

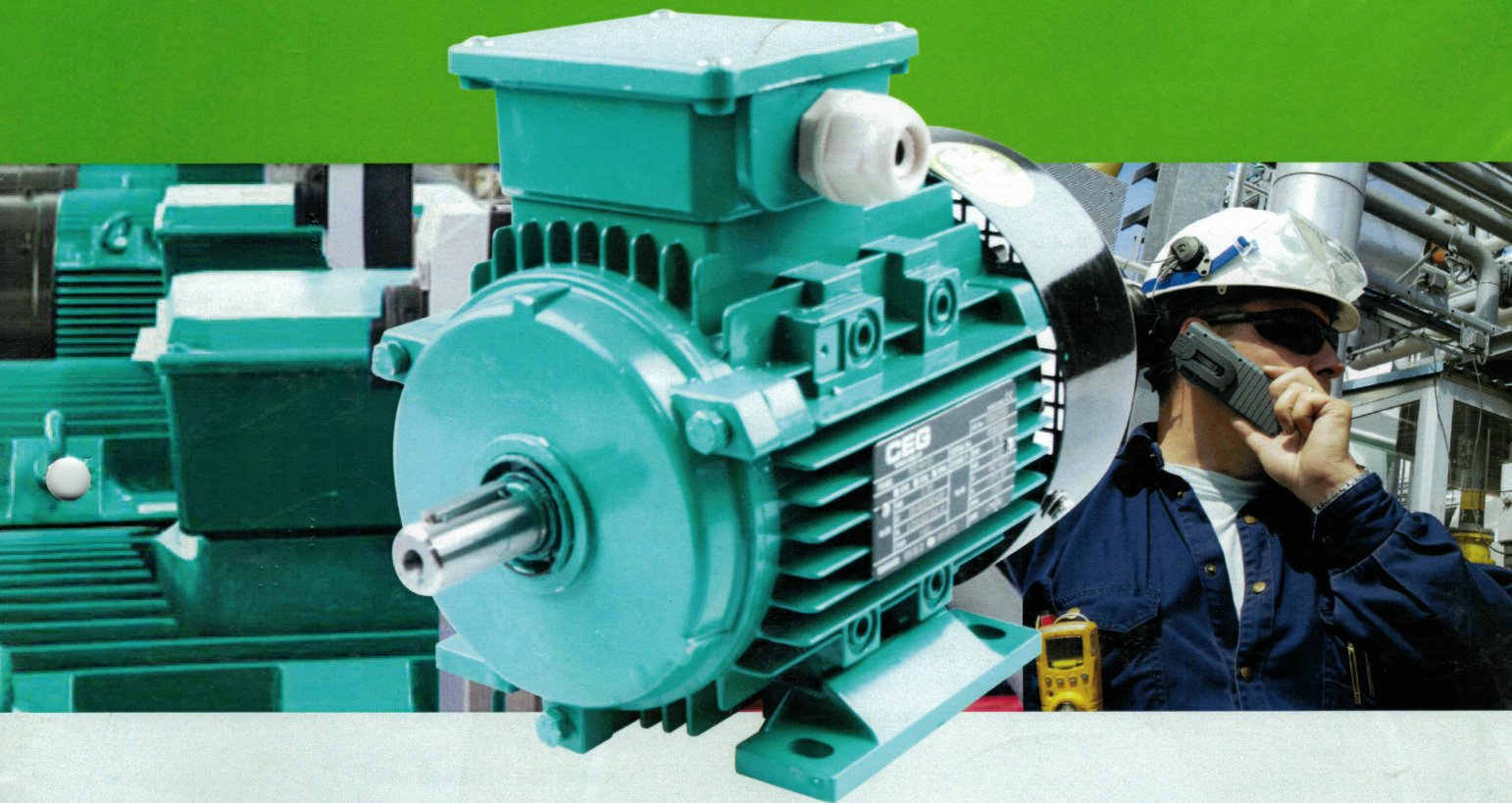
GLOBAL GREEN SERIES

Three Phase Aluminium Motors, 56 to 200L Frame

Three Phase DC Brake Motors, 56 to 160L Frame

Three Phase AC Brake Motors, 71 to 100L Frame

Australian Version



CEG

ELECTRIC MOTORS AND PUMPS

GLOBAL GREEN SERIES

THREE PHASE ALUMINIUM MOTORS, 56 TO 200L FRAME

CEG is an Australasian leader of electric motors and water pumps for the industrial and domestic market.

