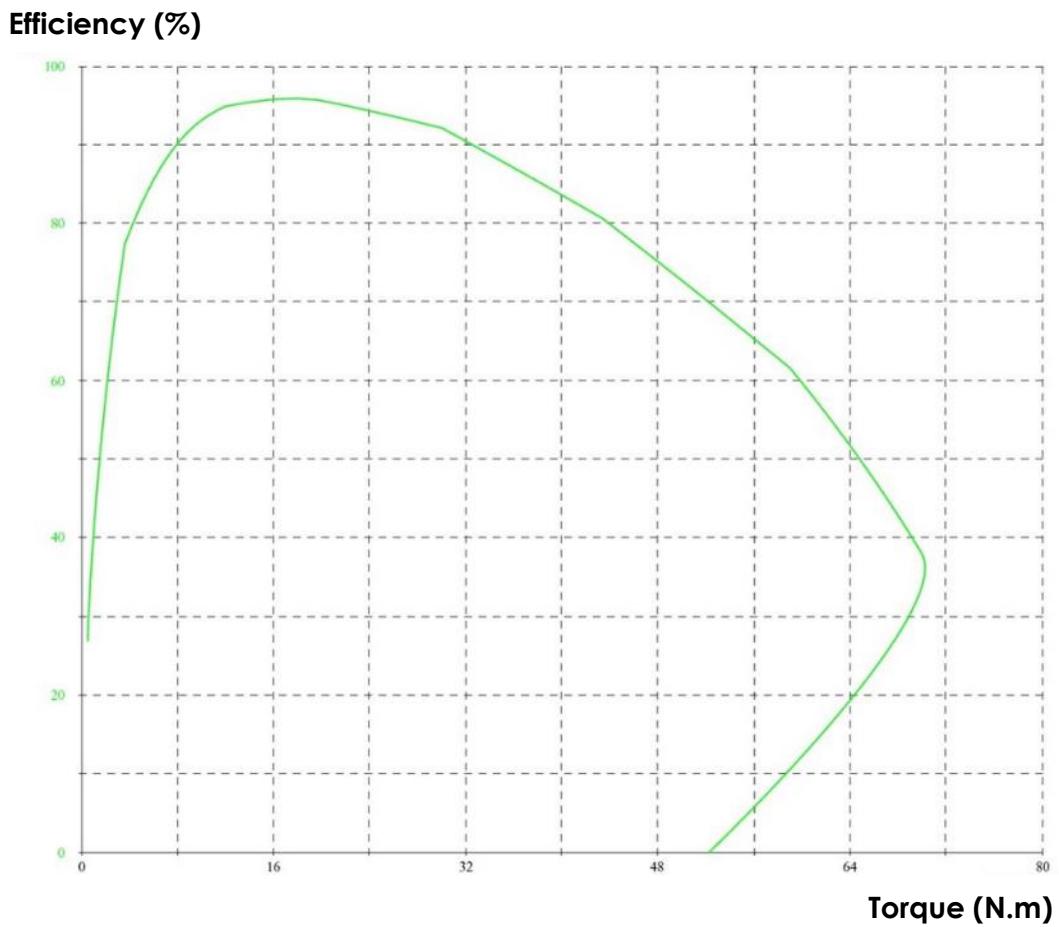
**Current (A)
vs Torque (N.m)**



**Speed (rpm)
vs Torque (N.m)**

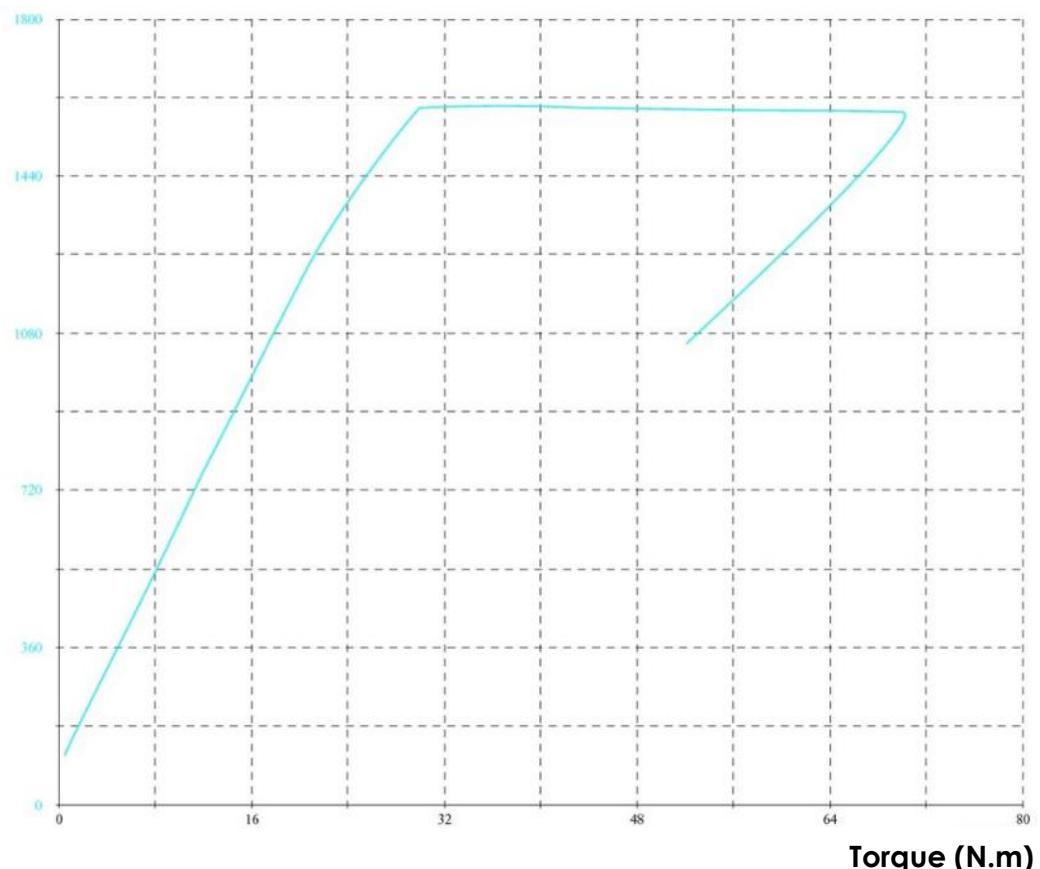


**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**

Input Power (W)



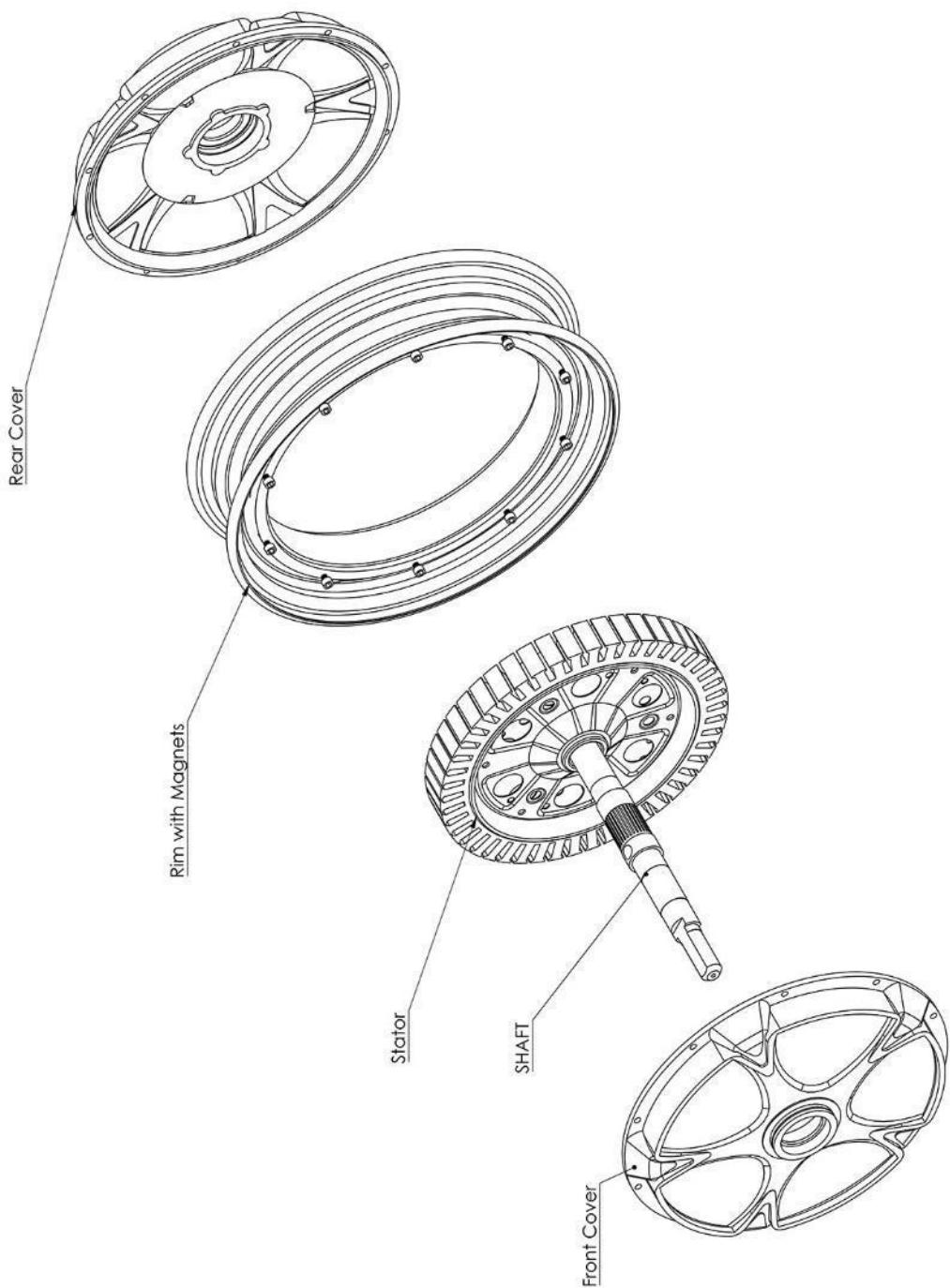
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	59.867	1.852	110.87	0.5	593.7	29.85	26.9	0
2	59.862	1.9874	118.97	0.6	594.2	40.113	33.7	2.984
3	59.861	2.8326	169.56	1.5	592.7	93.667	55.2	5.984
4	59.875	4.7813	286.28	3.6	591.1	221.33	77.3	9
5	59.887	7.8955	472.84	7	587.2	430.48	91	12
6	59.886	10.776	645.35	10	580.3	605.39	93.4	13.837
7	59.886	12.6	754.6	11.9	576	716.16	94.9	15
8	59.886	14.837	888.56	14.4	567.1	850	95.5	16.364
9	59.886	17.521	1049.3	17.3	556.4	1010.6	96.3	18
10	59.89	19.983	1196.8	20	546.5	1142.7	95.6	19.343
11	59.895	22.993	1377.1	23.3	534.5	1304.1	94.7	20.984
12	59.884	26.683	1597.9	29.9	471.2	1473	92.2	24
13	59.884	26.684	1598	30	469.6	1471.7	92.1	24.046
14	59.884	26.771	1603.1	36.4	364.6	1389.5	86.7	27
15	59.884	26.724	1600.3	40	322.6	1336.9	83.6	28.535
16	59.884	26.679	1597.6	43.4	283	1287.3	80.6	29.984
17	59.882	26.626	1594.4	50	222.4	1161.2	72.8	32.788
18	59.882	26.622	1594.2	50.5	217.8	1151.6	72.2	33
19	59.885	26.571	1591.2	59	158.4	978.16	61.5	35.984
20	59.885	26.565	1590.8	60	151.7	948.75	59.7	36.468
21	59.883	26.532	1588.8	65.2	116.6	795.84	50.1	38.984
22	59.884	26.508	1587.4	70	83.9	604.04	38.1	40.807
23	59.885	26.493	1586.5	73.1	62.8	480.17	30.3	41.984
24	59.887	17.657	1057.4	52.2	0	0	0	45

Specifications

Rated Power (Watts)	850
Rated Torque (N.m)	14.4
Peak Torque (N.m)	73.0
Operating Voltage (Volts)	60
Rated Current (A)	14.8
Peak Current (A)	26
Rated RPM	570

Exploded View



Isometric View



Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

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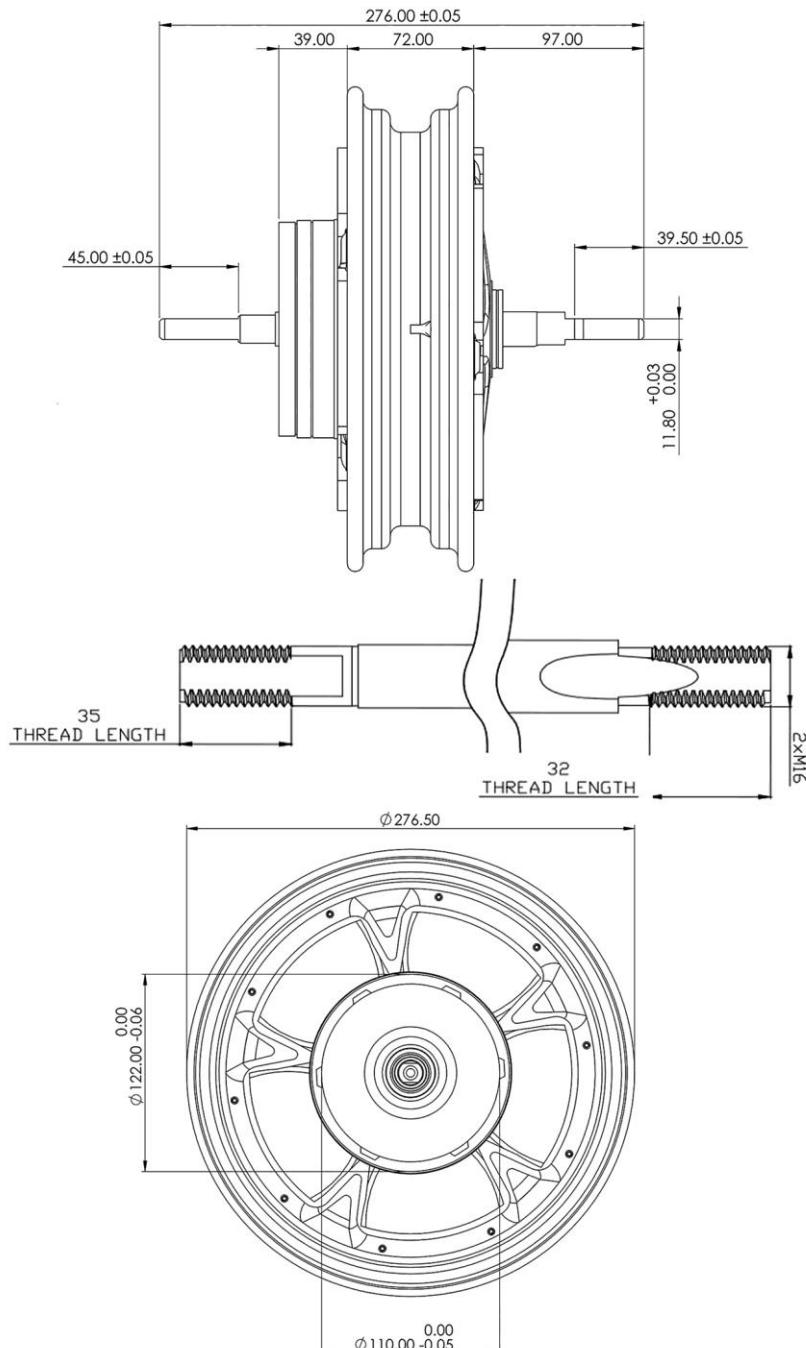
Product Features

- Rear wheel drive
- Low speed Motors support up to 45 km/h*
- Nominal output up to 1000 W*
- 16 Nm nominal and 88 Nm peak torque
- Weight: 9.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

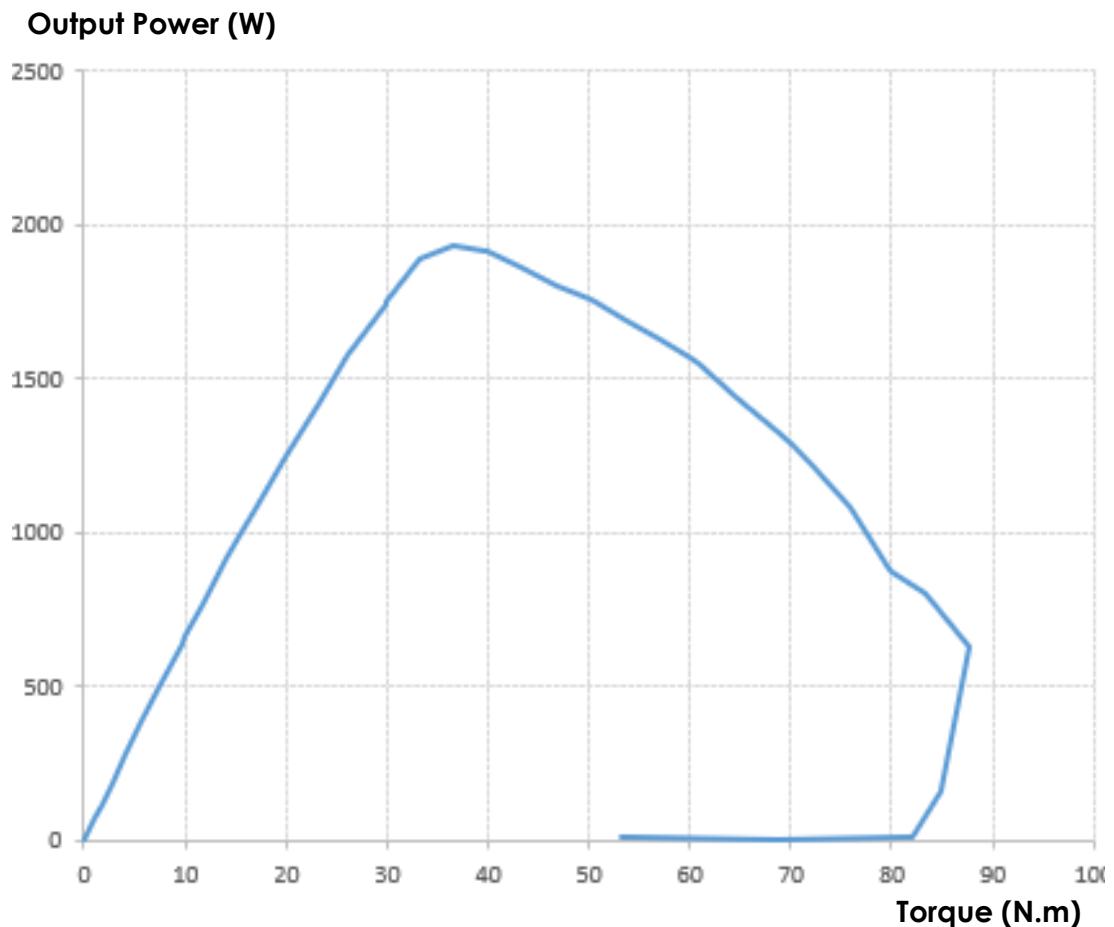
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

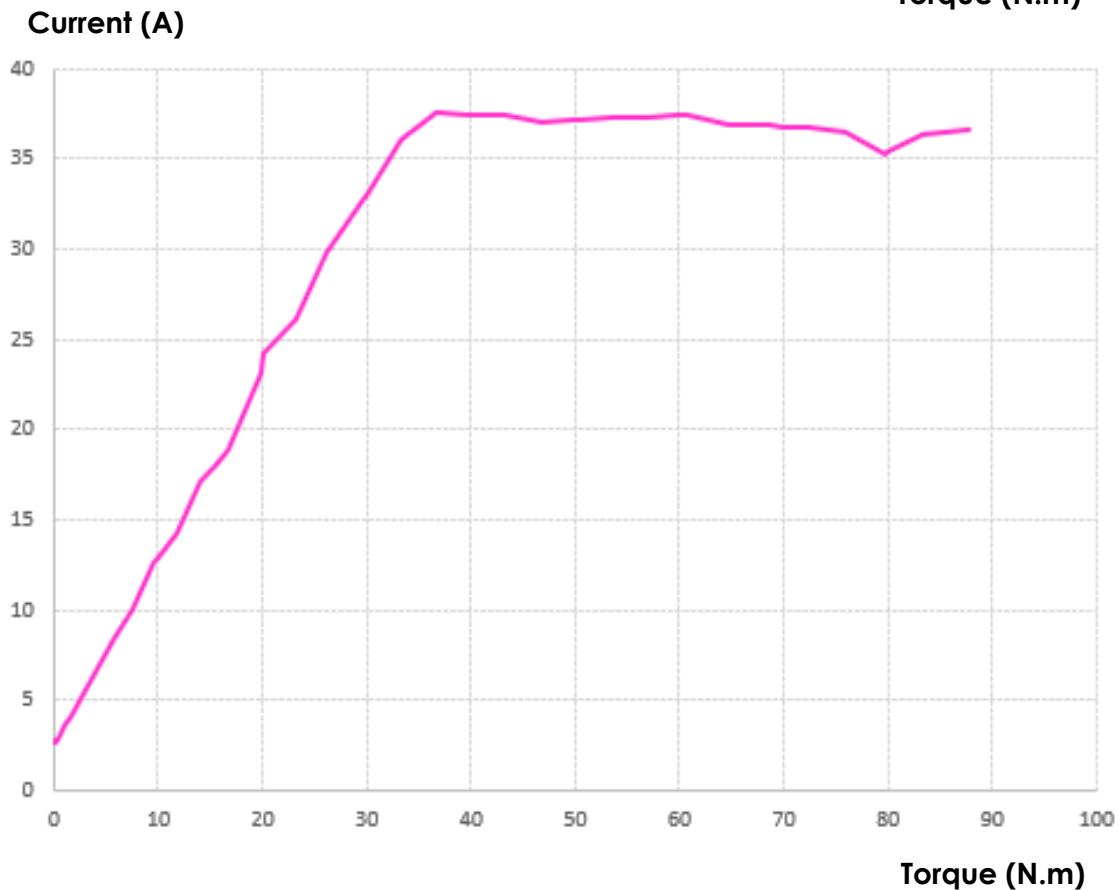
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