GLOBAL GREEN SERIES

The Global Green catalogue details the complete range and specifications of this series. The Global Green Series motors are aluminium, three phase, squirrel cage, totally enclosed fan cooled (TEFC), with IEC frame size from 56 to 200L. These include single speed 2, 4, 6 and 8 pole design combined with high efficiency and excellent quality.

The Global Green Series aluminium motor range covers from 0.06kW right through to 37kW. They are widely used in a diverse range of industrial applications from food and drink to water and sewerage, from heating and ventilation to refrigeration etc.

MULTI-MOUNT

By simply changing the position of the feet, the user is able to obtain right, left or top mounted terminal box positions, and by removing the standard end shield can change it for a flange or face version. The feet also can be replaced by four pads for rod mounting.

EFFICIENCY

The Global Green Series, exceed the requirements for the listed MEPS AS/NZ 1359.5-2004 minimum efficiency levels under test method B. They have been certified and registered with Australia MEPS.



QUALITY ASSURANCE

Stringent quality procedures are observed from initial design to the finished product, in accordance with the ISO9001 documented quality systems. This is a further assurance that only the highest possible standards of quality are accepted right through to final packaging.

BENEFITS INCLUDE

- Energy efficient providing low running costs
- Light weight aluminium construction
- High reliability for long life
- Low noise levels
- Multi voltage at 50Hz - 400/415 \pm 6%
 - ≤ 3kW 220 - 240/380 - 415
 - ≥ 4kW 380 - 415/660 - 720
- Multi voltage at 60Hz
 - ≤ 3kW 264 - 288/440 - 480
 - ≥ 4kW 440 - 480/760 - 830
- Dual frequency 50Hz and 60Hz
- High torque with smooth acceleration and low current
- IP 55, IP56, IP66 protection
- Class F insulation with Class B temperature rise
- S1 and S2 ratings
- Ambient 40°C temperature rise 80°C
- 2-year warranty



COOLING FAN

All Global Green Series have a polypropylene cooling fan fitted. The whole cooling system is design to obtain maximum dissipation of heat, using specific fans for each speed, thus reducing the noise level and increasing motor efficiency.

CASING

Made of a single piece of high density aluminium, giving rigidity under the most extreme starting loads. This integrated design of longitude ribs ensures the maximum effective dissipation of heat improving motor life.

LAMINATIONS

The lamination core consists of thermo chemically coated low loss magnetic steel achieving the utmost efficiency with low operating temperatures.

WINDINGS

Stator windings consist of high grade enamelled electrolytic copper wire, with Class F insulation between coils & slots. All stators are varnished with a thermo setting epoxy resin.

SHAFT

Made of high grade C43 steel and supplied complete with key.

END-SHIELDS

Motor end-shields 56-160 frame are made of die-cast aluminium alloy frames 180-200 are made of cast iron. The special webbed designed end-shields transmit the load to the casting in a uniform way improving the thermal dissipation of heat thereby guaranteeing bearing life.

TERMINAL BOX

Generously sized to make electrical connections easier. Terminal boxes on all motors are rotatable 360° in increments of 90°. This feature has been incorporated in order to facilitate cable entry from any direction.