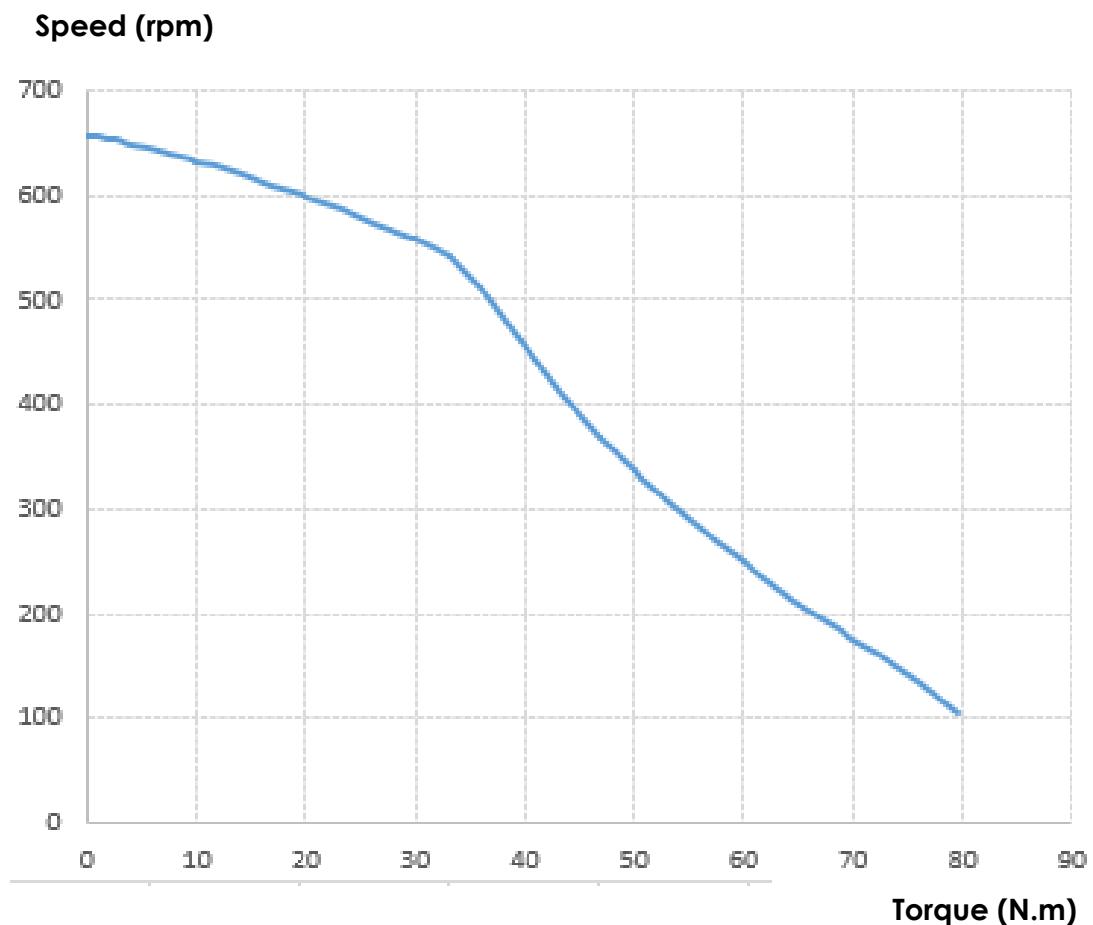
**Output Power (W)
vs Torque (N.m)**



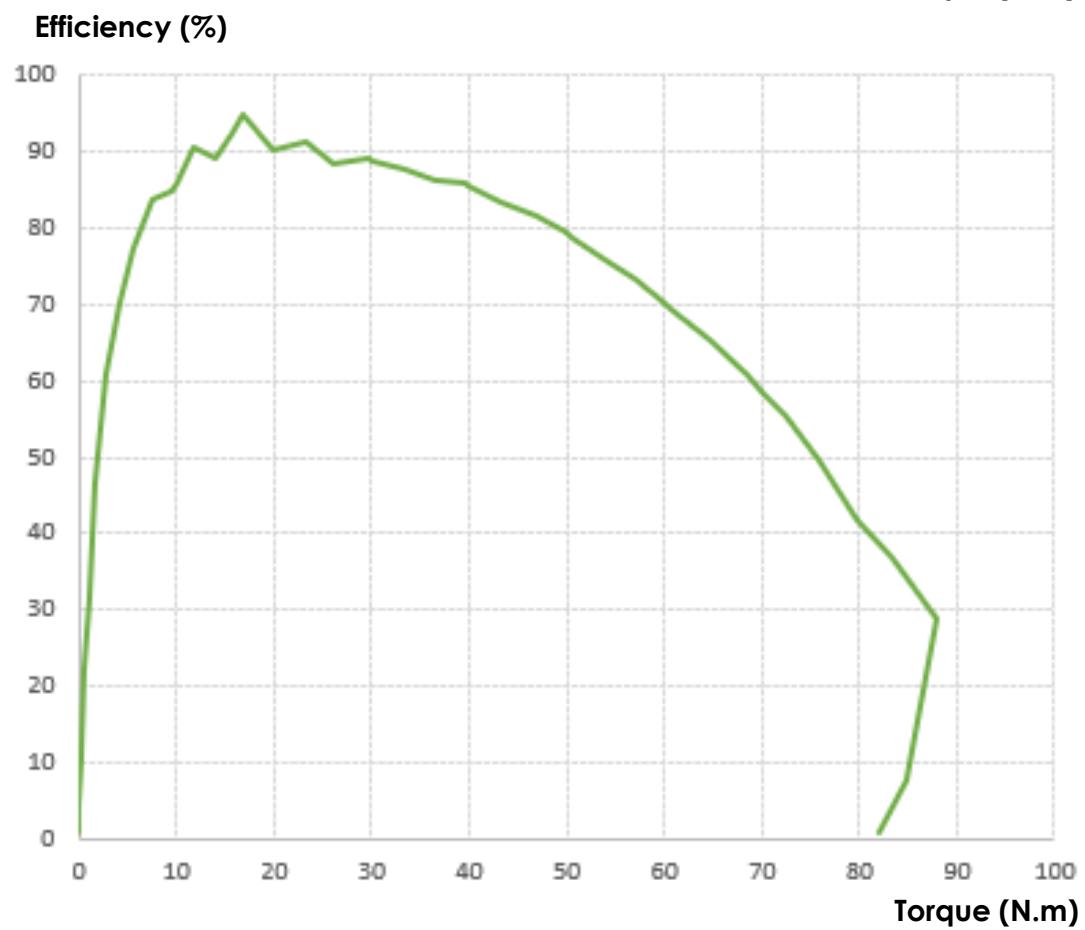
**Current (A)
vs Torque (N.m)**



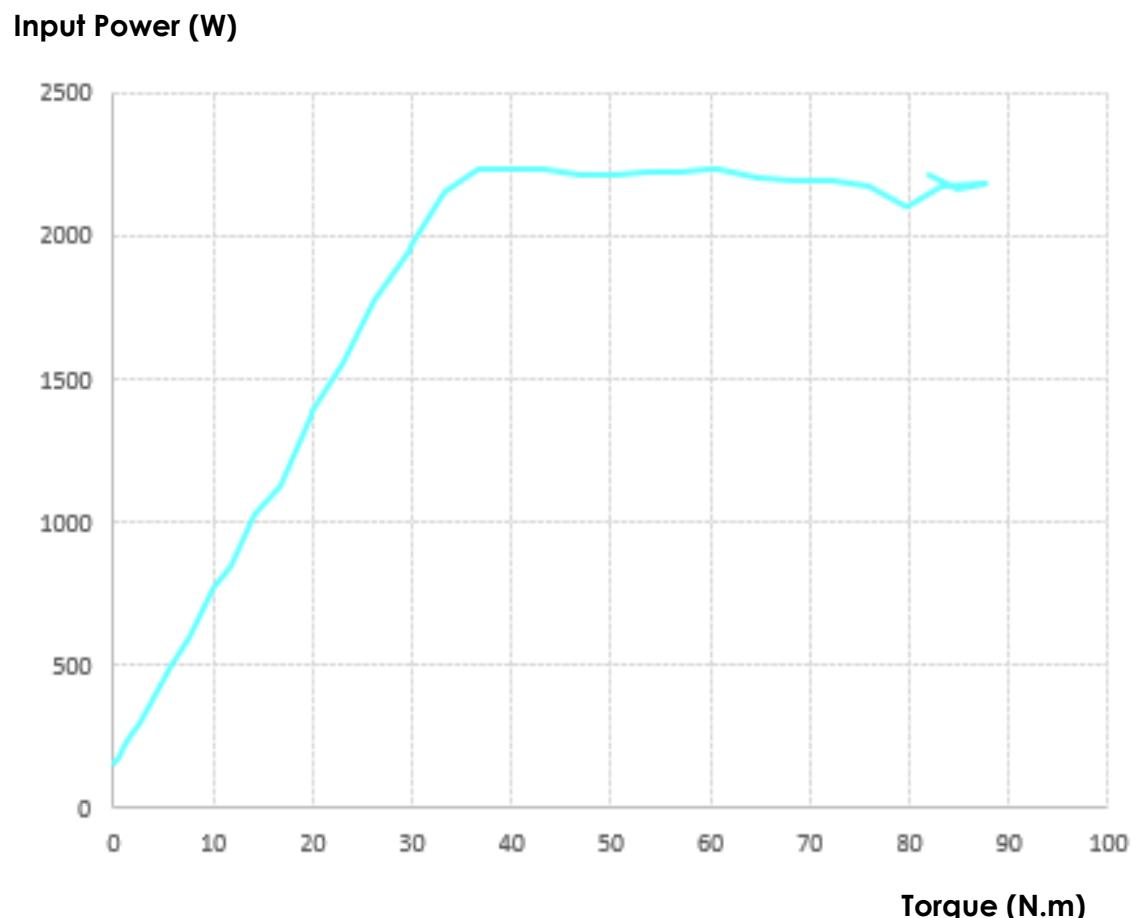
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



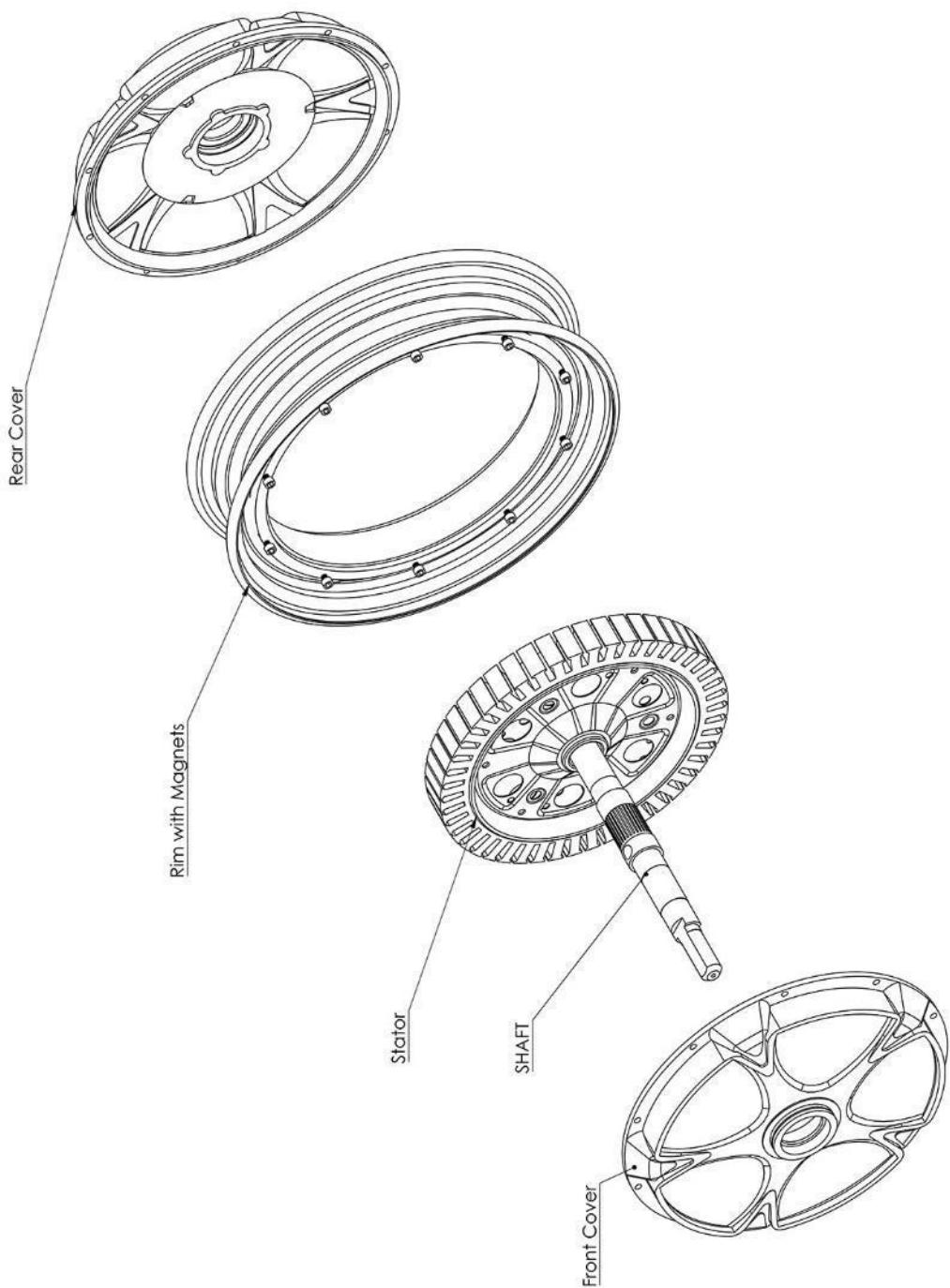
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	59.773	2.6460	158.16	0.1	657.8	16.065	2.3	1.5940
2	59.771	2.8303	169.17	0.3	657.3	17.809	10.5	3.1870
3	59.772	3.6319	217.09	1.1	655.5	72.719	31.5	4.7810
4	59.772	5.0485	301.76	2.7	653.4	183.49	60.8	6.3900
5	59.773	6.6953	400.19	4.1	648.3	280.4	70.1	7.1720
6	59.771	10.018	598.79	7.5	639.3	502.17	83.9	8.7970
7	59.770	12.569	751.25	9.6	633.7	636.01	84.7	9.5780
8	59.769	14.198	848.59	11.7	627.3	770.06	90.7	10.375
9	59.767	18.088	1081.0	15.6	614.1	1000.0	92.3	11.619
10	59.767	18.884	1128.6	16.8	609.8	1071.6	94.9	11.984
11	59.776	21.204	1387.0	20.0	599.1	1252.0	90.2	12.821
12	59.765	26.103	1560.0	23.2	586.0	1422.1	91.2	13.594
13	59.760	32.917	1967.2	30.0	557.5	1750.1	88.9	15.233
14	59.759	36.057	2154.7	33.3	541.6	1890.9	87.8	15.984
15	59.758	37.522	2242.3	36.6	503.8	1930.9	86.1	16.781
16	59.756	37.442	2237.4	40.0	457.5	1915.7	85.6	17.646
17	59.757	37.382	2233.9	43.2	411.9	1864.7	83.5	18.375
18	59.756	37.047	2213.8	46.9	368.3	1808.1	81.7	19.187
19	59.757	37.104	2217.3	50.6	330.3	1748.3	78.8	20.000
20	59.757	37.344	2231.6	53.8	300.2	1691.1	75.8	20.797
21	59.759	37.264	2226.8	57.1	272.4	1629.5	73.2	21.578
22	59.757	36.815	2199.9	68.5	186.3	1336.1	60.7	23.984
23	59.757	36.780	2197.8	70.0	176.2	1289.1	58.6	24.291
24	59.760	35.320	2110.7	80.0	104.5	874.77	41.5	26.441
25	59.759	36.380	2174.0	83.4	91.7	800.68	36.8	27.187
26	59.760	36.625	2188.7	87.8	68.9	633.12	28.9	28.000
27	59.761	36.367	2173.3	74.8	20.9	163.79	7.5	28.797

Specifications

Rated Power (Watts)	1000
Rated Torque (N.m)	16
Peak Torque (N.m)	88
Operating Voltage (Volts)	60
Rated Current (A)	16
Peak Current (A)	38
Rated RPM	610

Exploded View



Isometric View



Product Description

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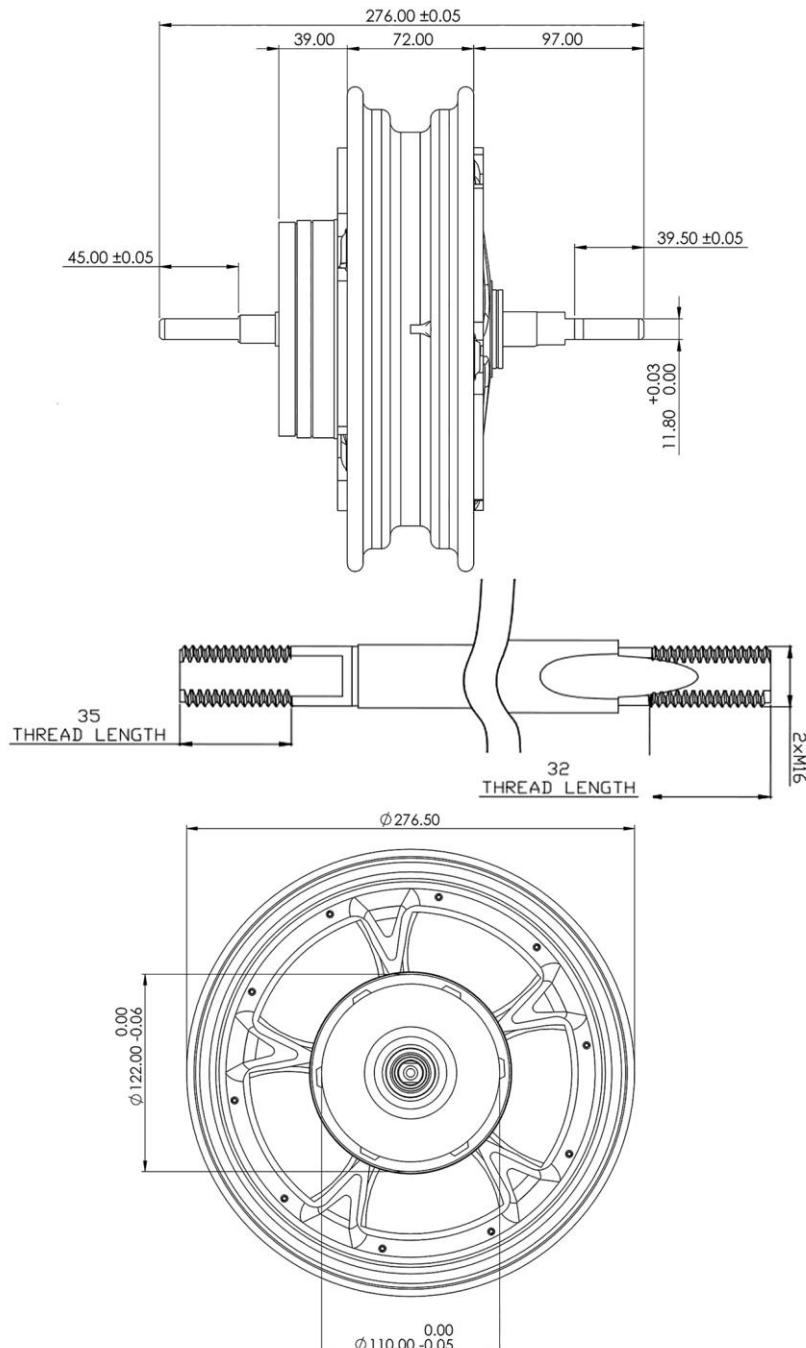
Product Features

- Rear wheel drive
- Low speed Motors support up to 45 km/h*
- Nominal output up to 1000 W*
- 16 Nm nominal and 88 Nm peak torque
- Weight: 9.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

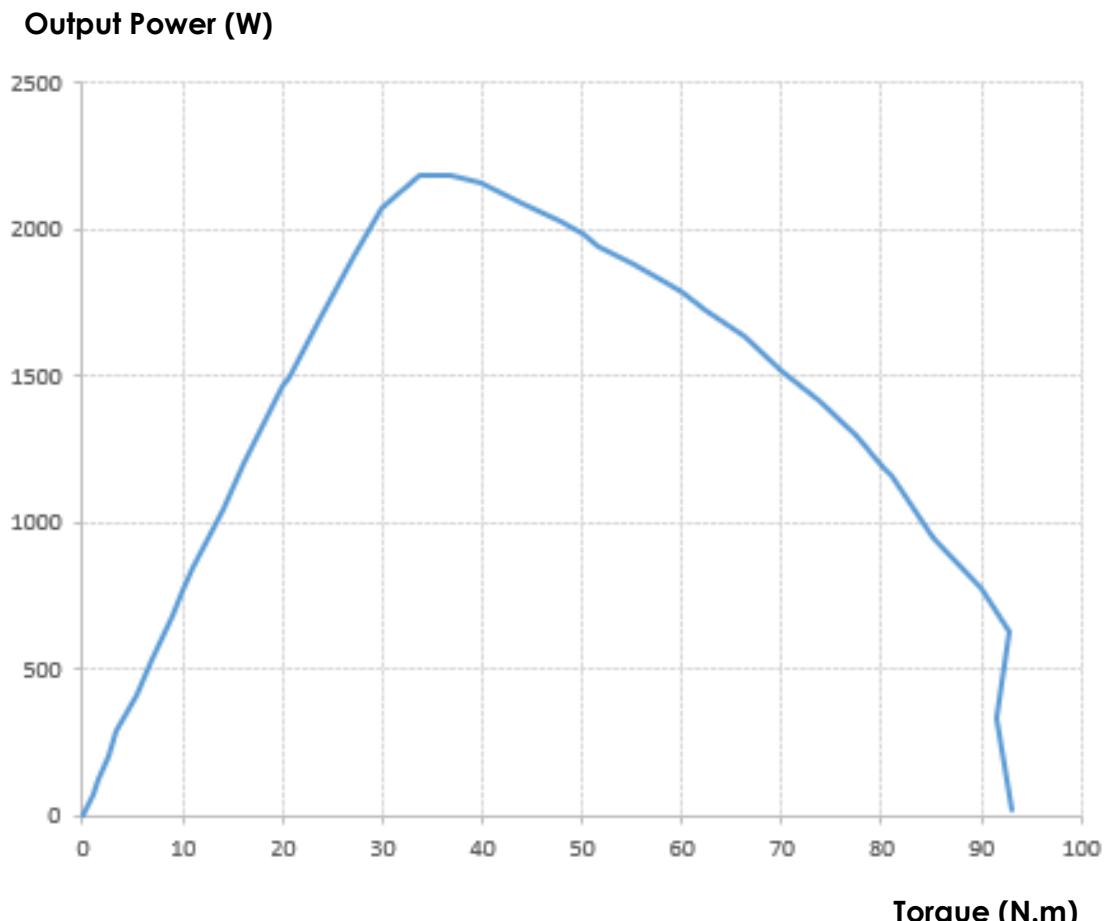
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

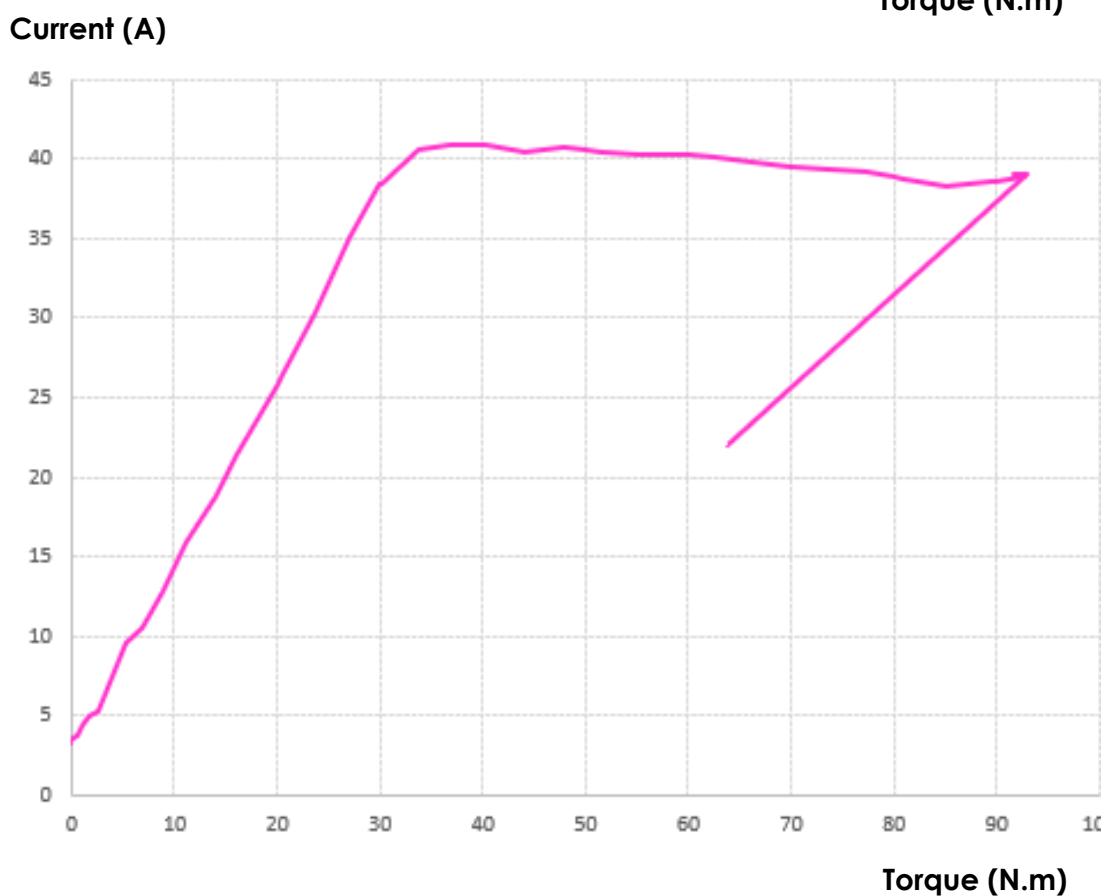
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

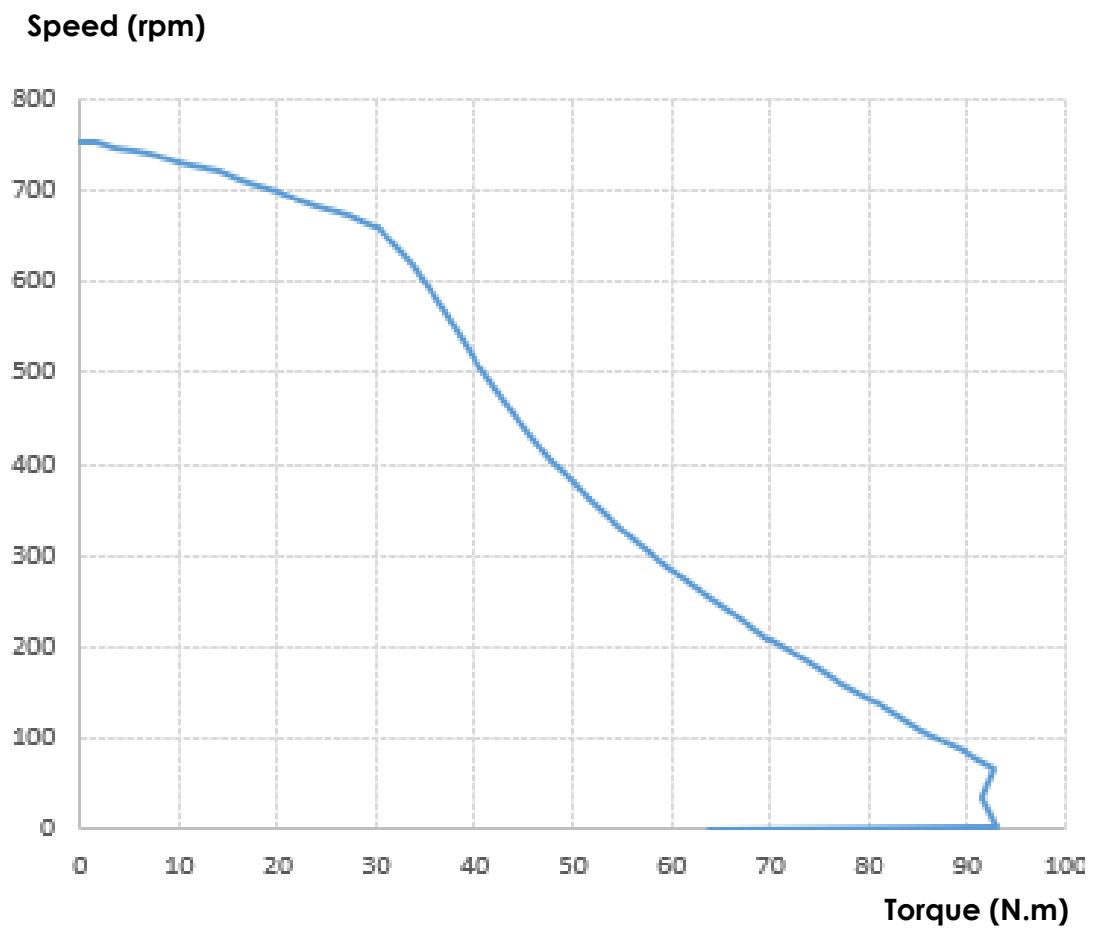
**Output Power (W)
vs Torque (N.m)**



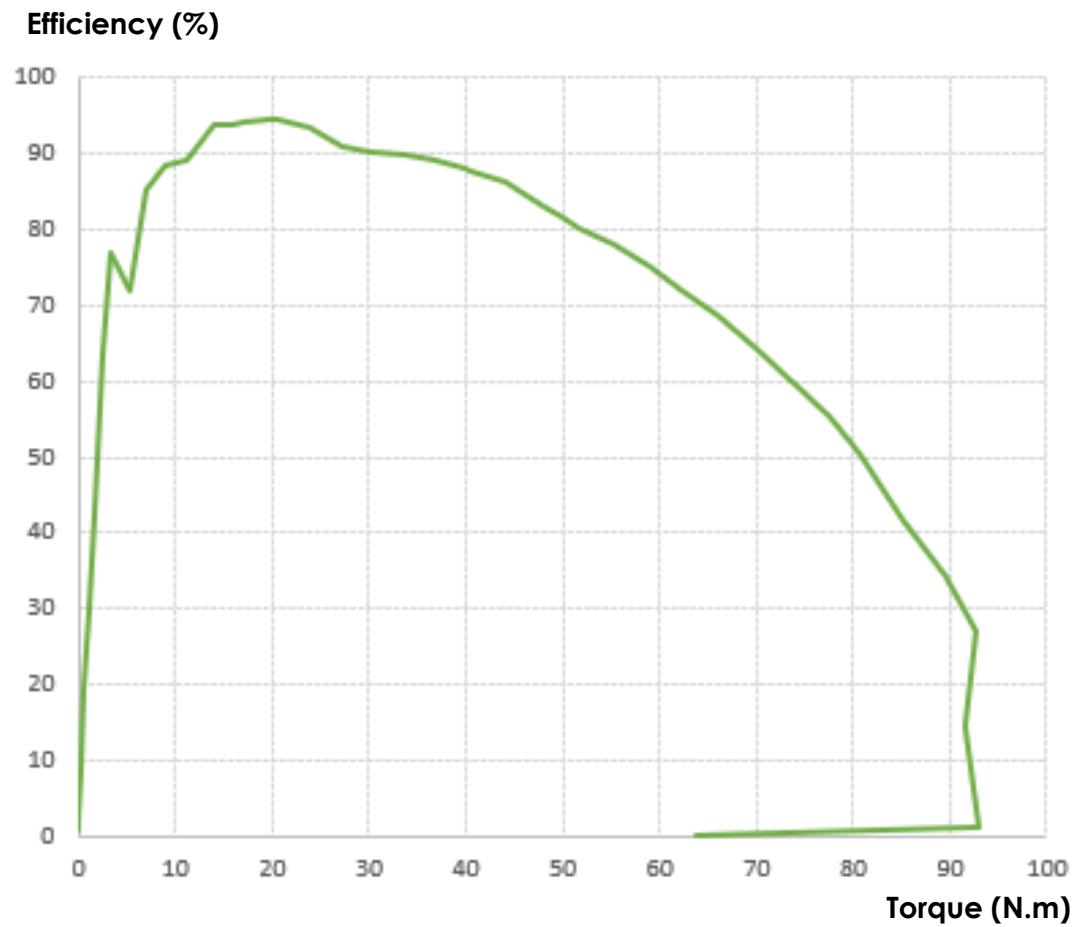
**Current (A)
vs Torque (N.m)**



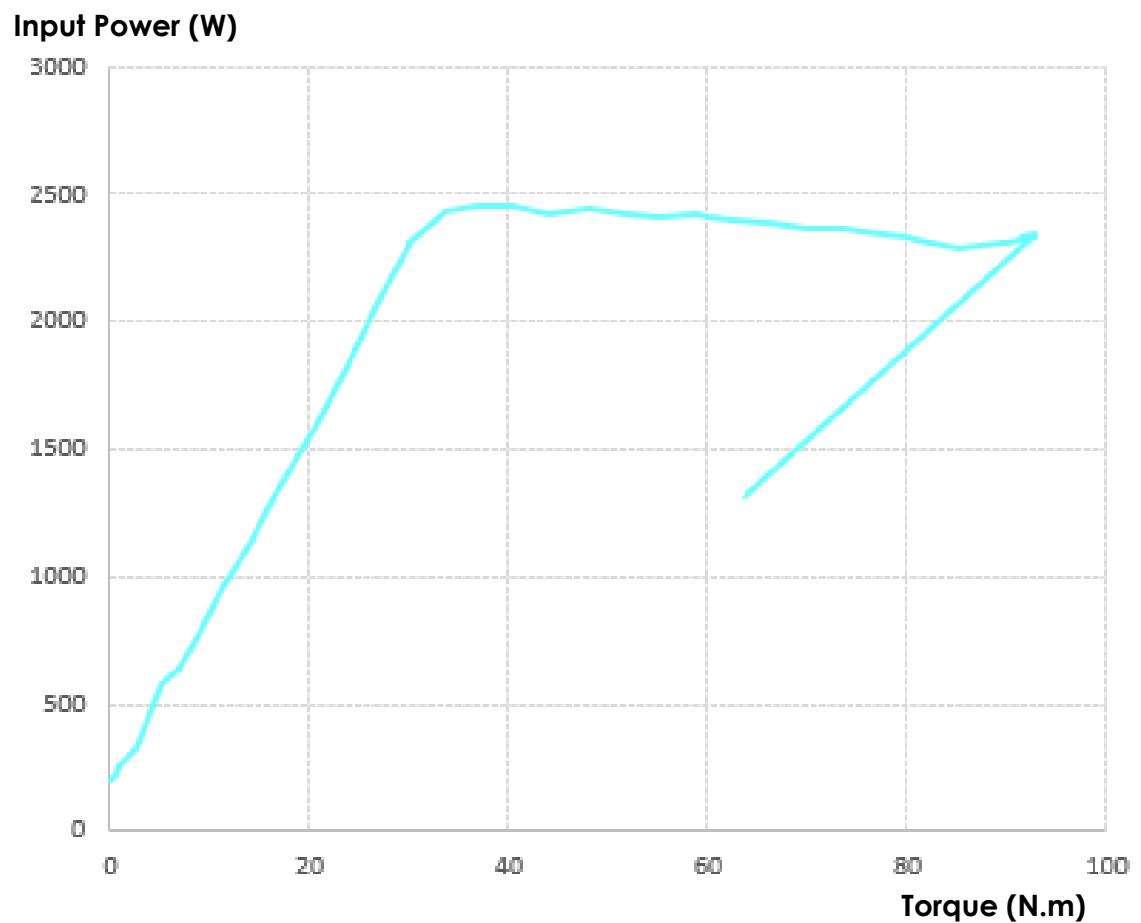
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



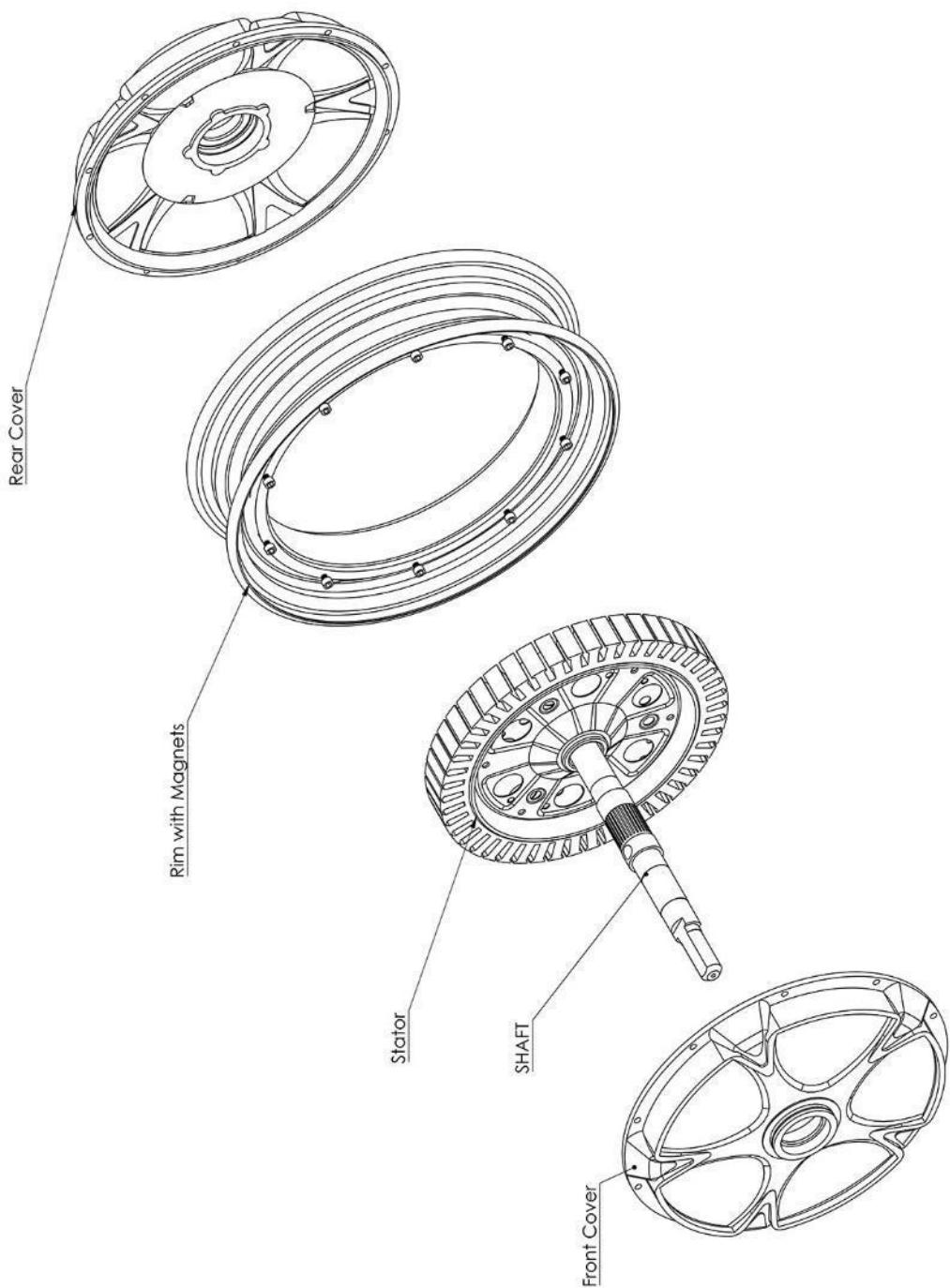
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	59.939	3.4997	209.77	0.2	753.9	17.634	8.4	3.1720
2	59.946	4.3033	257.97	1.0	752.6	76.312	29.6	4.7820
3	59.952	5.3094	318.31	2.6	750.0	201.59	63.3	6.3910
4	59.956	6.3397	380.10	3.3	747.3	293.21	77.1	7.1720
5	59.953	9.6086	576.07	5.3	743.8	414.31	71.9	7.9850
6	59.952	10.511	630.16	6.9	741.7	537.19	85.2	8.7820
7	59.951	12.835	769.47	8.9	733.7	681.14	88.5	9.5780
8	59.951	14.351	860.32	10.0	731.1	765.23	88.9	9.9765
9	59.951	15.866	951.17	11.1	728.4	849.31	89.3	10.375
10	59.950	18.730	1122.9	14.0	719.6	1051.7	93.7	11.172
11	59.949	21.314	1277.7	16.1	711.4	1200.0	93.9	11.720
12	59.948	22.637	1357.0	17.2	707.2	1275.9	94.0	12.000
13	59.946	26.478	1587.2	20.6	695.3	1500.5	94.5	12.797
14	59.946	30.322	1817.7	23.8	683.5	1701.0	93.6	13.578
15	59.943	38.352	2299.0	30.0	660.6	2076.9	90.3	15.145
16	59.941	40.890	2451.0	36.9	567.2	2189.2	89.3	16.782
17	59.942	40.914	2452.5	40.0	516.1	2157.2	88.0	17.487
18	59.942	40.470	2425_9	44.1	452.4	2087.5	86.1	18.391
19	59.939	40.571	2431.8	50.0	379.4	1983.2	81.6	19.633
20	59.941	40.302	2415.7	55.2	326.6	1886.5	78.1	20.782
21	59.942	40.238	2411.9	60.0	284.9	1786.9	74.1	21.828
22	59.944	39.837	2388.0	66.1	236.1	1635.4	68.5	23.172
23	59.942	39.555	2371.0	69.9	208.1	1523.8	64.3	24.000
24	59.942	38.871	2330.1	80.0	143.2	1197.5	51.4	26.158
25	59.943	38.613	2314.6	90.0	82.3	775.14	33.5	28.076
26	59.944	38.921	2333.1	92.8	65.0	631.73	27.1	28.782
27	59.943	39.112	2344.5	93.0	2.5	24.139	1.0	30.375

Specifications

Rated Power (Watts)	1200
Rated Torque (N.m)	16
Peak Torque (N.m)	93
Operating Voltage (Volts)	60
Rated Current (A)	21
Peak Current (A)	40
Rated RPM	710

Exploded View



Isometric View



Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

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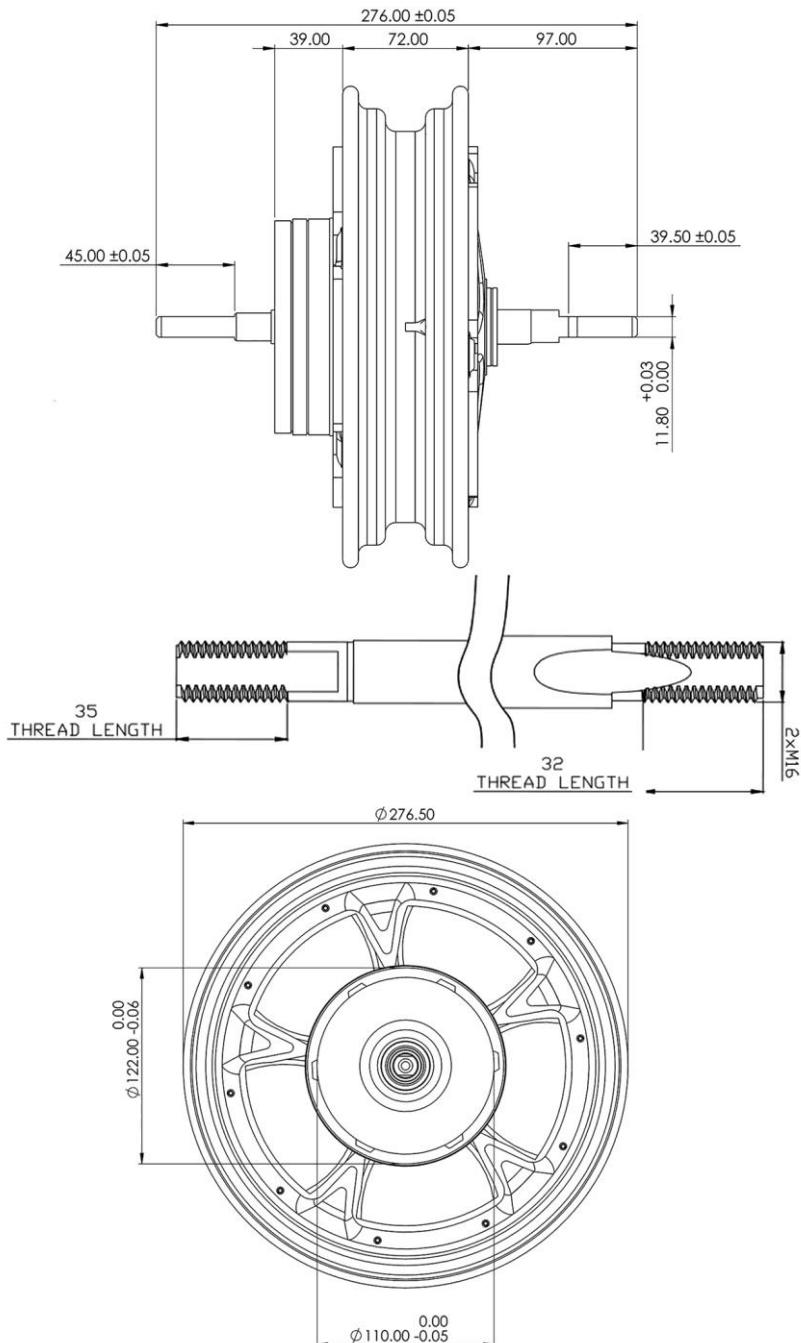
Product Features

- Rear wheel drive
- Low speed Motors support up to 50 km/h*
- Nominal output up to 1200 W*
- 19.5 Nm nominal and 96 Nm peak torque
- Weight: 10.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 276.5mm

Shaft Length: 276mm

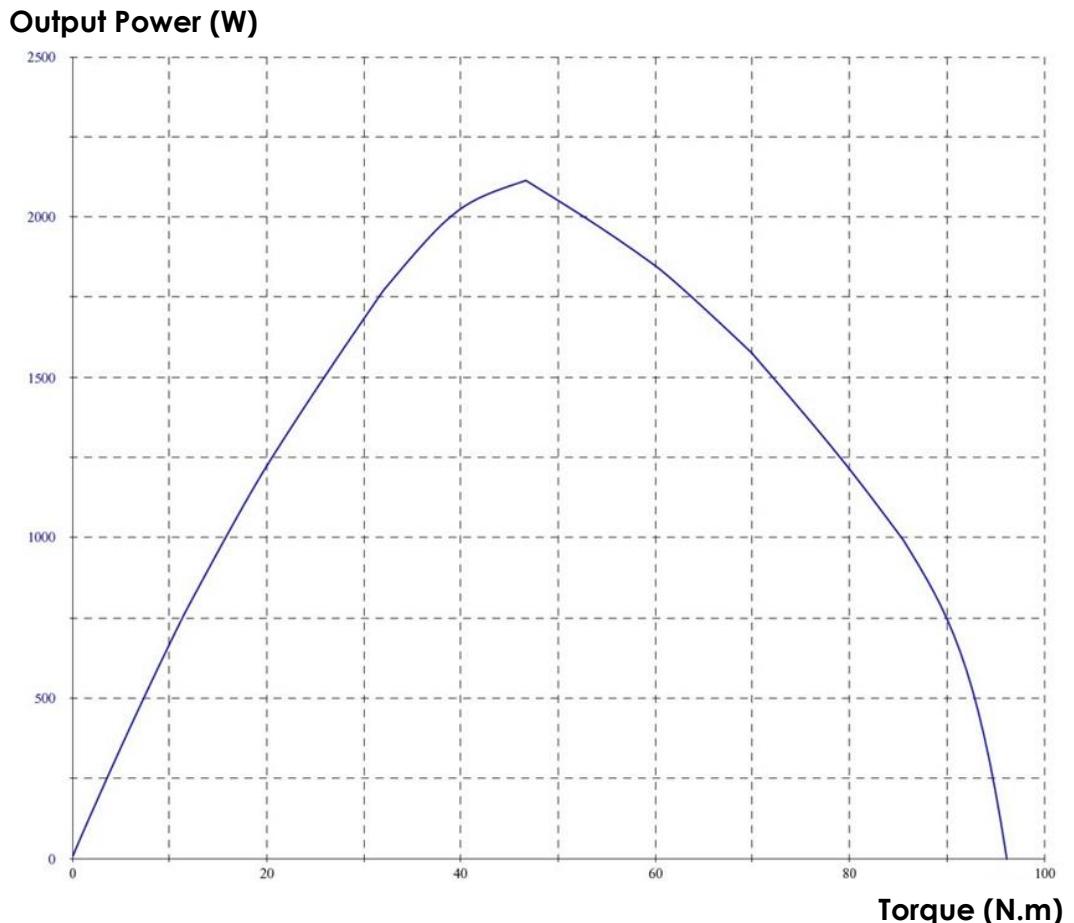
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