ROTOR

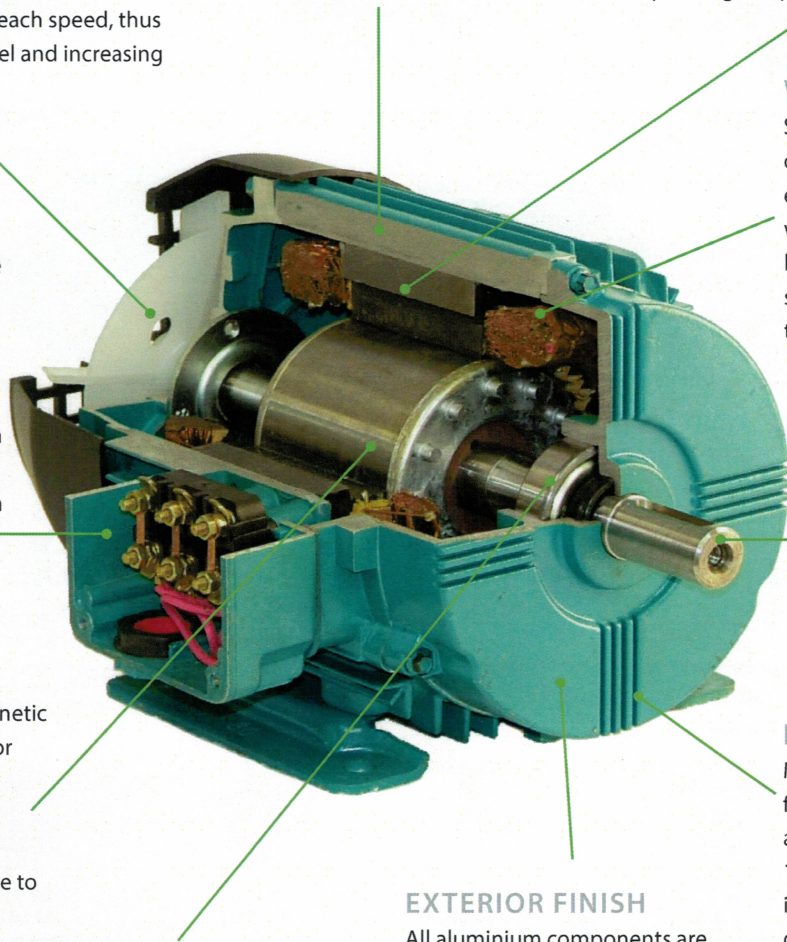
Made from low loss magnetic steel lamination, the rotor is squirrel cage die-cast aluminium design. This particular design allows maximum starting torque to be obtained.

BEARINGS

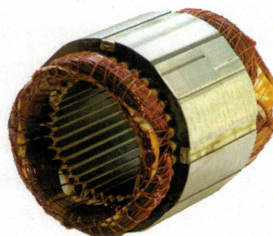
Are high quality oversized deep groove ball bearings with double shielded bearings that are lubricated for life. These are able to withstand strong radial and axial loads.

EXTERIOR FINISH

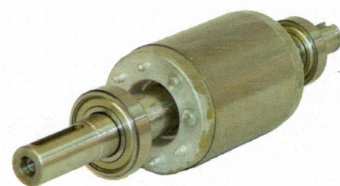
All aluminium components are protected with a zinc chromate primer to prevent oxidisation. The finishing coat of the Global Green Series is a green/blue synthetic enamel paint, which is adequate for normal operational conditions.



ALUMINIUM CASING



WOUND STATOR



ROTOR SHAFT

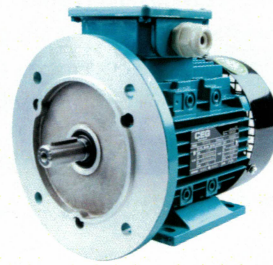


Various mounting arrangements are offered for the Global Green Series depending on the motor coupling. The following mounting arrangements are available:

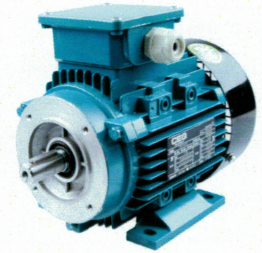
Table 1.1



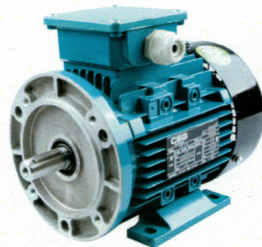
Foot Mount (B3)



"D" Flange Mount (B3/5)



"C" Flange Mount (B3/14A)

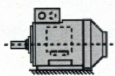


"C" Flange Mount (B3/14B)

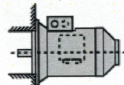


Pad Mount

HORIZONTAL SHAFT:



IM B3
IM 1001
foot mounted



IM B5
IM 3001
flange at DE
no feet



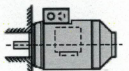
IM B6
IM 1051
foot wall mounted with
feet on left-hand side
when viewed from DE



IM B7
IM 1061
foot wall mounted with
feet on right-hand side
when viewed from DE

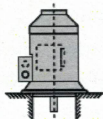


IM B8
IM 1071
ceiling mounted
with feet
above motor

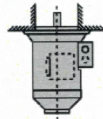


IM B14
IM 3601
face at DE
no feet

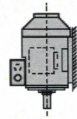
VERTICAL SHAFT:



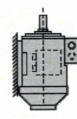
IM V1
IM 3011
flange at DE
shaft down
no feet



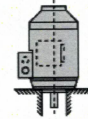
IM V3
IM 3031
flange at DE
shaft up
no feet



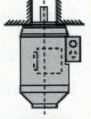
IM V5
IM 1011
vertical foot
wall mounted
shaft down



IM V6
IM 1031
vertical foot
wall mounted
shaft up



IM V18
IM 3611
face at DE
shaft down
no feet



IM V19
IM 3631
face at DE
shaft up
no feet

MATERIALS AND CONSTRUCTION

SHAFTS

Global Green Series motor shafts are made of C43 steel. They are supplied with a key and threaded hole in the centre of the shaft in line with DIN 332 standard.

ROTOR

Rotor core laminations are constructed from high quality magnetic steel. Rotor cages are of the squirrel cage type, and are manufactured from pressurised die cast aluminium as a single piece. This manufacturing process achieves both high starting torque with smooth acceleration and low current. Once assembled the rotor is dynamically balanced to achieve smooth operation.

BALANCING

Each die cast aluminium rotor assembly, (made up of the shaft and rotor core) is dynamically balanced to a high commercial level.

STATOR CASING

Stator enclosures are manufactured from high density aluminium. They are designed and manufactured as one piece, complete with integrated ribs.

This manufacturing process ensures the stator casing remains rigid under the most extreme starting and running loads. The integrated design of longitude ribs ensures the maximum effective dissipation of heat improving motor life.

END-SHIELDS AND FLANGES

Motor end-shields are made from high density diecast aluminium alloy with flanges constructed of 180-200 frame end-shields and flanges made from cast iron.

They are designed and manufactured as a single piece, ensuring they remain ridged under the most extreme starting and running loads. End-shields are machined to close tolerances providing perfect alignment and fit. Improved thermal dissipation guarantees long bearing life.

EARTHING

All terminal boxes include an internal earth stud. Additional external earthing pads are provided on the stator for all frame sizes.

COOLING

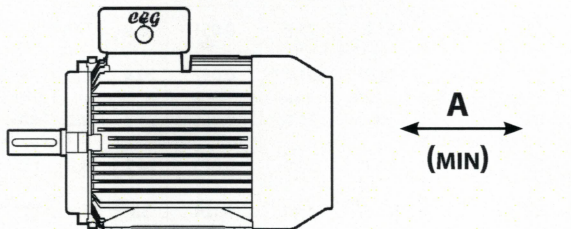
The Global Green Series of motors are all totally enclosed fan-cooled (TEFC) over the external longitude ribs. (Special TEOAM motors available on request)

All frame sizes have polypropylene cooling fans. These cooling fans are suitable for both directions of rotation. Cooling air is drawn in through the fan cowl and blown the length of the motor.

When installing the motor it is important to ensure airflow into the motor cowl is not restricted. Table 1.2 below provides dimensions that should be used as a guide for minimum distance requirements when mounting as a precaution to not impede airflow.

FRAME SIZE:	DIMENSIONS (A):
56M - 100M	15mm
100M - 132M	30mm
160M - 200L	40mm

TABLE 1.2



For further information on cooling when running below standard synchronises speed on variable speed drive (VSD) contact your CEG agent for an air velocity table as extra external cooling may be required.

BEARINGS

All Global Green Series motors are equipped with high quality deep groove ball (C3) bearings with double shielded bearings (ZZ).