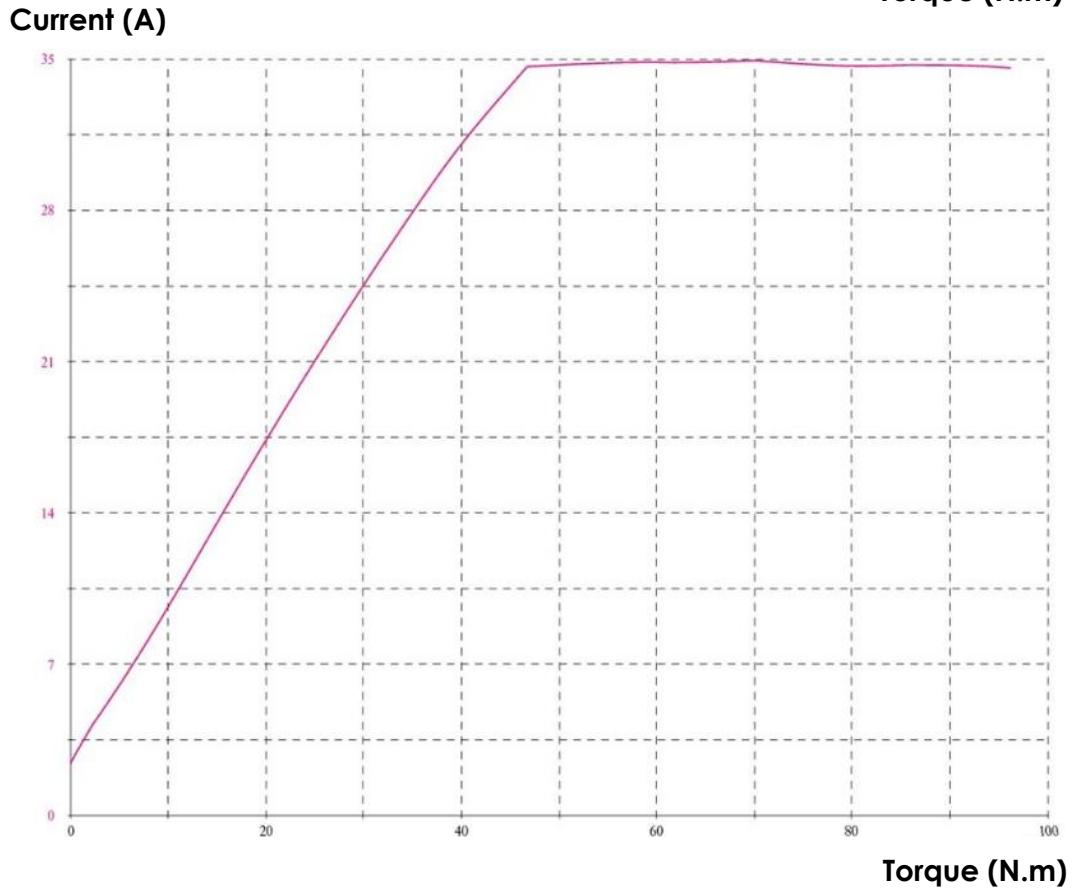
Tyre Types: Tubeless

Suitable Tyre Size: 90/100-10

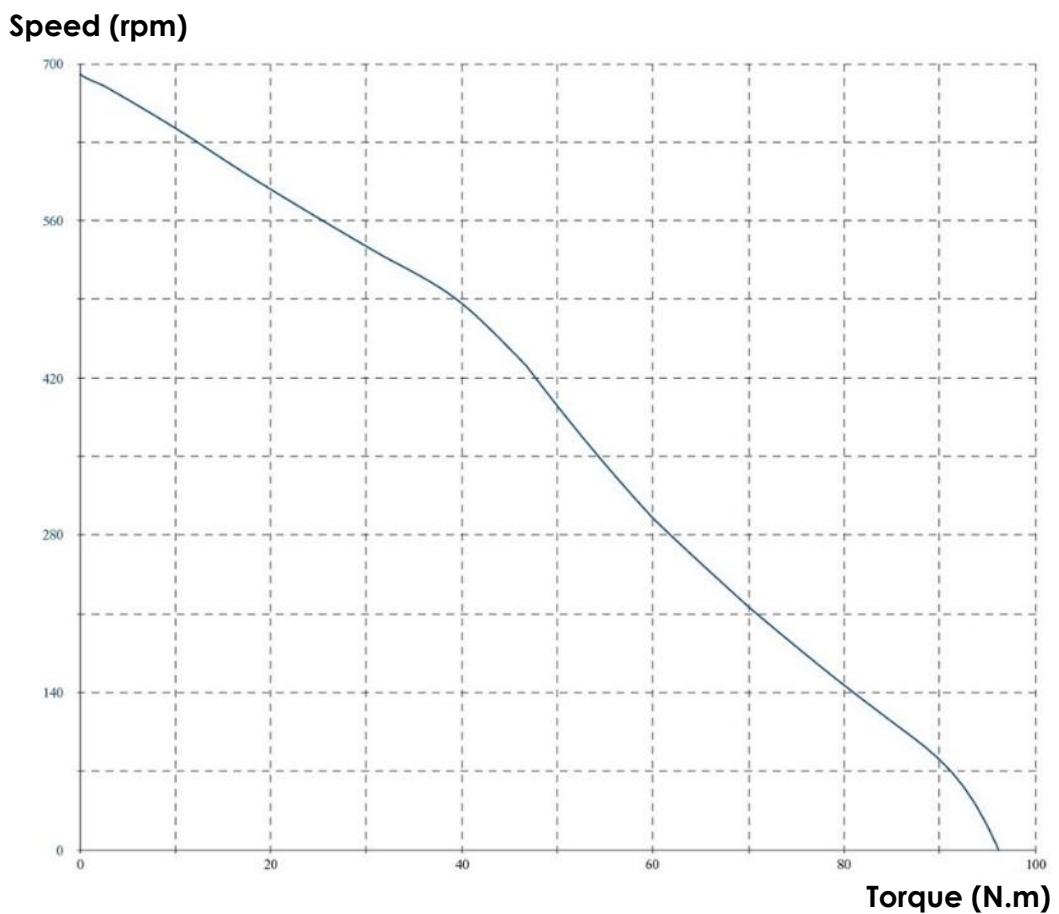
**Output Power (W)
vs Torque (N.m)**



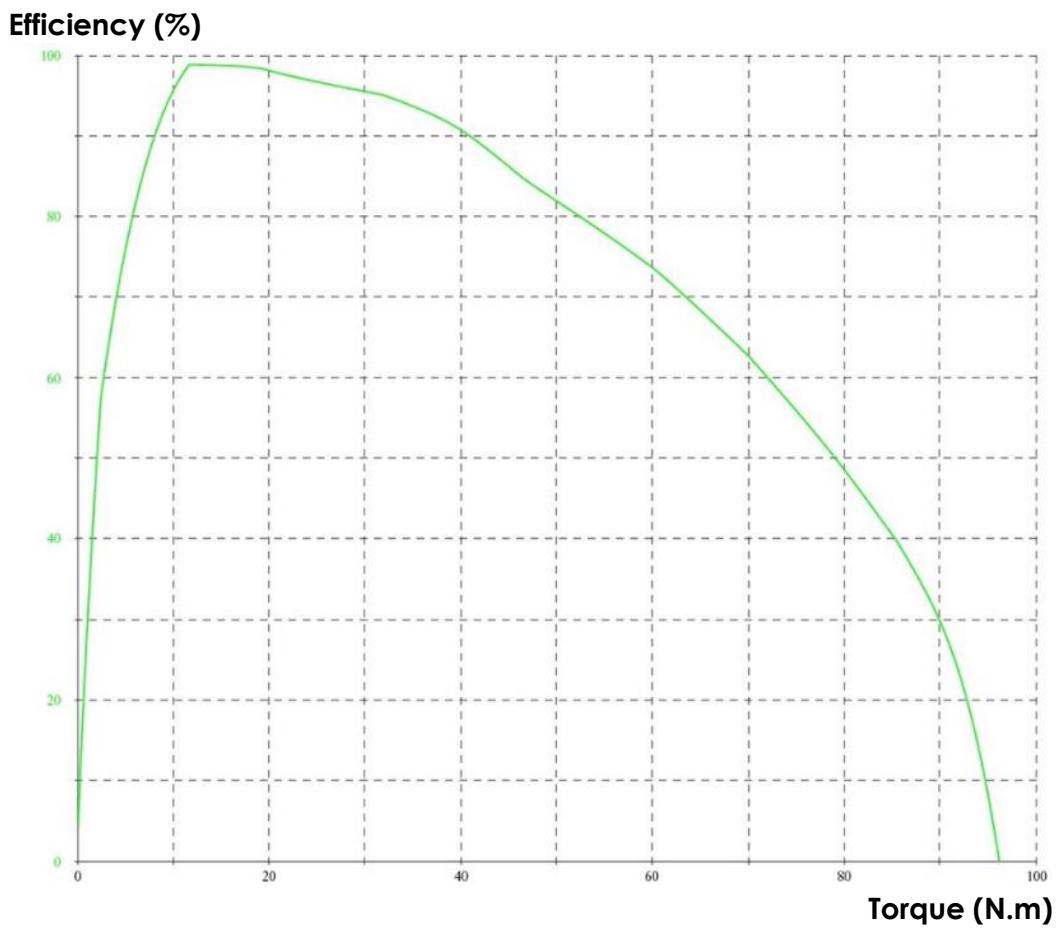
**Current (A)
vs Torque (N.m)**



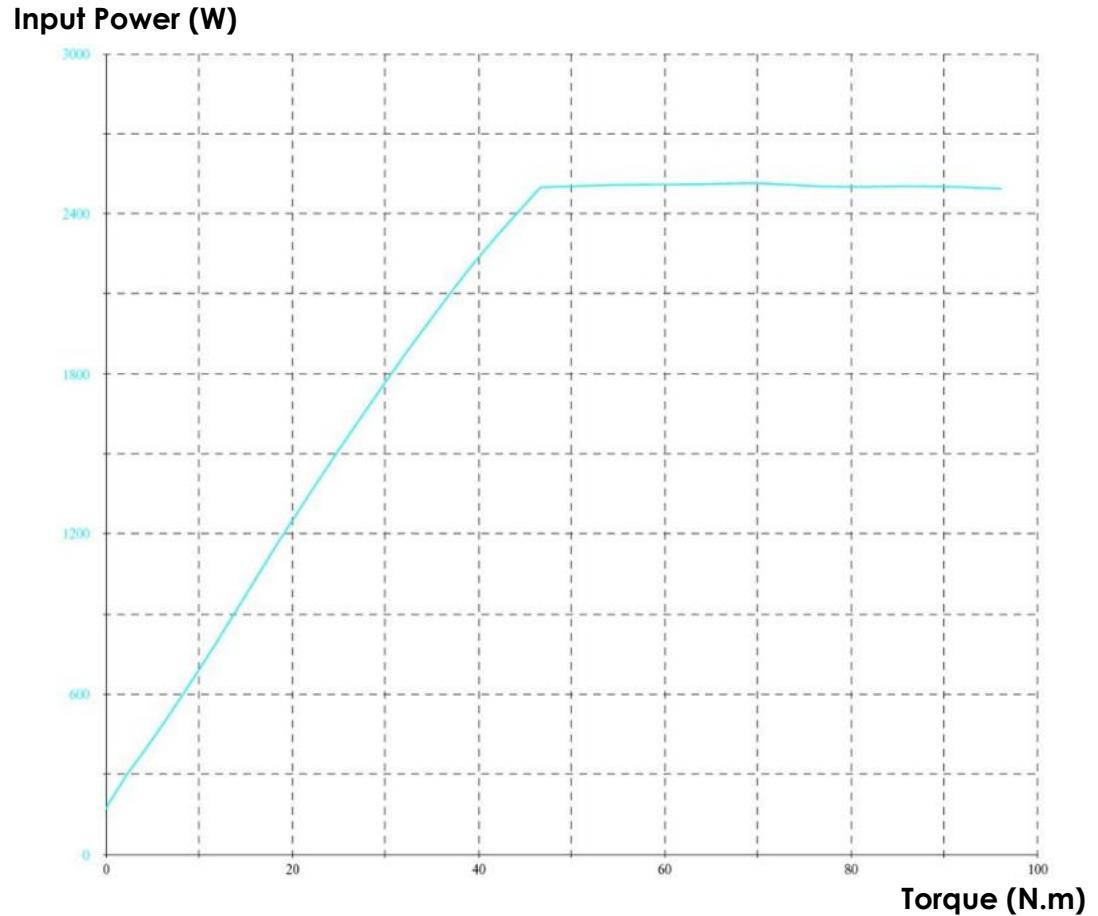
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



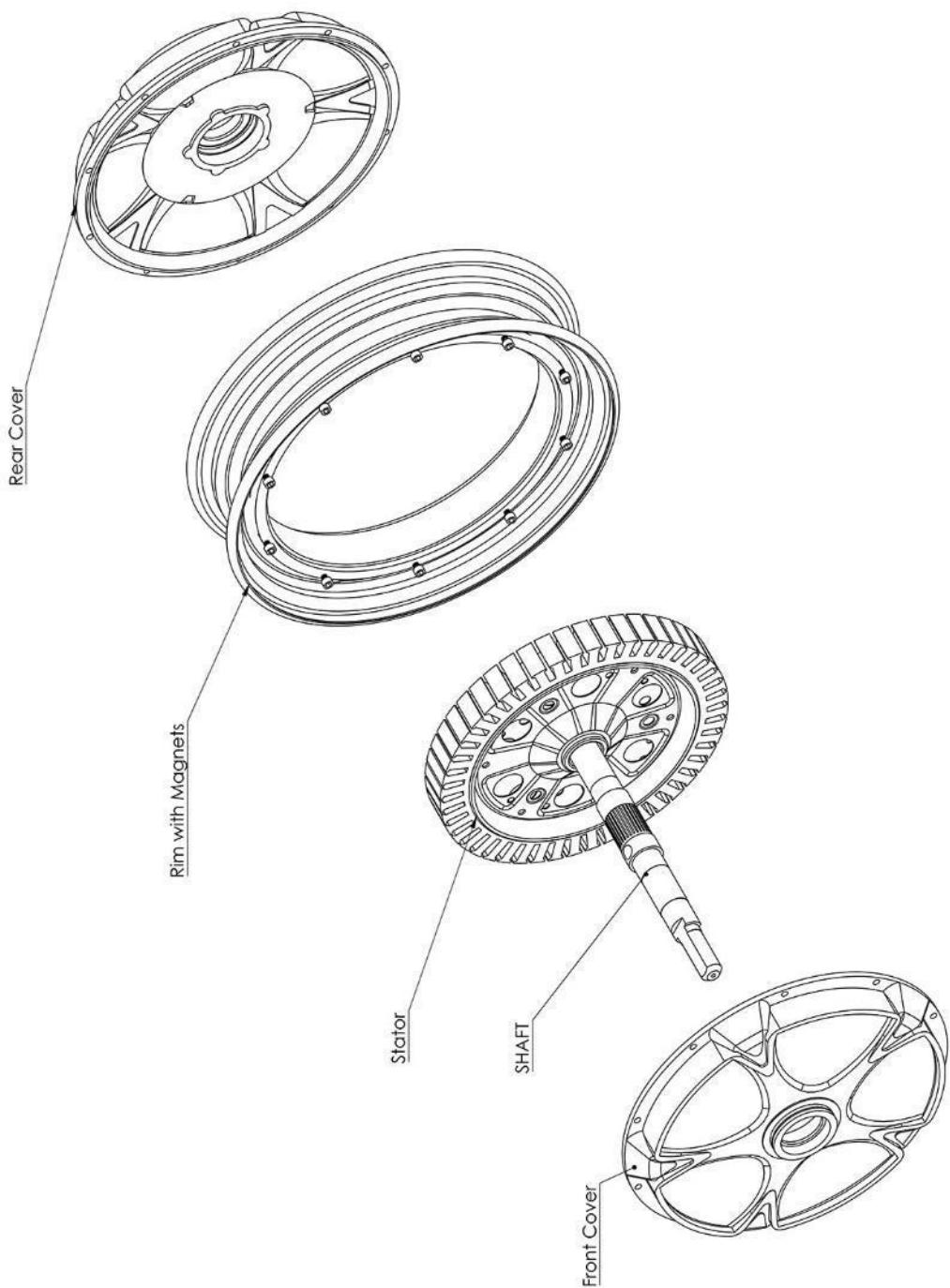
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	72.101	2.3433	168.96	0.1	690	7.1462	4.2	0
2	72.096	2.4626	177.54	0.1	689.6	6.5155	3.7	3
3	72.085	2.9066	209.52	0.7	687.1	52.147	24.9	6
4	72.119	4.2019	303.04	2.4	680.6	174.14	57.5	8.984
5	72.133	6.6742	481.43	6.2	662.7	431.4	89.6	11.984
6	72.132	9.5621	689.71	10	641.9	668.2	96.1	14.095
7	72.132	10.778	777.4	11.6	633.2	767.9	98.8	14.984
8	72.13	15.74	1135.4	17.9	598.6	1121.3	98.8	18
9	72.13	16.949	1222.6	19.5	590.4	1200	98.3	18.717
10	72.13	17.326	1249.8	20	587.8	1224.5	98.1	18.941
11	72.131	20.796	1500	24.6	564.2	1450.4	96.7	21
12	72.13	24.457	1764.1	30	537.6	1682.1	95.5	23.189
13	72.13	25.813	1861.9	32	527.8	1767.9	95	24
14	72.128	30.818	2222.8	39.4	494.5	2038	91.7	27
15	72.128	31.133	2245.5	40	489.3	2044	91.1	27.247
16	72.126	34.648	2499.1	46.7	431.4	2111.5	84.5	30
17	72.127	34.719	2504.2	50	394.8	2051.6	81.9	31.286
18	72.128	34.814	2511.1	54.4	345.9	1971.7	78.5	33
19	72.127	34.795	2509.7	60	295.9	1847.1	73.6	35.127
20	72.127	34.787	2509.1	62.3	275.3	1795.9	71.6	36
21	72.129	34.886	2516.3	70	215.3	1577.2	62.7	39
22	72.129	34.886	2516.3	70	215.3	1577.2	62.7	39
23	72.128	34.624	2497.3	78.4	156.3	1282.6	51.4	41.984
24	72.128	34.64	2498.5	80	146	1217.2	48.8	42.664
25	72.128	34.696	2502.5	85.5	110.8	992.45	39.7	45
26	72.128	34.676	2501.1	90	82.6	769.81	30.8	46.8
27	72.128	34.663	2500.1	93	63.8	621.39	24.9	48
28	72.128	34.586	2494.6	96.2	0	0	0	51

Specifications

Rated Power (Watts)	1200
Rated Torque (N.m)	19.5
Peak Torque (N.m)	96
Operating Voltage (Volts)	72
Rated Current (A)	16.5
Peak Current (A)	34
Rated RPM	640

Exploded View



Isometric View



Product Description

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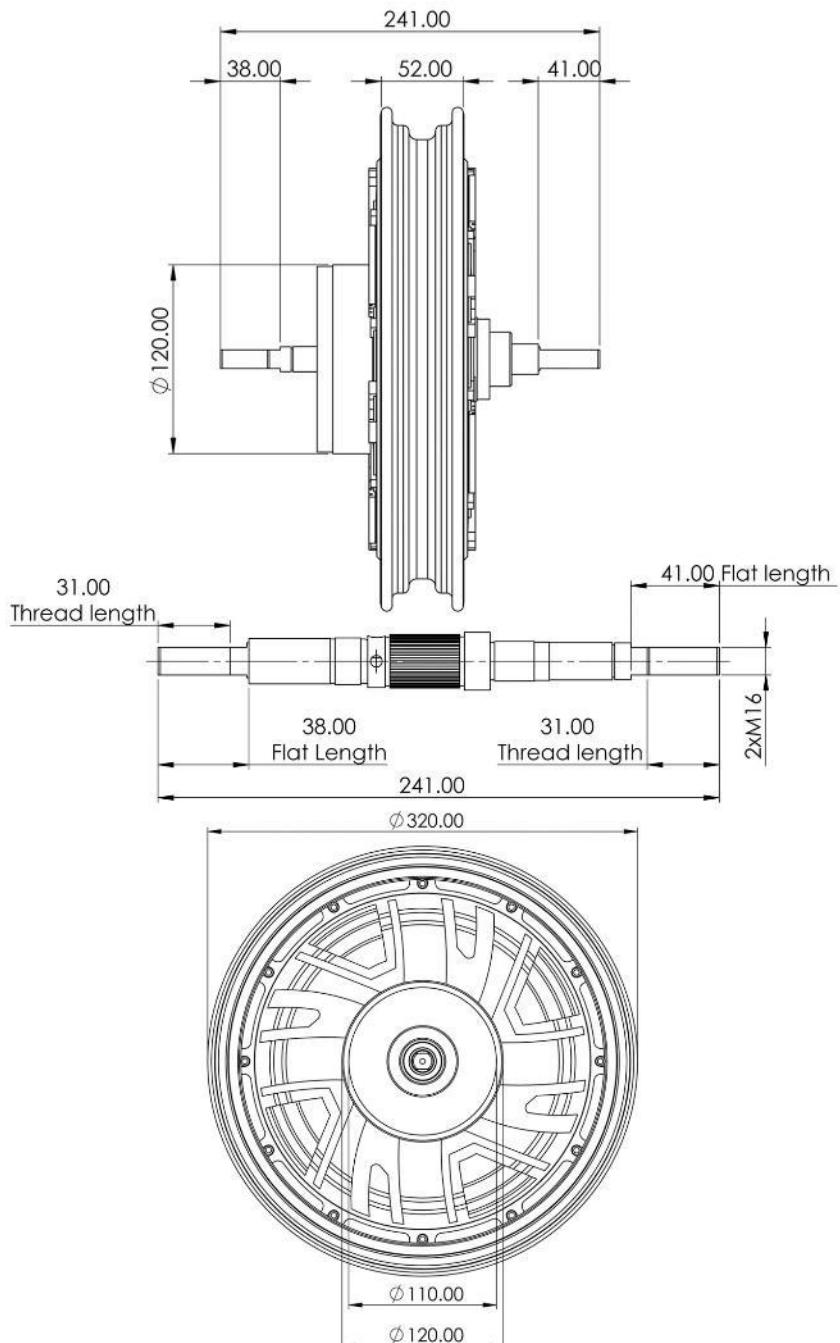
Product Features

- Rear wheel drive
- Low speed Motors support up to 20 km/h*
- Nominal output up to 250 W*
- 9.6 Nm nominal and 52 Nm peak torque
- Weight: 9.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 320mm

Shaft Length: 241mm

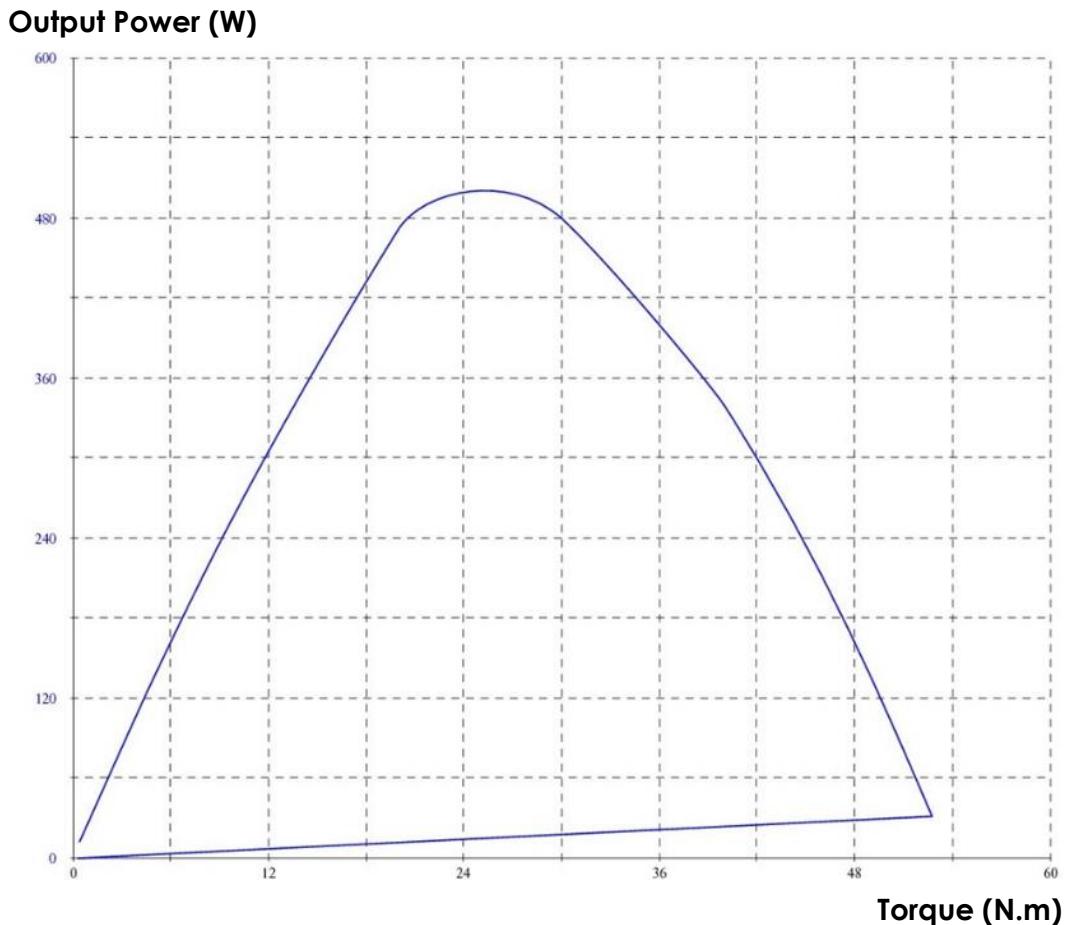
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