Global Green Series motor bearings are specifically designed for use in electric motors. The bearings all come pre-lubricated with a lithium based grease and are maintenance free for life, which under normal operating conditions will provide maximum reliability.

Bearing grease is suitable for operation temperatures ranging from -20°C to 120°C. For operation outside these temperatures please contact your local CEG agent for advice.

Bearing housings are fine bored to precision dimension by boring machines. The shaft has excellent surface finish (closely ground). This ensures close tolerances and a high degree of concentricity leading to correct bearing fits for extended bearing life.

The minimum life of bearings for a standard motor is: 20,000hrs for 2 pole motors and 40,000hrs for 4, 6 and 8 pole motors. These are based on operation under conditions of maximum permissible radial thrust, axial thrust, and minimum diameter and maximum face width of pulley. These values are calculated for horizontal mounting only.

WINDINGS

Windings consist of high grade electrolytic copper wire insulated with high temperature polyester varnished wire. These are inserted into the slot liners, which are double cuffed at the slot mouth providing strength to the insulation.

Windings are fitted with insulating phase barriers and bound with a class F tape to provide additional protection against motor failure caused through insulation breakdown from electrical and/or mechanical stresses.

All stators are vacuum impregnated with a thermo setting epoxy resin (class F).

TERMINAL BOX

All terminal boxes in the Global Green Series are constructed from aluminium with generous dimensions.

Terminal boxes on all motors can easily be converted from top (standard to right-hand and left-hand side, and are rotatable 360° in increments of 90°. This feature has been incorporated in order to facilitate cable entry from any direction. All terminal boxes include an internal earth stud.

One-piece gaskets are fitted between all mounting surfaces to ensure IP protection is maintained. Cable glands are supplied in all cable entries.

FINISH

All cast aluminium components are protected with a zinc chromate primer to prevent oxidation. The finishing coat of standard Global motors is a green/blue colour in a synthetic enamel paint, which is adequate for normal operational conditions.