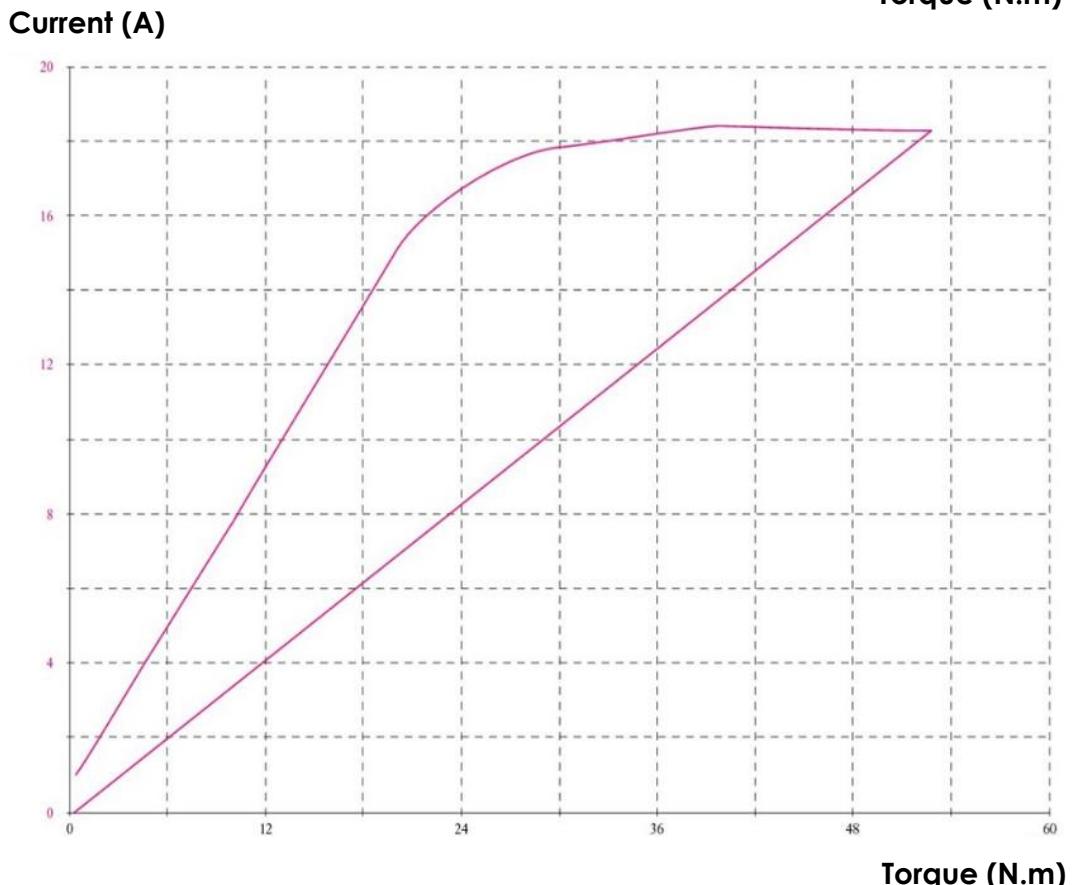
Tyre Types: Tubeless

Suitable Tyre Size: 90/90-12

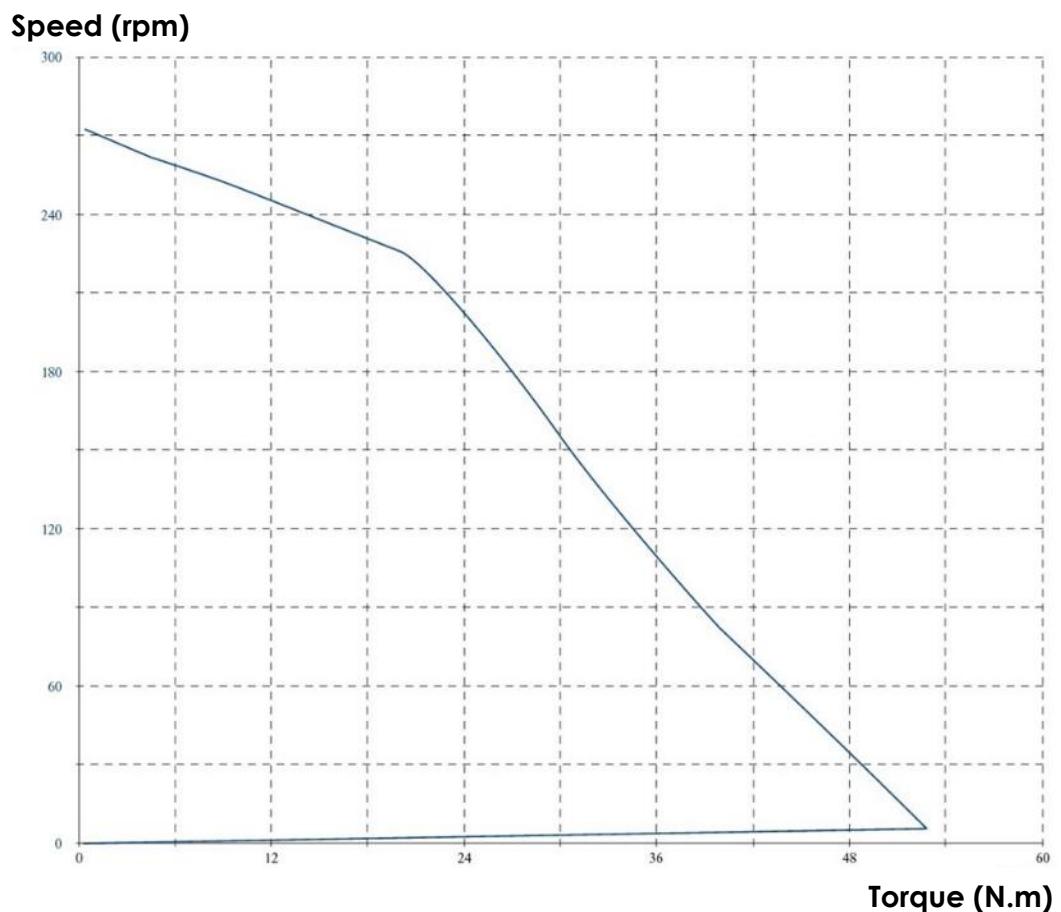
**Output Power (W)
vs Torque (N.m)**



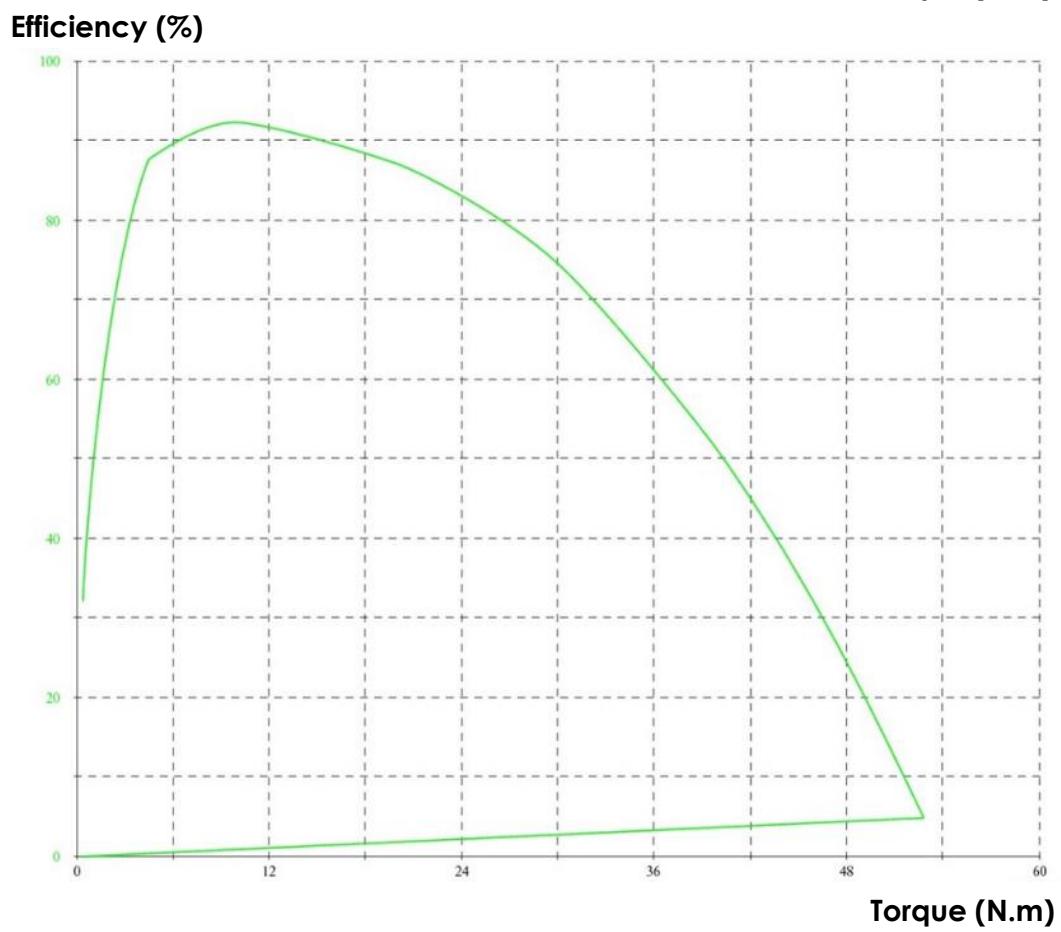
**Current (A)
vs Torque (N.m)**



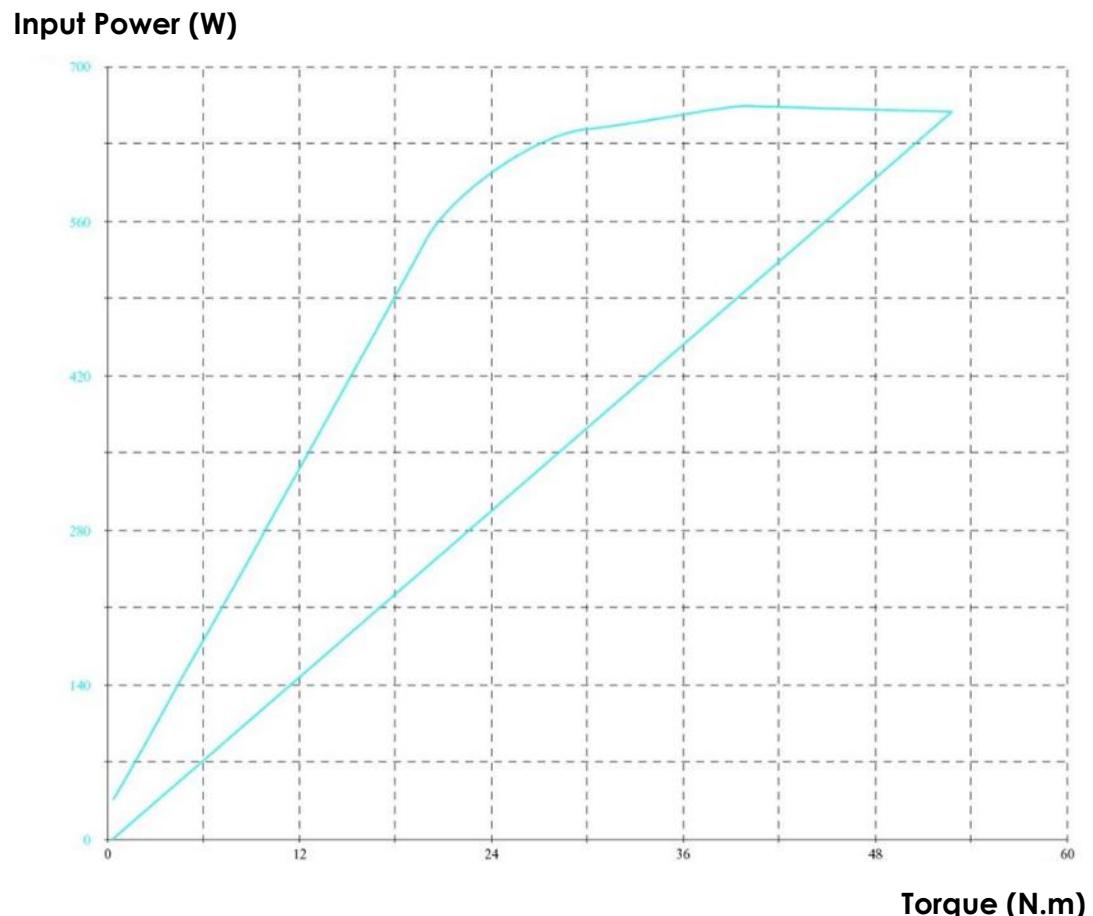
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



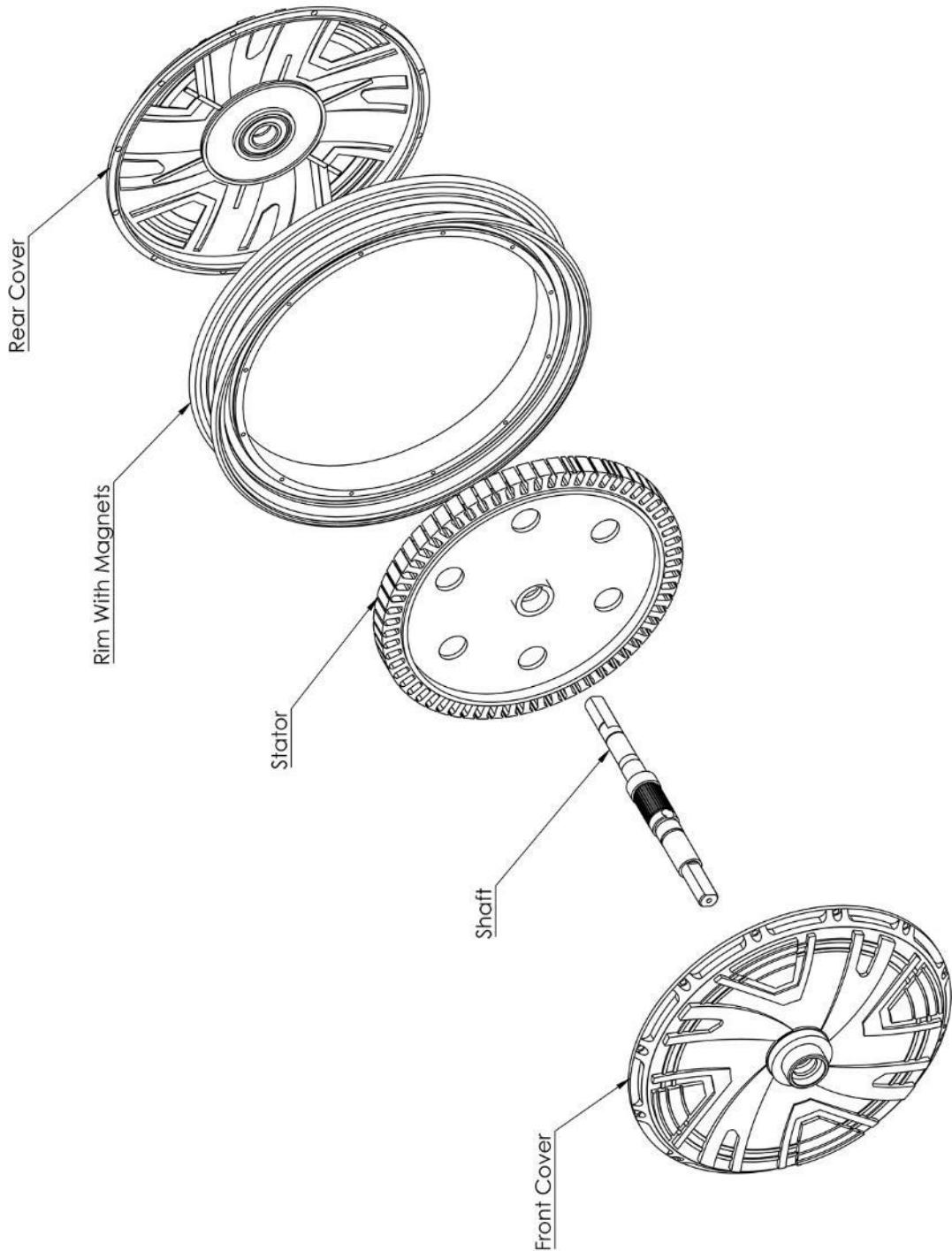
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	36.105	1.0125	36.556	0.4	272.4	11.73	32.1	0
2	36.101	1.1644	42.034	0.7	271.9	18.925	45	2.984
3	36.072	2.1631	78.029	2.1	267.9	58.941	75.5	5.984
4	36.011	3.913	140.91	4.5	261.6	123.48	87.6	8.984
5	36.111	6.2894	227.12	7.9	254.6	210.08	92.5	12
6	36.107	7.5084	271.11	9.6	250.7	250	92.3	13.332
7	36.106	7.7992	281.6	10	249.8	259.52	92.2	13.65
8	36.103	9.0353	326.2	11.7	245.8	300	92	15
9	36.113	12.348	445.93	16.3	234.6	399.62	89.6	17.984
10	36.112	15.061	543.89	20	225.8	471.86	87	20.13
11	36.111	16.161	583.6	21.5	222.3	501.14	85.9	21
12	36.112	17.707	639.45	26.8	183	514.16	80.4	23.984
13	36.111	17.822	643.6	30	155.2	479.11	74.5	25.558
14	36.111	17.927	647.37	32.9	130	447.34	69.1	26.984
15	36.11	18.415	664.97	39	87.6	357.73	53.8	29.984
16	36.11	18.401	664.46	40	81.8	338.83	51	30.413
17	36.111	18.316	661.43	46	46.9	225.42	34.1	32.984
18	36.11	18.281	660.14	50	22.5	110.86	16.8	34.749
19	36.11	18.256	659.23	52.8	5.5	30.664	4.7	35.984
20	36.171	0	0	0.3	0	0	0	39

Specifications

Rated Power (Watts)	250
Rated Torque (N.m)	9.6
Peak Torque (N.m)	52
Operating Voltage (Volts)	36
Rated Current (A)	7.5
Peak Current (A)	18
Rated RPM	250

Exploded View



Isometric View



Product Description

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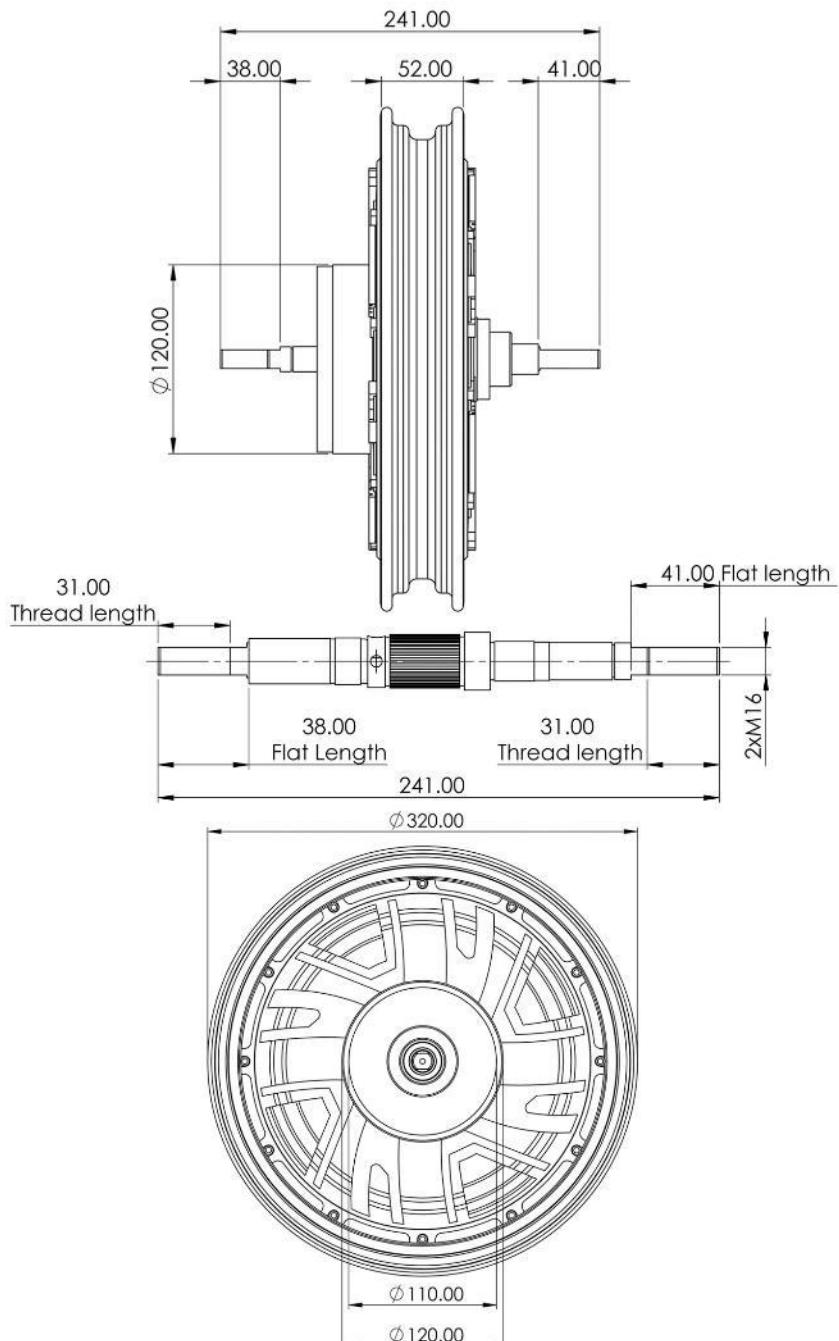
Product Features

- Rear wheel drive
- Low speed Motors support up to 25 km/h*
- Nominal output up to 250 W*
- 6 Nm nominal and 56 Nm peak torque
- Weight: 9.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 320mm