3000 R/MIN (2 POLE) - FRAME SIZES 56 - 200L

kW	MOTOR FRAME	SHAFT SIZE	SPEED (R/MIN)	400V / 50Hz							380V 50Hz	415V 50Hz	J= ^{1/4} GD ² (kg.m ²)	440V 60Hz		(Kg)
				(%)	COS Φ	I _N (A)	I _L /I _N	T _N (Nm)	T _L /T _N	T _B /T _N	I _N (A)	I _N (A)		kW	I _N (A)	
0.12	56	9	2730	64.0	0.79	0.34	5.2	0.42	2.3	2.4	0.36	0.33	0.0001	0.14	0.37	3.6
0.18	63	11	2730	65.0	0.79	0.53	5.5	0.63	2.6	2.6	0.56	0.51	0.00015	0.2	0.52	4.5
0.25	63	11	2800	69.0	0.81	0.66	5.5	0.85	2.2	2.3	0.70	0.64	0.00018	0.28	0.78	4.7
0.37	63	11	2800	70	0.81	0.95	5.7	0.93	2.2	2.3	0.99	0.91	0.00025	0.41	0.99	5.7
0.37	71	14	2800	71.0	0.81	0.96	6.1	0.93	2.2	2.3	1.02	0.93	0.00035	0.41	0.97	6.0
0.55	71	14	2800	74.0	0.82	1.40	6.1	1.35	2.2	2.3	1.47	1.35	0.00045	0.61	1.37	6.3
0.72	71	14	2800	80.5	0.83	1.76	6.1	2.5	2.8	4.0	1.83	1.68	0.0006	0.8	1.83	7.3
0.72	80	19	2820	76.0	0.84	1.67	6.1	2.5	2.8	4.0	1.76	1.61	0.00075	0.8	1.79	10
1.1	80	19	2835	84.4	0.87	2.2	7.3	3.7	3.0	3.3	2.3	2.1	0.00099	1.21	2.35	13
*1.5	80	19	2840	84.1	0.86	1.76	6.1	2.5	2.8	4.0	1.83	2.95	0.0012	1.65	3.22	12.5
1.5	90S	24	2860	86.4	0.86	2.9	8.4	5.0	3.9	4.0	3.0	2.9	0.0014	1.65	3.16	17
2.2	90L	24	2860	86.5	0.85	4.3	8.7	7.4	4.1	4.2	4.4	4.2	0.0016	2.42	4.50	21
*3	90L	24	2870	86.7	0.86	5.9	8.9	9.9	3.0	3.4	6.04	5.73	0.0024	3.3	6.04	15.5
3	100L	28	2890	86.7	0.87	5.7	9.0	9.9	3.0	3.4	6.0	5.5	0.0035	3.3	5.92	27
*4	100L	28	2900	87.6	0.89	7.6	9.1	13.1	3.0	3.6	7.87	7.21	0.0045	4.4	7.87	27
4	112M	28	2915	89.6	0.90	7.1	9.2	13.1	3.0	3.6	7.4	7.0	0.0062	4.4	7.71	33
*5.5	112M	28	2920	88.5	0.88	10.2	9.4	10.0	2.3	3.2	10.7	9.79	0.0095	6.05	10.7	30
5.5	132S	38	2925	90.2	0.89	9.9	8.0	18.0	2.3	3.2	10.3	9.7	0.013	6.05	10.49	50
*7.5	112M	28	2900	87.7	0.89	13.4	8.4	24.5	2.3	2.8	14.1	13.2	0.014	8.25	14.4	36
7.5	132S	38	2920	90.6	0.89	13.3	7.9	24.5	2.3	2.9	13.9	13.0	0.015	8.25	14.21	55
*11	132M	38	2935	90.6	0.88	19.9	7.9	35.6	2.3	3.2	20.7	18.9	0.020	12.1	20.7	58
11	160M	42	2950	92.0	0.88	19.5	8.0	35.6	2.3	3.2	20.3	19.1	0.045	12.1	20.29	88
*15	132M	38	2945	92.0	0.87	26.9	7.9	48.6	2.1	2.9	28	25.6	0.025	16.5	29.1	80
15	160M	42	2945	92.4	0.88	26.4	7.8	48.6	2.1	2.9	27.4	25.9	0.051	16.5	27.44	98
18.5	160L	42	2935	92.2	0.89	32.5	7.6	60.2	2.1	2.7	34.0	31.7	0.057	20.4	33.22	108
*22	160L	42	2935	91.6	0.89	38.8	8.0	71.46	1.9	3	41	36.5	0.065	24.2	38.2	89
22	180M	48	2940	92.3	0.90	38.2	8.2	71.46	1.9	3	40.2	36.8	0.075	24.2	38.2	125
30	200L	55	2950	93.0	0.90	51.7	7.6	97.12	1.9	3	54.5	49.9	0.124	33	51.8	165
37	200L	55	2950	93.5	0.90	63.5	7.6	119.78	1.9	3	66.8	61.2	0.139	40.7	63.5	190

(%)
COS Φ
I_N (A)
I_L/I_N
T_N (Nm)

Efficiency full load
Power factor
Current full load
Current locked rotor
Torque full load

T_L/T_N
T_B/T_N
J=^{1/4}GD²
(kg)

Torque locked rotor
Torque break down
Moment of inertia
Weight of foot mount motor

* "S2 rated"