Shaft Length: 241mm

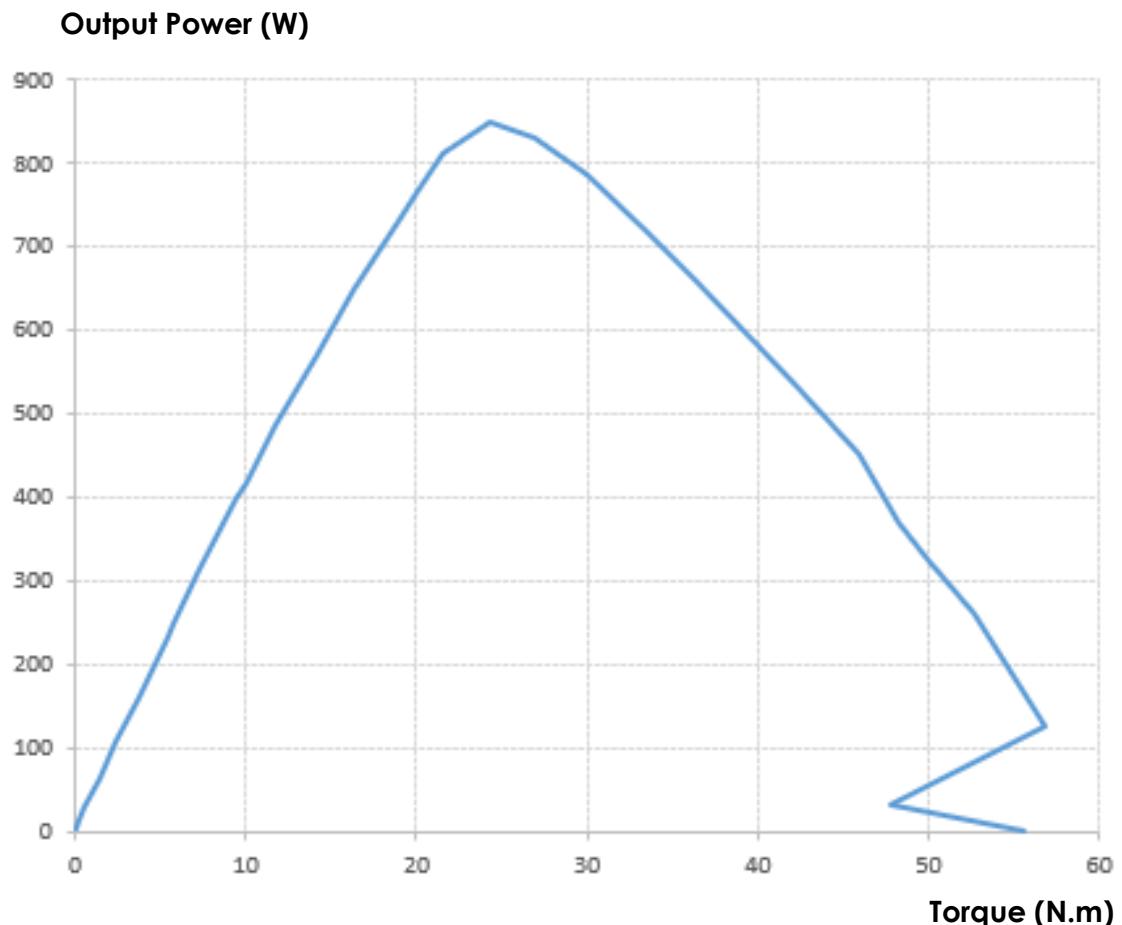
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

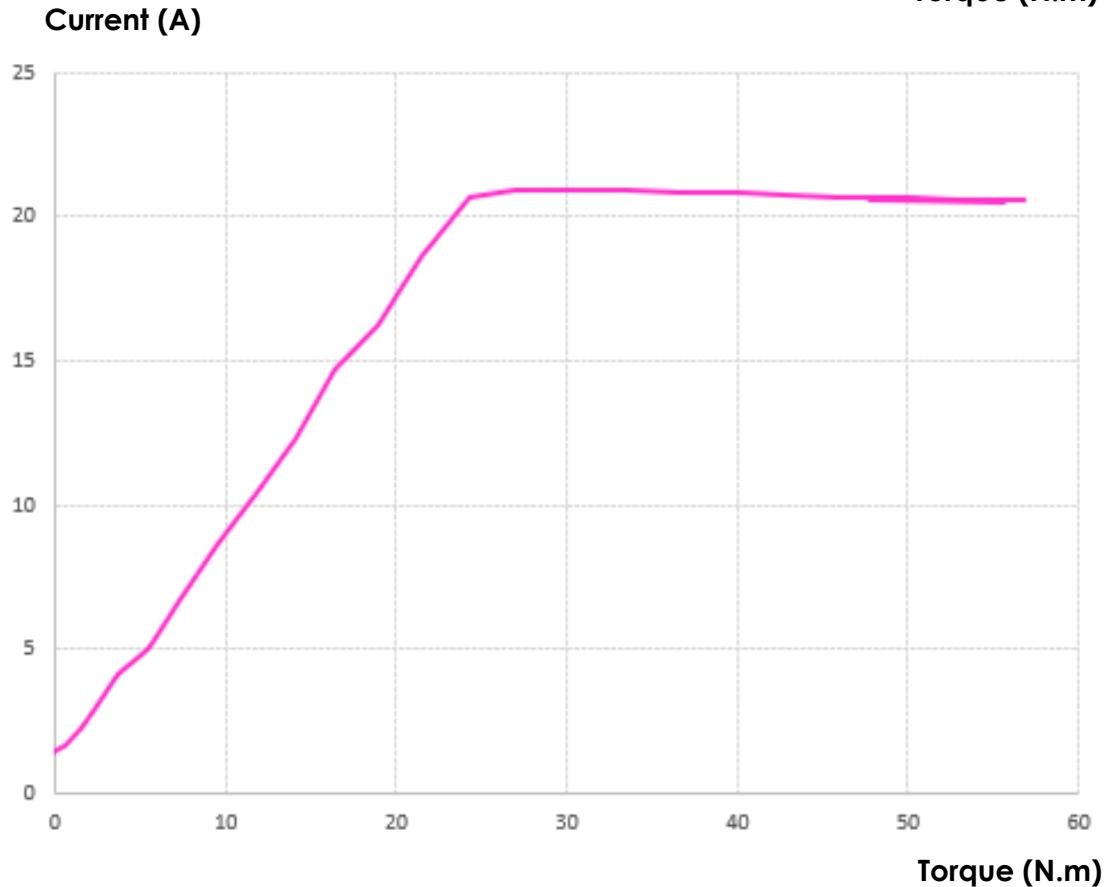
Tyre Types: Tubeless

Suitable Tyre Size: 90/90-12

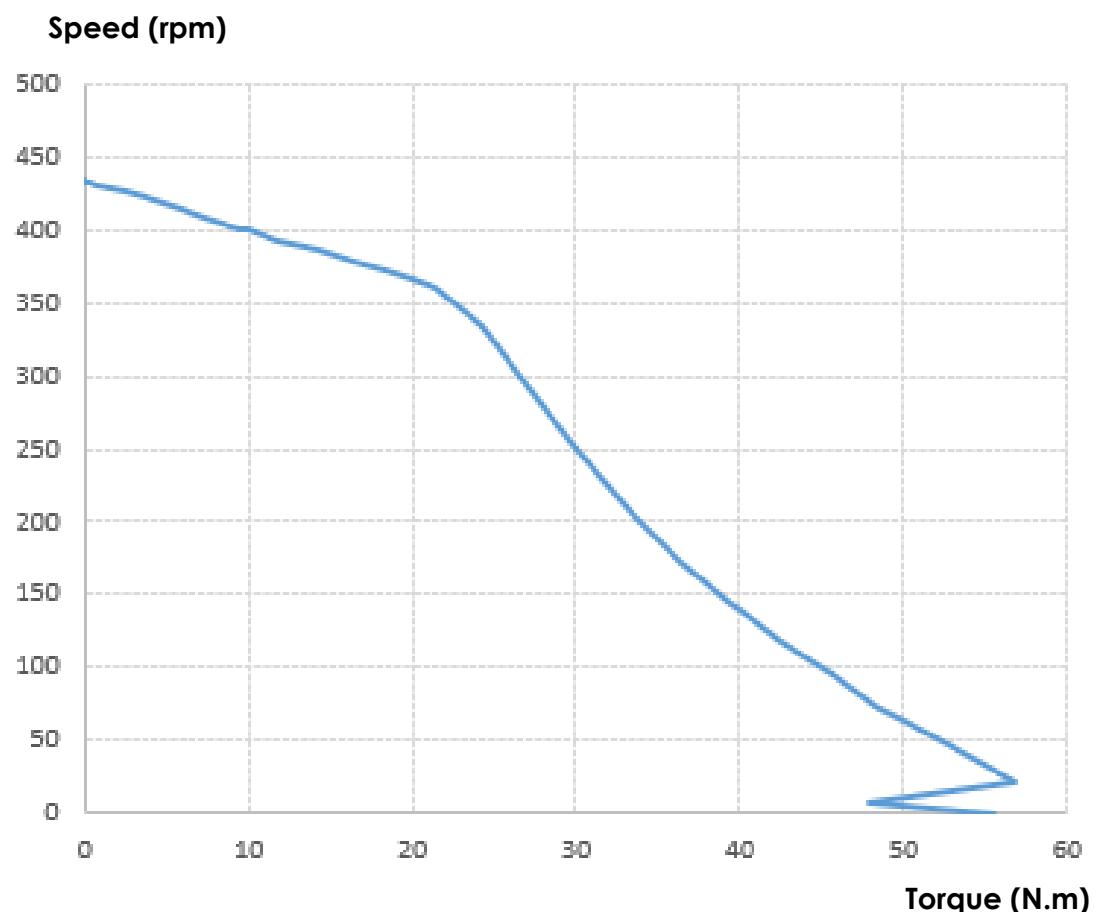
**Output Power (W)
vs Torque (N.m)**



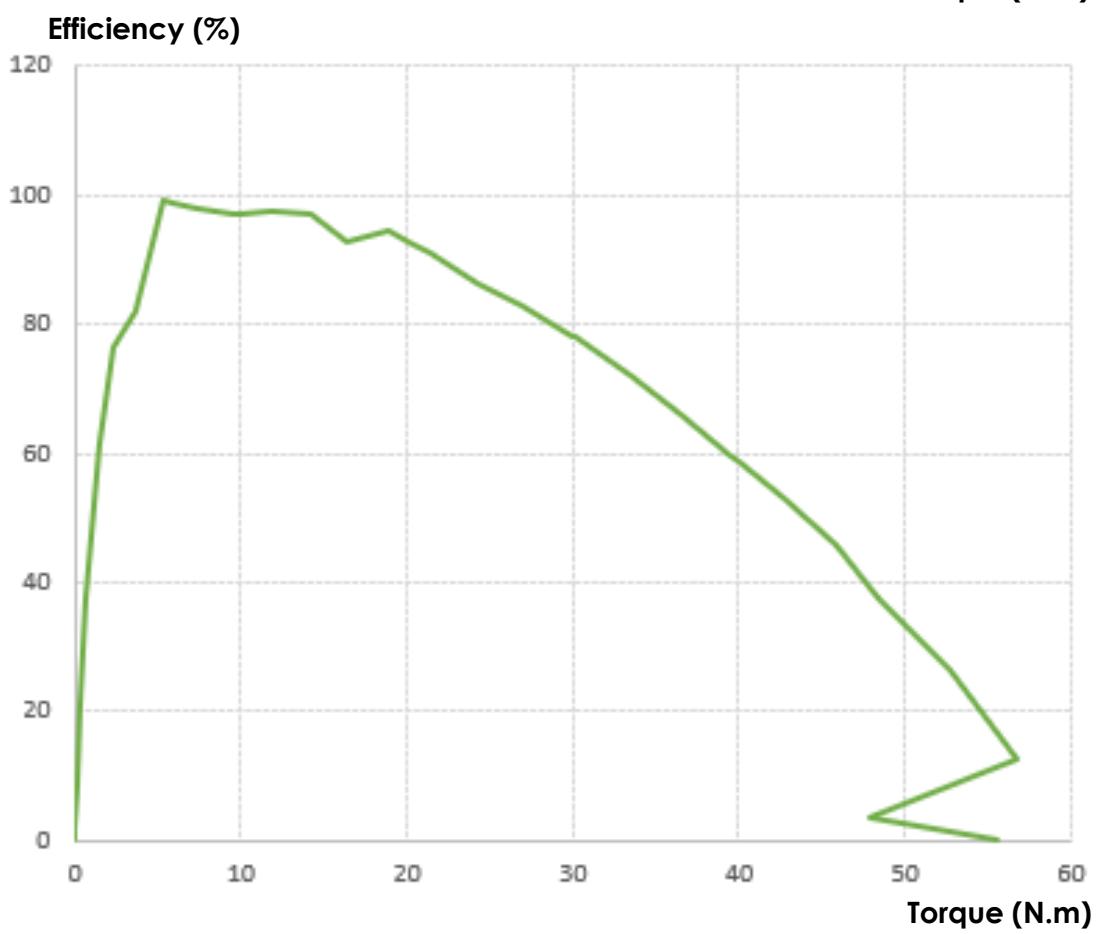
**Current (A)
vs Torque (N.m)**



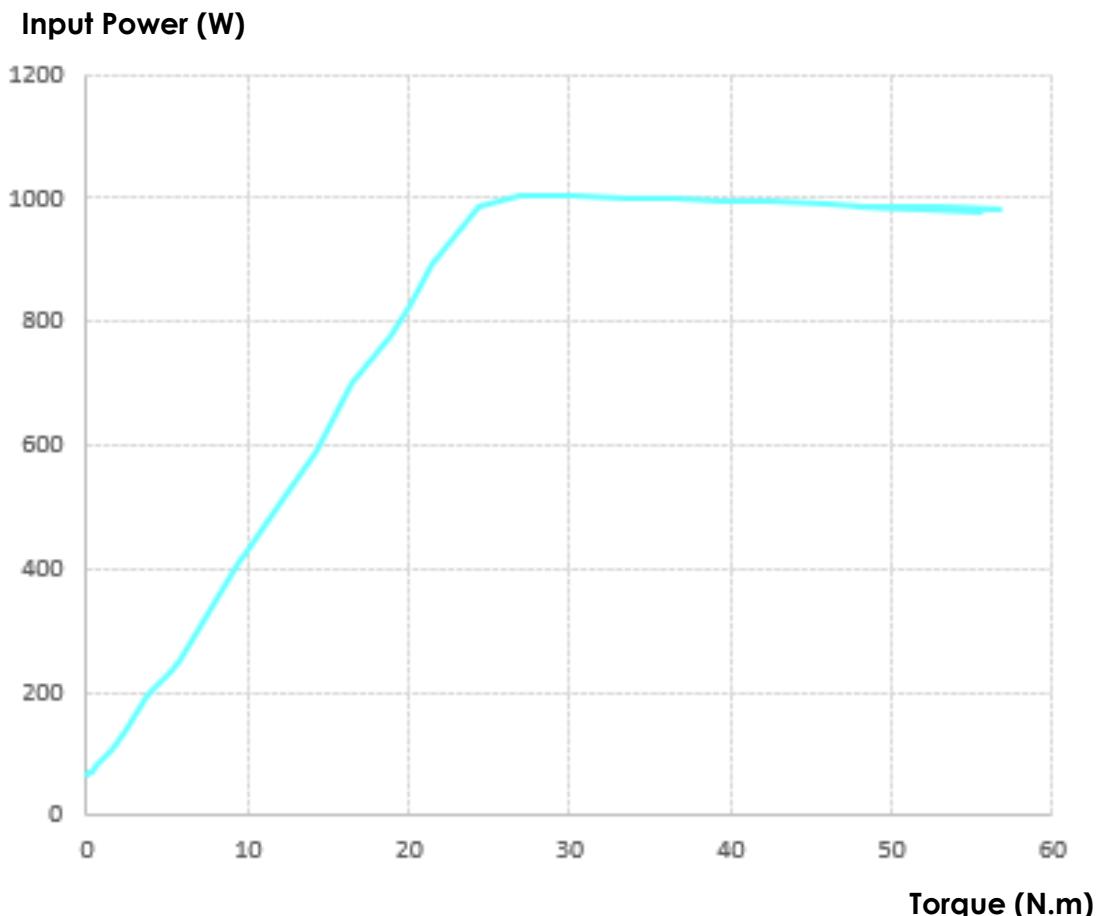
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



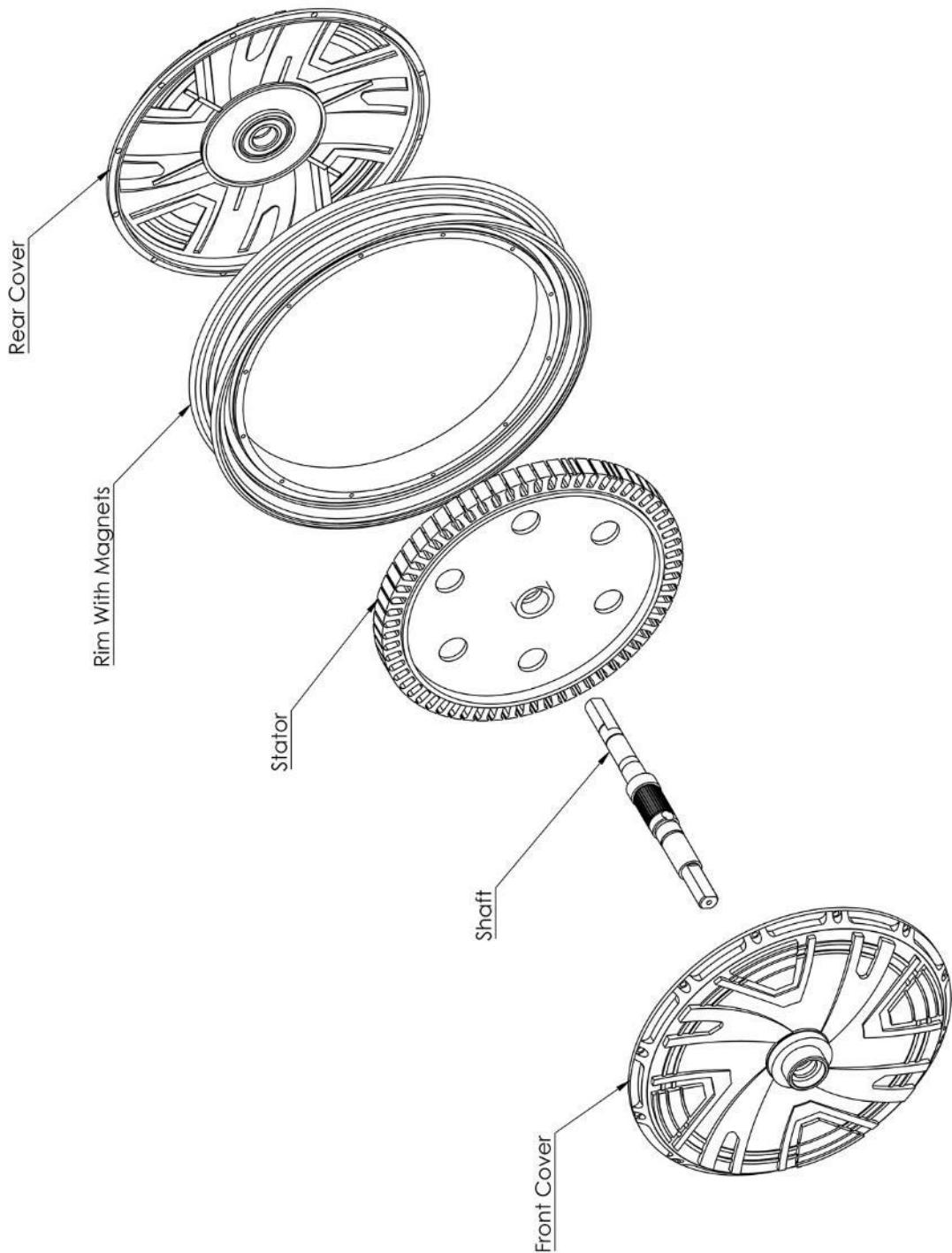
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	47.855	1.4596	69.851	0.1	433.2	5.6509	8.1	2.3910
2	47.807	2.2350	106.85	1.5	428.7	65.600	61.4	4.7970
3	47.817	2.9193	139.59	2.4	425.9	106.69	76.4	5.5940
4	47.852	4.1263	197.45	3.7	422.8	161.57	81.8	6.3750
5	47.864	4.9338	236.15	5.4	416.8	234.00	99.1	7.1720
6	47.865	5.2869	253.06	5.8	415.3	250.00	98.9	7.3345
7	47.868	6.7009	320.76	7.3	409.5	314.07	97.9	7.9850
8	47.866	8.5718	410.30	9.5	401.4	398.02	97.0	8.7970
9	47.866	8.9708	429.40	10.0	399.7	417.06	97.1	8.9668
10	47.866	10.407	498.17	11.8	393.5	485.61	97.5	9.5780
11	47.865	12.319	589.63	14.2	385.9	572.48	97.1	10.375
12	47.864	14.652	701.30	16.4	378.3	650.60	92.8	11.188
13	47.864	16.217	776.21	18.9	369.9	731.89	94.3	11.985
14	47.864	17.244	825.38	20.0	365.5	765.39	92.9	12.322
15	47.864	18.645	892.43	21.5	359.6	811.06	90.9	12.781
16	47.863	20.630	987.43	24.3	334.0	850.35	86.1	13.594
17	47.861	20.957	1003.0	27.0	294.8	832.17	83.0	14.375
18	47.864	20.954	1003.0	30.2	247.6	782.81	78.0	15.188
19	47.862	20.853	998.06	36.5	172.4	659.23	66.1	16.781
20	47.864	20.810	996.04	40.0	139.3	582.69	58.5	17.707
21	47.862	20.693	990.43	45.9	94.0	451.78	45.6	19.172
22	47.864	20.653	988.53	48.3	73.4	370.86	37.5	19.985
23	47.864	20.626	987.22	50.0	63.3	328.22	33.2	20.293
24	47.864	20.582	985.15	52.7	47.2	260.50	26.4	20.781
25	47.863	20.562	984.15	56.8	21.2	125.94	12.8	21.578
26	47.864	20.585	985.28	47.8	6.8	33.853	3.4	22.375
27	47.864	20.469	979.70	55.6	0.0	0.0000	0.0	23.172

Specifications

Rated Power (Watts)	250
Rated Torque (N.m)	5.8
Peak Torque (N.m)	57
Operating Voltage (Volts)	48
Rated Current (A)	5.2
Peak Current (A)	20.5
Rated RPM	415

Exploded View



Isometric View



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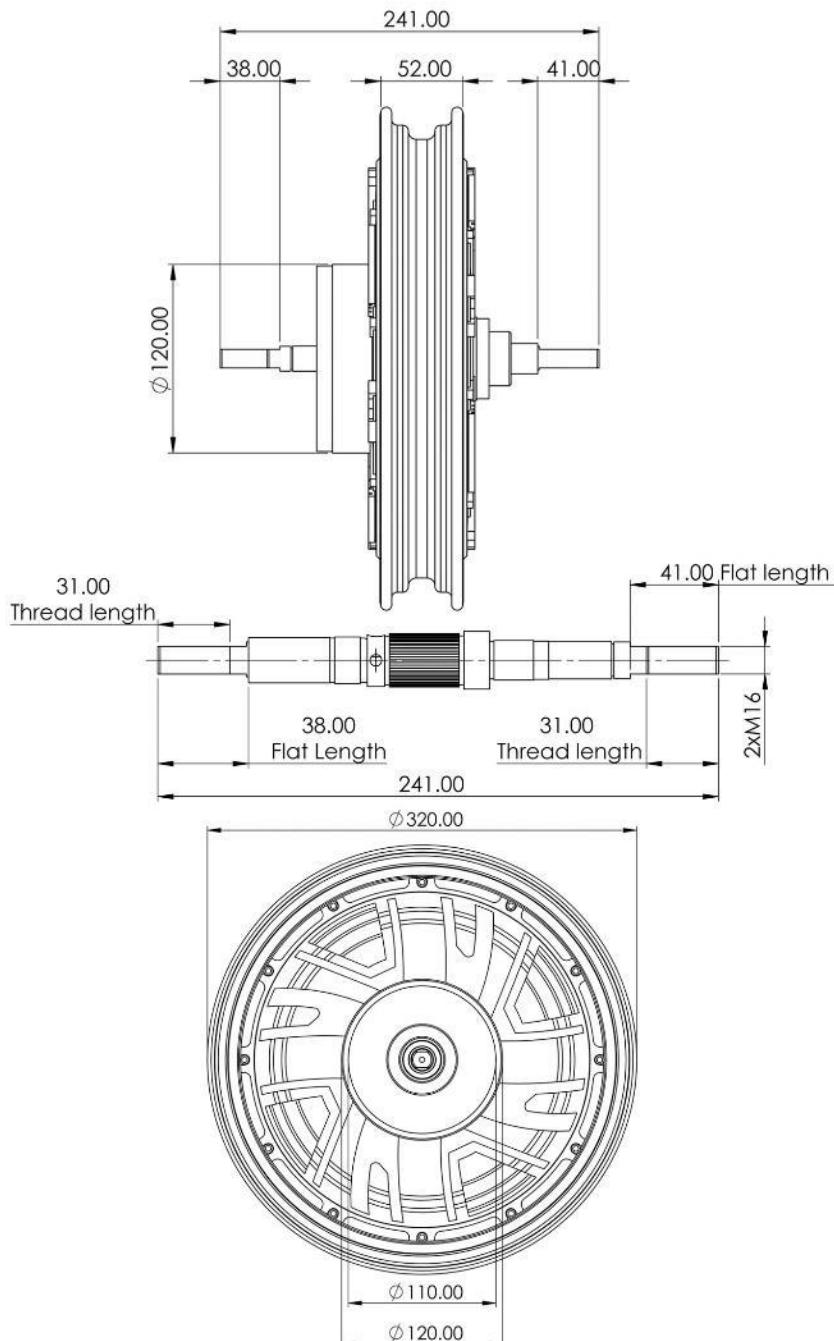
Product Features

- Rear wheel drive
- Low speed Motors support up to 40 km/h*
- Nominal output up to 550 W*
- 12.9 Nm nominal and 63.5 Nm peak torque
- Weight: 9.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 320mm

Shaft Length: 241mm

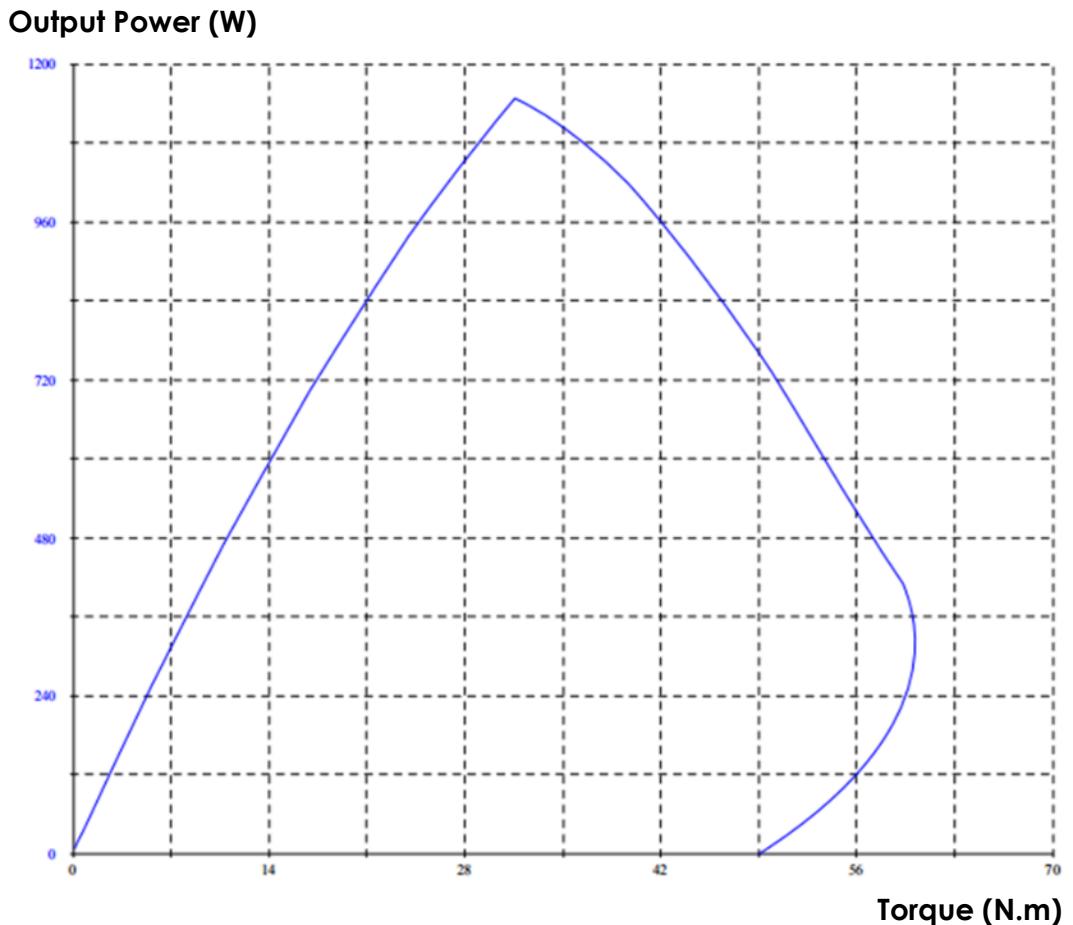
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

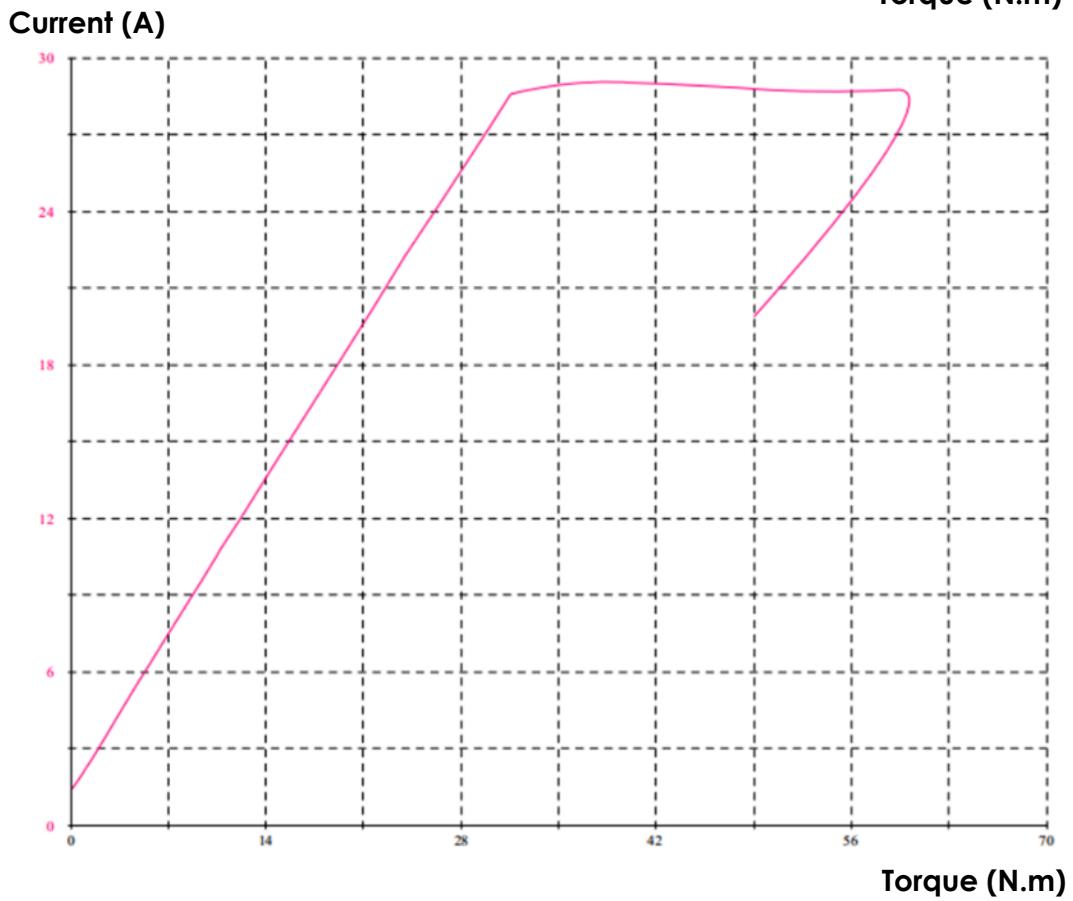
Tyre Types: Tubeless

Suitable Tyre Size: 90/90-12

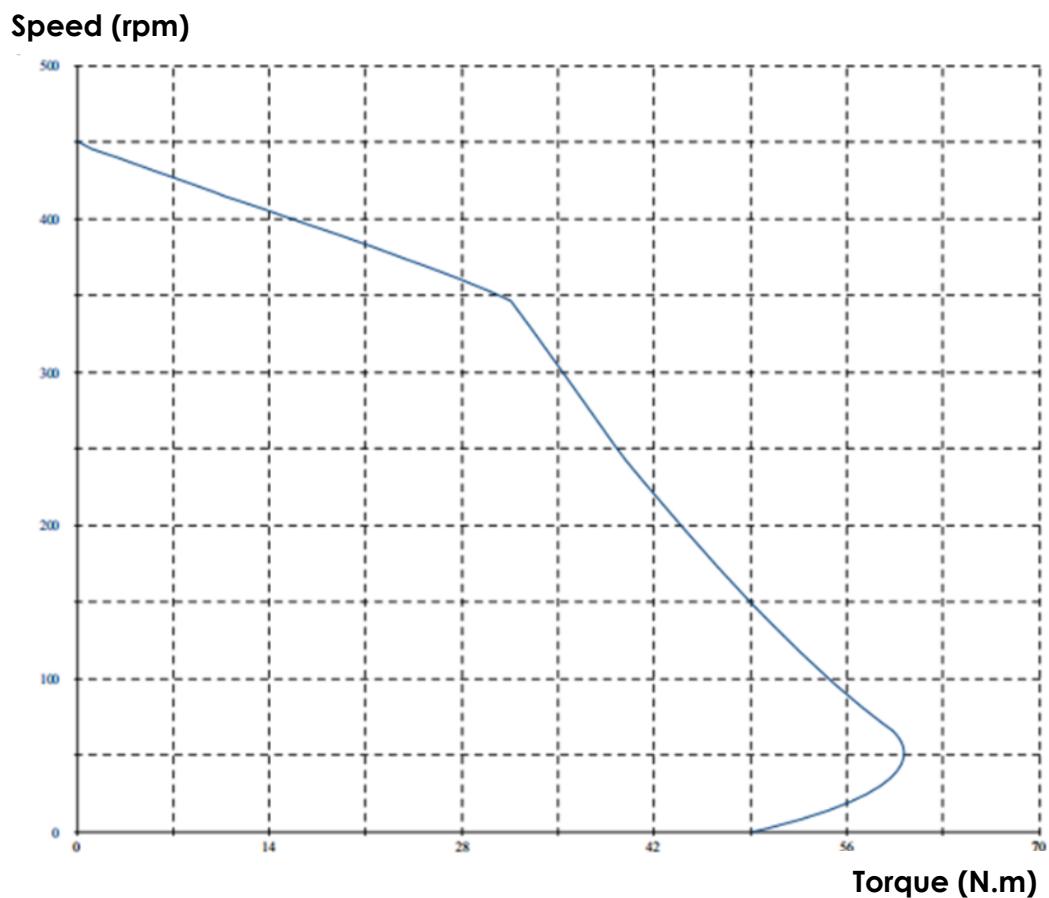
**Output Power (W)
vs Torque (N.m)**



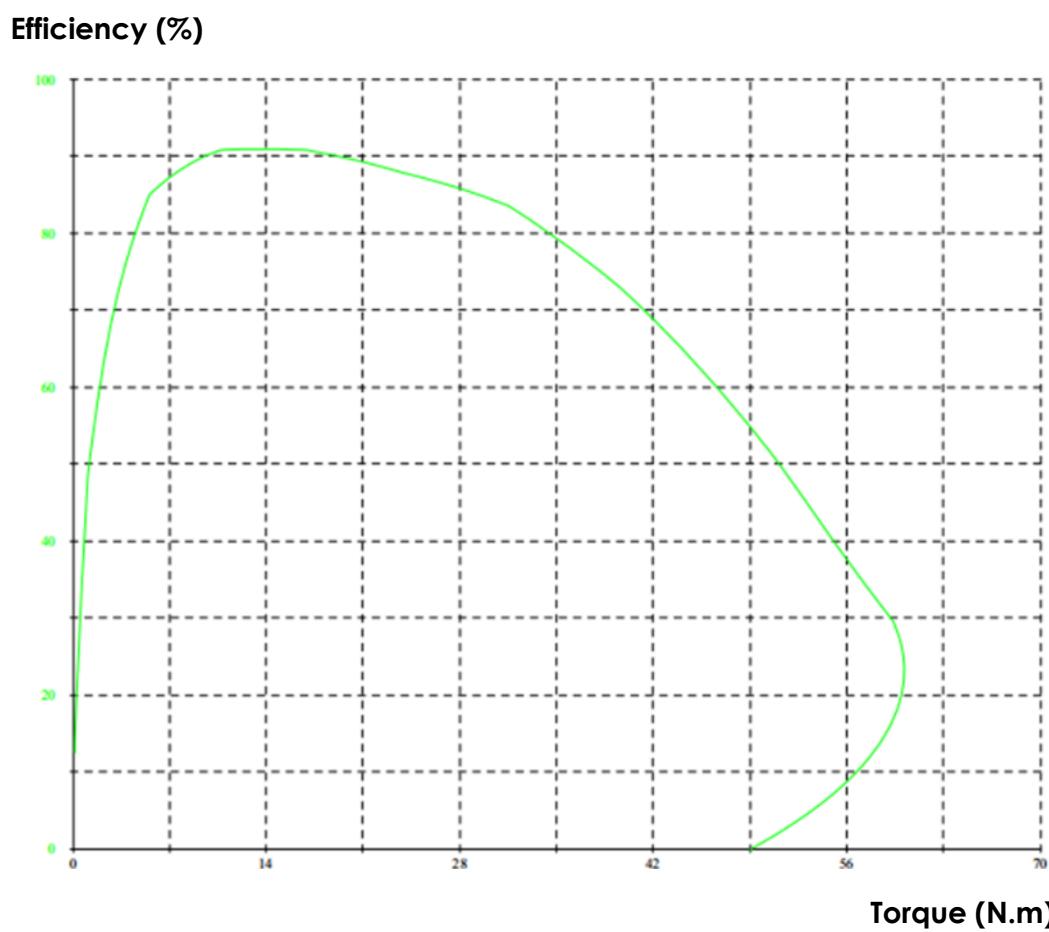
**Current (A)
vs Torque (N.m)**



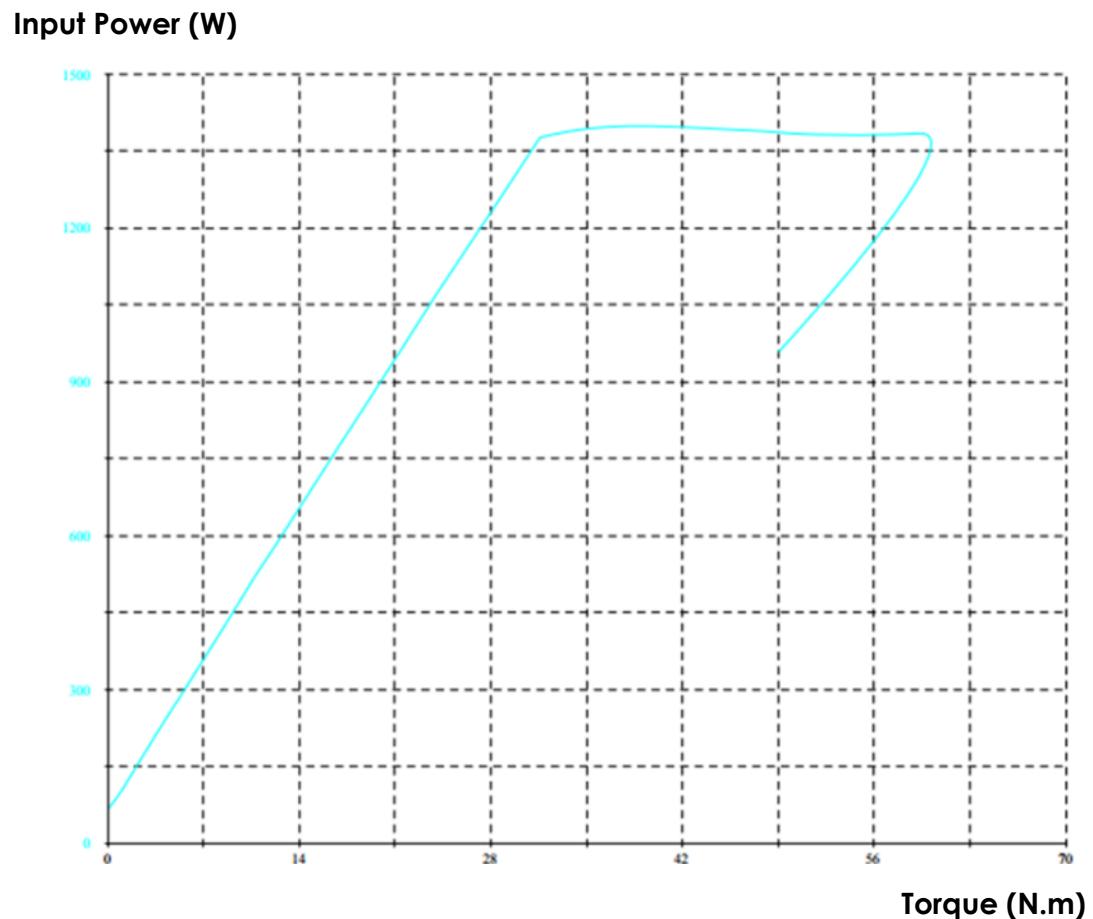
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



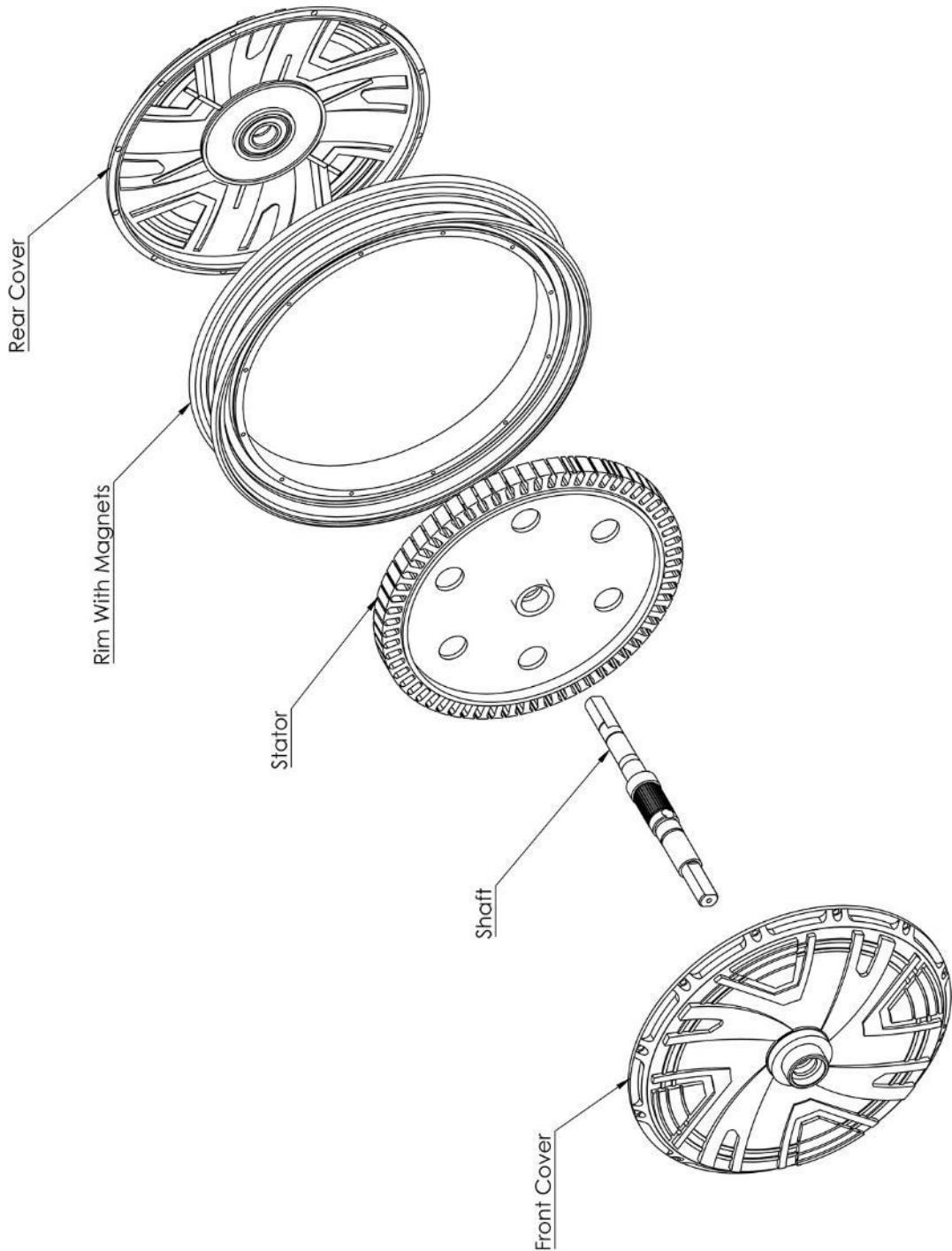
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	48.134	1.4549	70.029	0.2	450	8.6604	12.4	0
2	48.135	1.4876	71.604	0.2	449.6	11.589	16.2	2.985
3	48.126	1.6448	79.156	0.5	448.3	22.348	28.2	6
4	48.101	2.2108	106.34	1.1	445.5	51.315	48.3	9
5	48.088	3.233	155.47	2.3	441.3	104.63	67.3	12
6	48.129	4.5123	217.17	3.6	437.6	165.36	76.1	14.985
7	48.147	6.2178	299.37	5.6	431	254.45	85	17.985
8	48.149	8.3312	401.14	8	423.5	356.84	89	20.985
9	48.149	10.076	485.16	10	417.3	438.4	90.3	23.128
10	48.149	10.774	518.77	10.8	414.8	471.02	90.8	23.985
11	48.148	12.565	604.99	12.9	408.3	550	90.9	26.113
12	48.147	13.299	640.3	13.7	405.7	582.35	91	26.985
13	48.147	16.059	773.17	16.9	395.9	701.41	90.7	29.985
14	48.147	18.741	902.35	20	386.6	809.15	89.7	32.72
15	48.147	19.001	914.85	20.3	385.7	819.58	89.6	32.985
16	48.146	22.215	1069.6	24	373.5	939	87.8	36
17	48.147	25.383	1222.1	27.8	361.4	1050.5	86	38.985
18	48.146	27.219	1310.4	30	352.6	1106.4	84.5	40.722
19	48.145	28.554	1374.7	31.6	346.2	1147.1	83.4	41.985
20	48.143	29.138	1402.8	35.5	298.4	1108.5	79	45
21	48.143	29.05	1398.5	39.4	248.3	1025.3	73.3	47.985
22	48.143	29.039	1398	40	241.7	1010.9	72.3	48.426
23	48.146	28.976	1395.1	43.5	203.5	926.78	66.4	51
24	48.145	28.868	1389.8	47.5	163.1	811.82	58.4	54
25	48.144	28.758	1384.5	50	140.2	730.34	52.7	55.777
26	48.144	28.683	1380.9	51.7	124.7	674.94	48.9	56.985
27	48.144	28.624	1378.1	55.3	92.3	534.75	38.8	60
28	48.146	28.728	1383.1	59.3	65.9	408.77	29.6	62.985
29	48.147	28.732	1383.3	60	59.9	373.39	27	63.485
30	48.15	28.751	1384.4	63.5	29.6	196.51	14.2	65.985
31	48.149	19.899	958.11	49	0	0	0	68.985

Specifications

Rated Power (Watts)	550
Rated Torque (N.m)	12.9
Peak Torque (N.m)	63.5
Operating Voltage (Volts)	48
Rated Current (A)	13
Peak Current (A)	30
Rated RPM	400

Exploded View



Isometric View



Product Description

EMFi Hub Motor series is characterized by reliable technology and flexible configurations. Our air-cooled Hub Motors are not affected by potential motor heat generated that might impair system performance. Whether used as a front or rear wheel drive, the option of turning the drives in both directions opens up a wealth of usage applications and product design possibilities.