1500 R/MIN (4 POLE) - FRAME SIZES 56 - 200L

kW	MOTOR FRAME	SHAFT SIZE	SPEED (R/MIN)	400V / 50Hz							380V 50Hz	415V 50Hz	J= ^{1/4} GD ² (kg.m ²)	440V 60Hz		(Kg)
				(%)	COS Φ	IN (A)	IL/IN	TN (NM)	TL/TN	TB/TN	IN (A)	IN (A)		kW	IN (A)	
0.09	56	9	1330	62.0	0.69	0.30	3.4	0.65	2.7	2.7	0.32	0.29	0.0001	0.1	0.38	3.6
0.13	56	9	1340	62.0	0.71	0.42	3.9	0.97	2.4	2.5	0.44	0.4	0.0002	0.15	0.44	4.1
0.18	63	11	1360	62.0	0.73	0.59	4.4	1.26	2.1	2.2	0.62	0.57	0.0003	0.2	0.61	4.7
0.25	71	14	1370	67.3	0.74	0.76	5.2	1.74	2.1	2.2	0.80	0.73	0.0008	0.28	0.79	6.0
0.37	63	11	1365	65	0.08	1.06	4.4	2.6	3.3	2.7	1.12	1.02	0.0009	0.41	1.12	5.7
0.37	71	14	1375	72.2	0.69	1.09	4.5	2.6	3.3	2.7	1.15	1.05	0.001	0.41	1.12	6.3
0.55	71	14	1380	71	0.74	1.48	4.8	3.8	2.5	2.6	1.57	1.43	0.0012	0.61	1.57	7.3
0.55	80	19	1390	72.1	0.75	1.45	4.8	3.8	2.5	2.6	1.53	1.4	0.0018	0.61	1.57	10
0.72	80	19	1405	75.7	0.76	1.90	5.0	5.1	2.4	2.5	2.0	1.8	0.0021	0.8	2.05	11
*1.1	80	19	1415	83.8	0.74	2.6	6.1	7.4	2.8	3.0	2.59	2.37	0.0022	1.21	2.59	12.5
1.1	90S	24	1425	84.0	0.74	2.6	6.2	7.4	2.9	3.0	2.6	2.5	0.0026	1.21	2.59	18
1.5	90L	24	1430	86.2	0.75	3.4	7.0	10.0	3.1	3.4	3.4	3.3	0.0029	1.65	3.39	20.5
*2.2	90L	24	1435	86.4	0.77	4.7	8.2	14.4	3.1	3.5	4.77	4.37	0.0037	2.42	4.77	15.5
2.2	100L	28	1455	86.5	0.78	4.7	8.3	14.4	3.1	3.5	4.8	4.7	0.0058	2.42	4.77	29
3	100L	28	1455	87.4	0.79	6.2	8.0	19.7	2.7	3.0	6.5	6.0	0.0071	3.3	6.35	34
*4	100L	28	1455	88.3	0.78	8.0	7.3	26.3	2.6	3.1	8.37	7.67	0.09	4.4	8.37	27
4	112M	28	1455	88.9	0.79	8.2	7.3	26.3	2.6	3.1	8.4	8.1	0.011	4.4	8.37	38
*5.5	112M	28	1455	89.2	0.82	10.6	7.1	36.0	2.0	2.7	11.3	10.30	0.017	6.05	11.3	30
5.5	132S	38	1460	90.2	0.83	10.6	7.1	36.0	2.0	2.7	11.0	10.4	0.023	6.05	11.3	53
7.5	132M	38	1455	90.5	0.84	14.3	7.4	49.2	2.3	2.8	14.9	14.0	0.032	8.25	15	63
*11	132M	38	1460	91.0	0.84	21	7.3	71.5	2.1	3.2	21.8	20.0	0.05	12.1	21.8	58
11	160M	42	1470	91.0	0.84	20.7	7.4	71.5	2.1	3.2	21.3	20.6	0.079	12.1	21.8	90
15	160L	42	1465	91.8	0.85	27.6	7.5	97.8	2.0	3.1	28.4	27.2	0.096	16.5	29.1	104
*18.5	160L	42	1485	90.1	0.85	34	7.5	120.2	2.1	2.8	35.4	32.9	0.12	24.2	33.6	102
18.5	180M	48	1470	92.3	0.86	33.6	7.5	120.2	2.1	2.8	35.4	32.4	0.139	24.2	33.6	120
22	180L	48	1470	92.8	0.86	39.8	7.5	142.9	2.1	2.5	41.9	38.4	0.158	24.2	39.8	131
30	200L	55	1470	93.3	0.86	54	7.5	161.0	2.1	2.5	56.8	52	0.262	33	53.9	168

(%)
COS Φ
IN (A)
IL/IN
TN (NM)

Efficiency full load
Power factor
Current full load
Current locked rotor
Torque full load

TL/TN
TB/TN
J=^{1/4}GD²
(kg)

Torque locked rotor
Torque break down
Moment of inertia
Weight of foot mount motor

* "S2 rated"