Our drive can be installed in the front or rear wheel and the shaft can be modified to the design needs of the customer for specific application needs. This lowers manufacturing costs and gives our customers the highest possible flexibility in product design. Our warranty options also deliver after sales services and enable overall customer satisfaction.

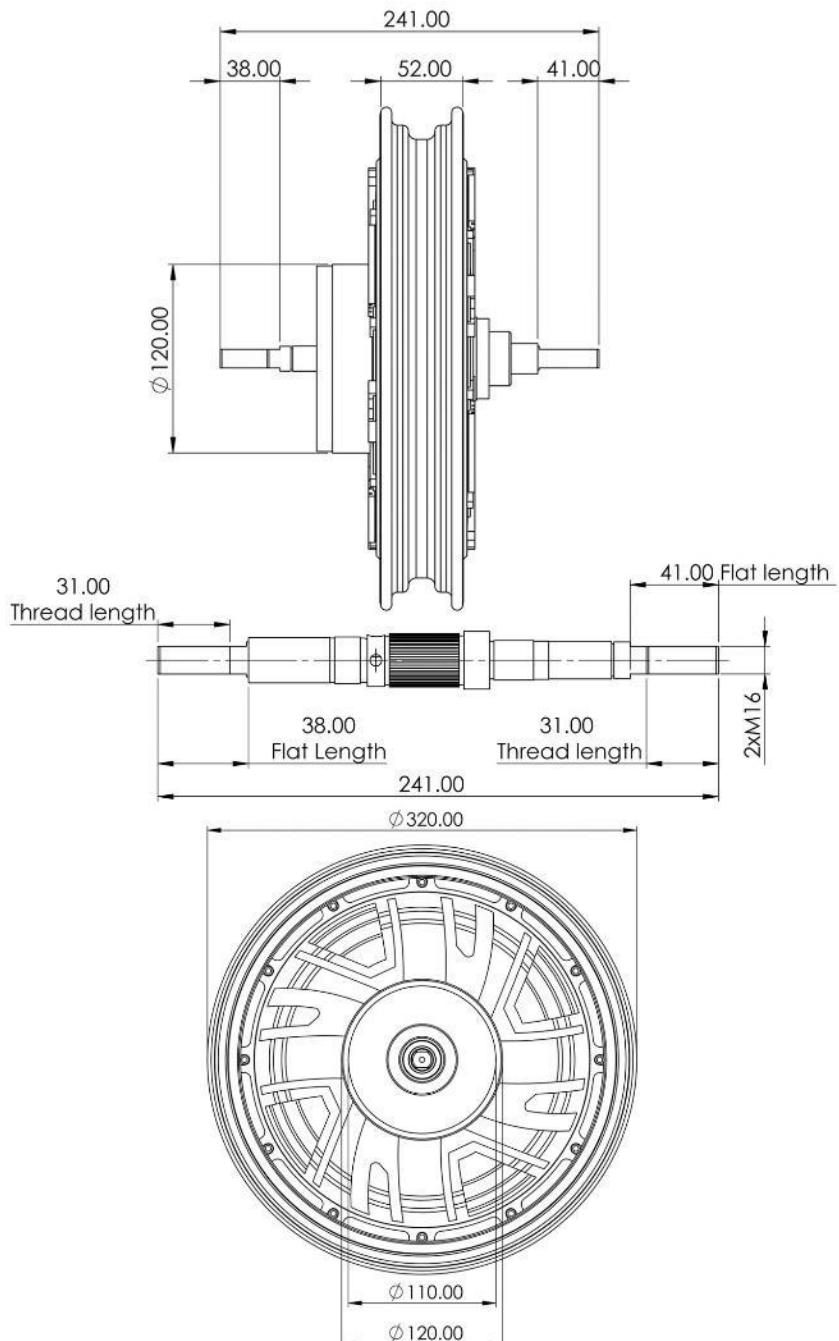
Product Features

- Rear wheel drive
- Low speed Motors support up to 40 km/h*
- Nominal output up to 800 W*
- 16 Nm nominal and 67 Nm peak torque
- Weight: 9.0 kg
- No gear, no brush, no wear, no noise
- Smooth, controllable variable-speed operation
- Highly energy efficient

*Function and feature of Motor Controller



Technical Drawings



Motor Specifications

Motor Outer Diameter: 320mm

Shaft Length: 241mm

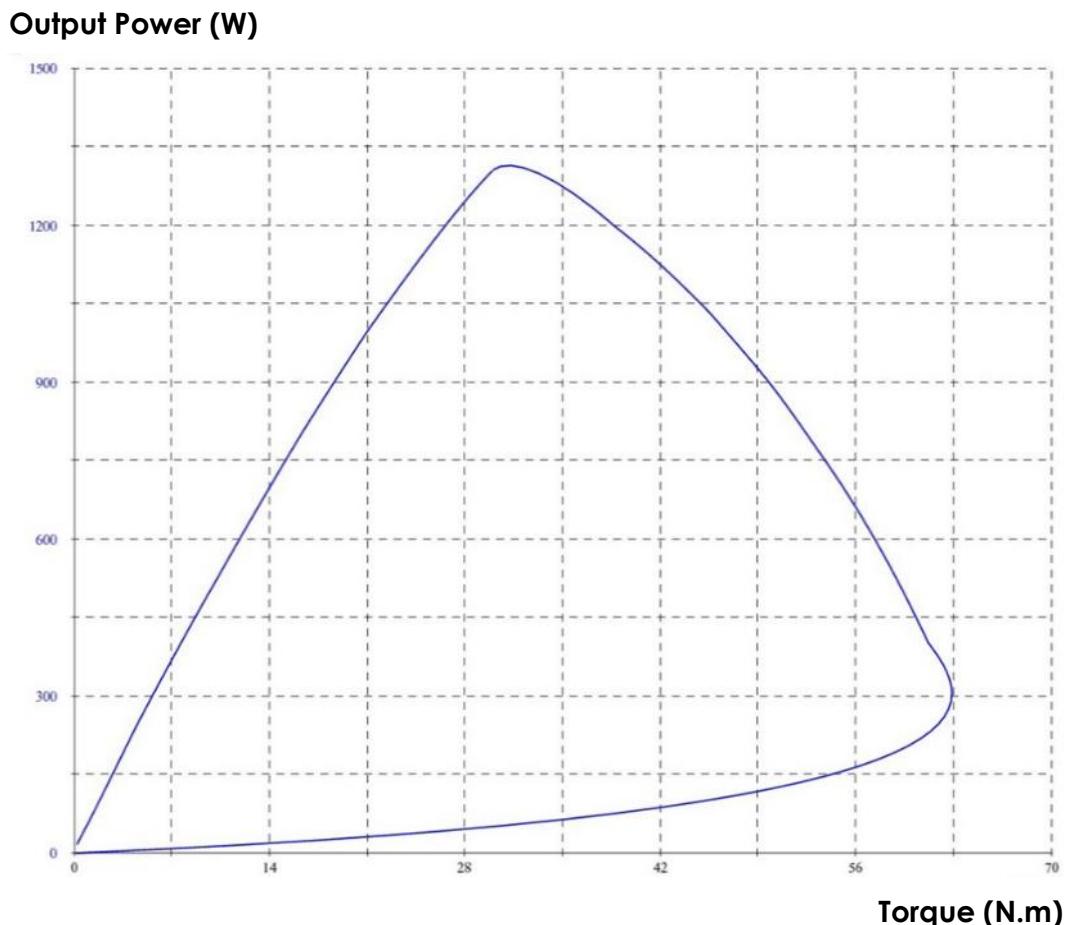
Brake Size: 110mm

Brake Type: Regular Brakes (shoe type)

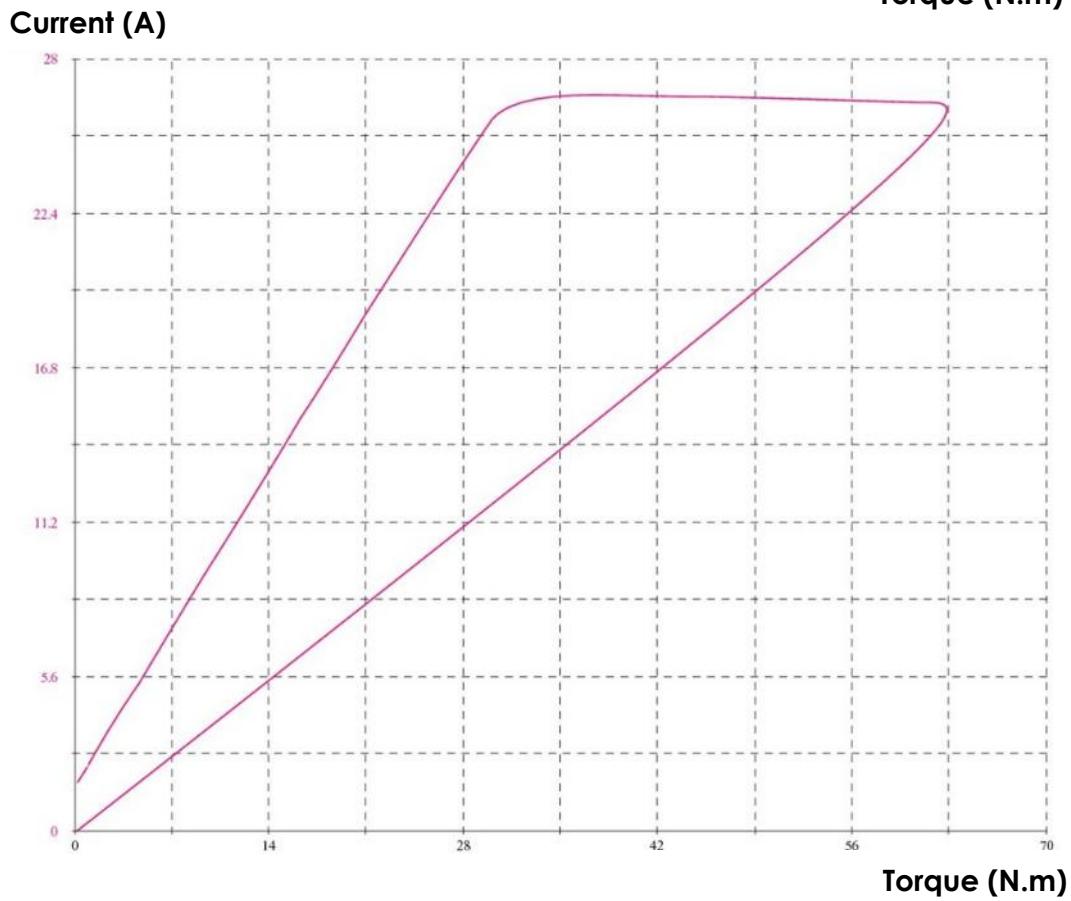
Tyre Types: Tubeless

Suitable Tyre Size: 90/90-12

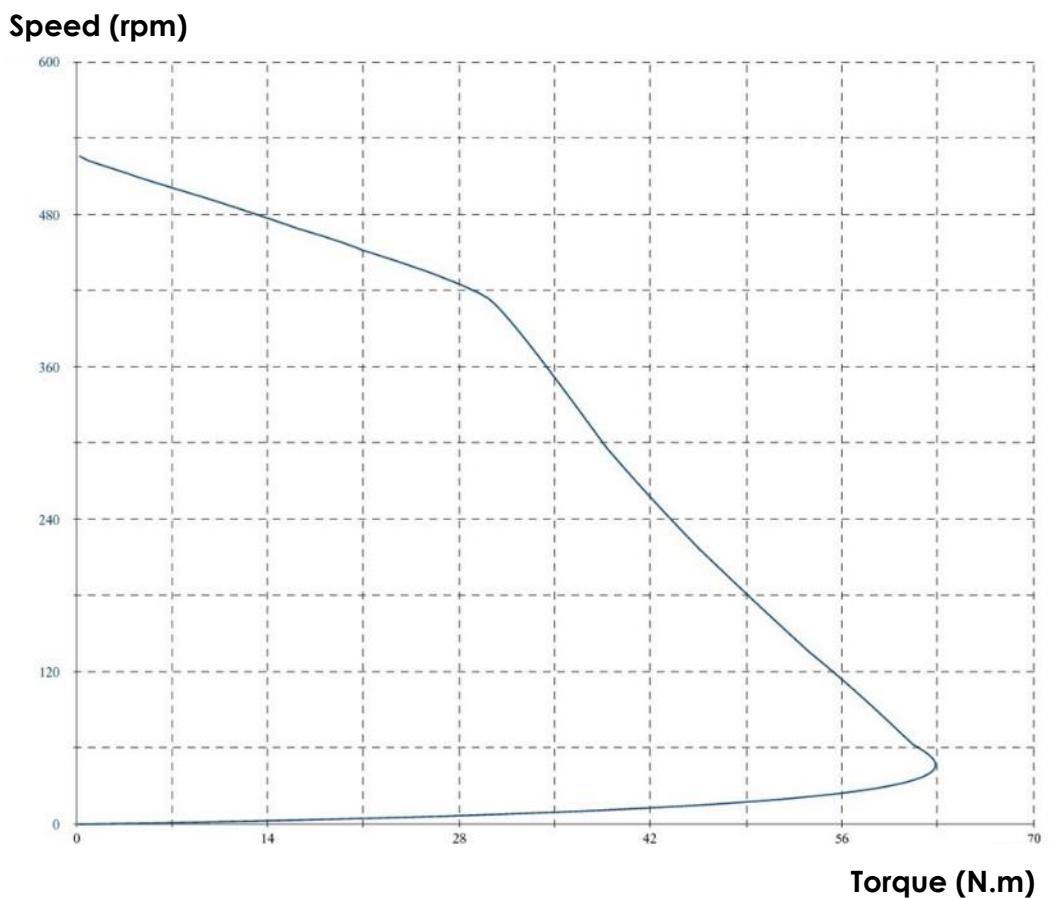
**Output Power (W)
vs Torque (N.m)**



**Current (A)
vs Torque (N.m)**



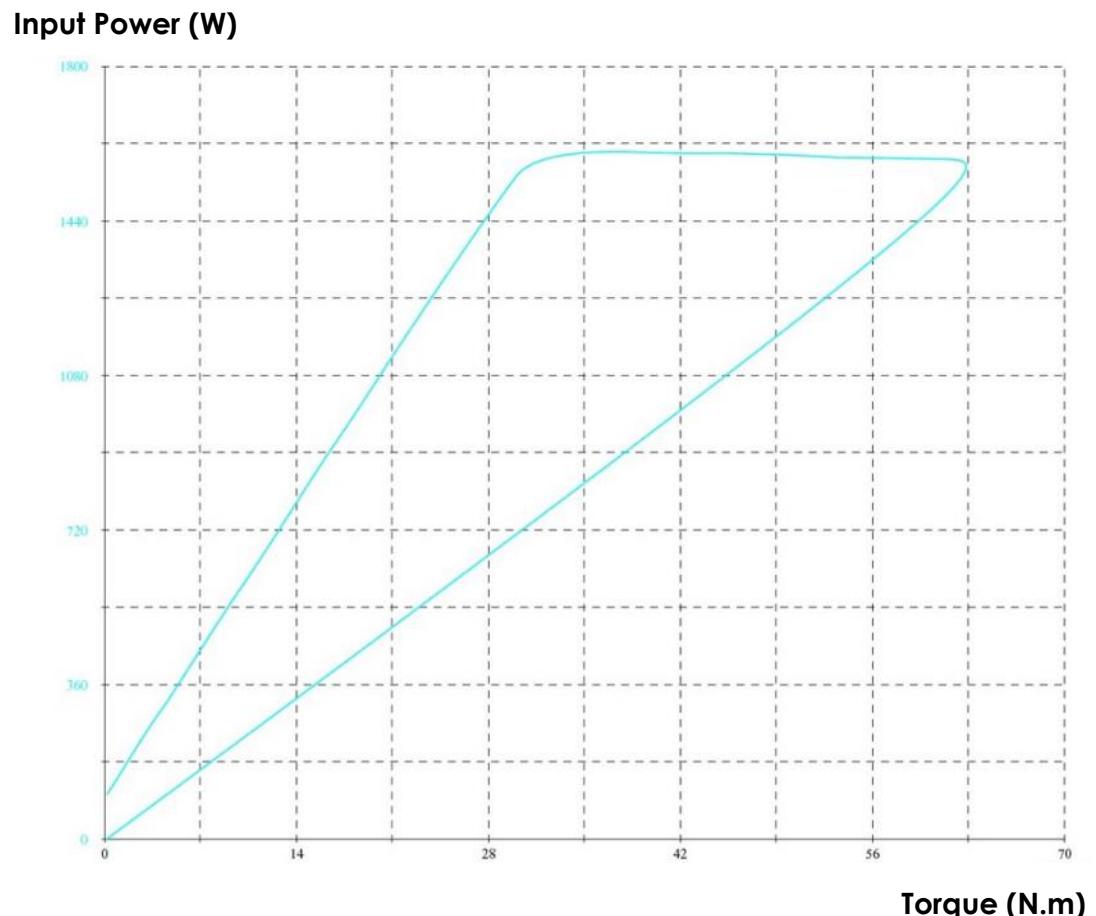
**Speed (rpm)
vs Torque (N.m)**



**Efficiency (%)
vs Torque (N.m)**



**Input Power (W)
vs Torque (N.m)**



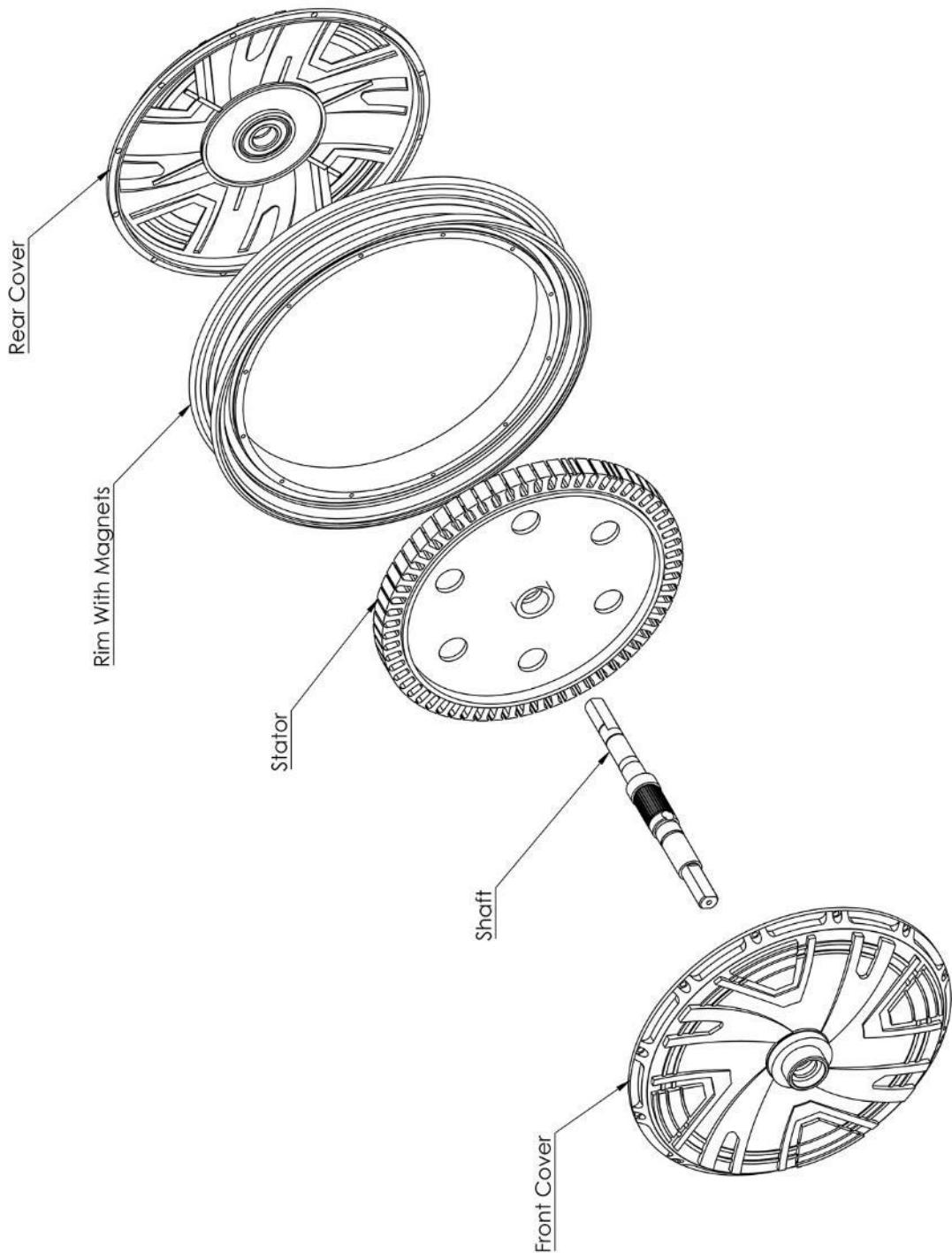
Technical Data

	Voltage (V)	Current (A)	Input Power (W)	Torque (N.m)	Speed (rpm)	Output Power (W)	Efficiency (%)	Time (s)
1	59.922	1.7355	103.99	0.3	525.4	14.64	14.1	0
2	59.921	1.7915	107.35	0.3	525.1	17.343	16.2	2.985
3	59.915	1.9114	114.52	0.5	524.2	27.423	23.9	6
4	59.905	2.285	136.88	0.9	522.2	49.469	36.1	9
5	59.902	2.9889	179.04	1.7	519.1	91.602	51.2	11.985
6	59.929	4.0474	242.56	2.9	514.9	154.95	63.9	15
7	59.926	5.2927	317.17	4.6	509	245.52	77.4	18
8	59.939	7.2344	433.62	6.9	501.3	362.74	83.7	21
9	59.939	9.3498	560.41	9.4	492.9	484.43	86.4	23.985
10	59.939	9.8178	588.46	10	490.9	512.83	87	24.677
11	59.939	11.378	681.96	12	484.1	607.51	89.1	26.985
12	59.938	13.702	821.24	14.8	473.8	735.22	89.5	30
13	59.937	14.923	894.41	16.3	468.5	800	89.4	31.561
14	59.936	16.037	961.19	17.7	463.7	859.13	89.4	32.985
15	59.937	17.908	1073.3	20	455.5	954.09	88.9	35.086
16	59.937	18.722	1122.1	21	451.9	995.38	88.7	36
17	59.935	21.344	1279.3	24.3	440.1	1118.8	87.5	38.985
18	59.936	24.152	1447.6	27.8	427.4	1243.9	85.9	42
19	59.935	25.72	1541.6	30	414.9	1303	84.5	43.941
20	59.935	26.576	1592.8	31.2	408.1	1335.2	83.8	45
21	59.934	26.724	1601.7	34.8	354.6	1290.7	80.6	48
22	59.934	26.667	1598.2	38.7	296.4	1199.7	75.1	50.985
23	59.934	26.645	1596.9	40	280.6	1171.2	73.3	52.132
24	59.933	26.609	1594.8	42.1	255.1	1125.1	70.5	53.985
25	59.932	26.614	1595.1	45.6	215.8	1029.4	64.5	56.985
26	59.932	26.571	1592.4	49.9	171.9	898.25	56.4	59.985
27	59.932	26.569	1592.3	50	170.9	894.45	56.2	60.066
28	59.932	26.489	1587.6	53.6	135.1	757.77	47.7	63
29	59.931	26.482	1587.1	57.5	101.8	612.67	38.6	66
30	59.932	26.429	1583.9	60	75.1	468.33	29.5	68.027
31	59.932	26.404	1582.4	61.2	62.3	399.04	25.2	69
32	59.928	26.379	1580.9	65.3	37.8	258.64	16.4	72
33	59.931	26.33	1578	67.1	10.8	75.502	4.8	75
34	59.987	0	0	0.2	0	0	0	77.985

Specifications

Rated Power (Watts)	800
Rated Torque (N.m)	16
Peak Torque (N.m)	67
Operating Voltage (Volts)	60
Rated Current (A)	15
Peak Current (A)	26
Rated RPM	460

Exploded View



Isometric View





**Do write in to us if you would like to request for
motor samples or a factory tour.**

EMF INNOVATIONS PVT LTD

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