

PRODUCT INFORMATION PACKET

Model No: SCA0451A3111GAAD01

Catalog No: SCA0451A3111GAAD01

45kW, General Purpose Low Voltage IEC Motor, 3 phase, 2 Pole, 415V, B3, 50Hz, 92.9%, 225M Frame, TEFC
Cast Iron IE2 Efficiency Motors





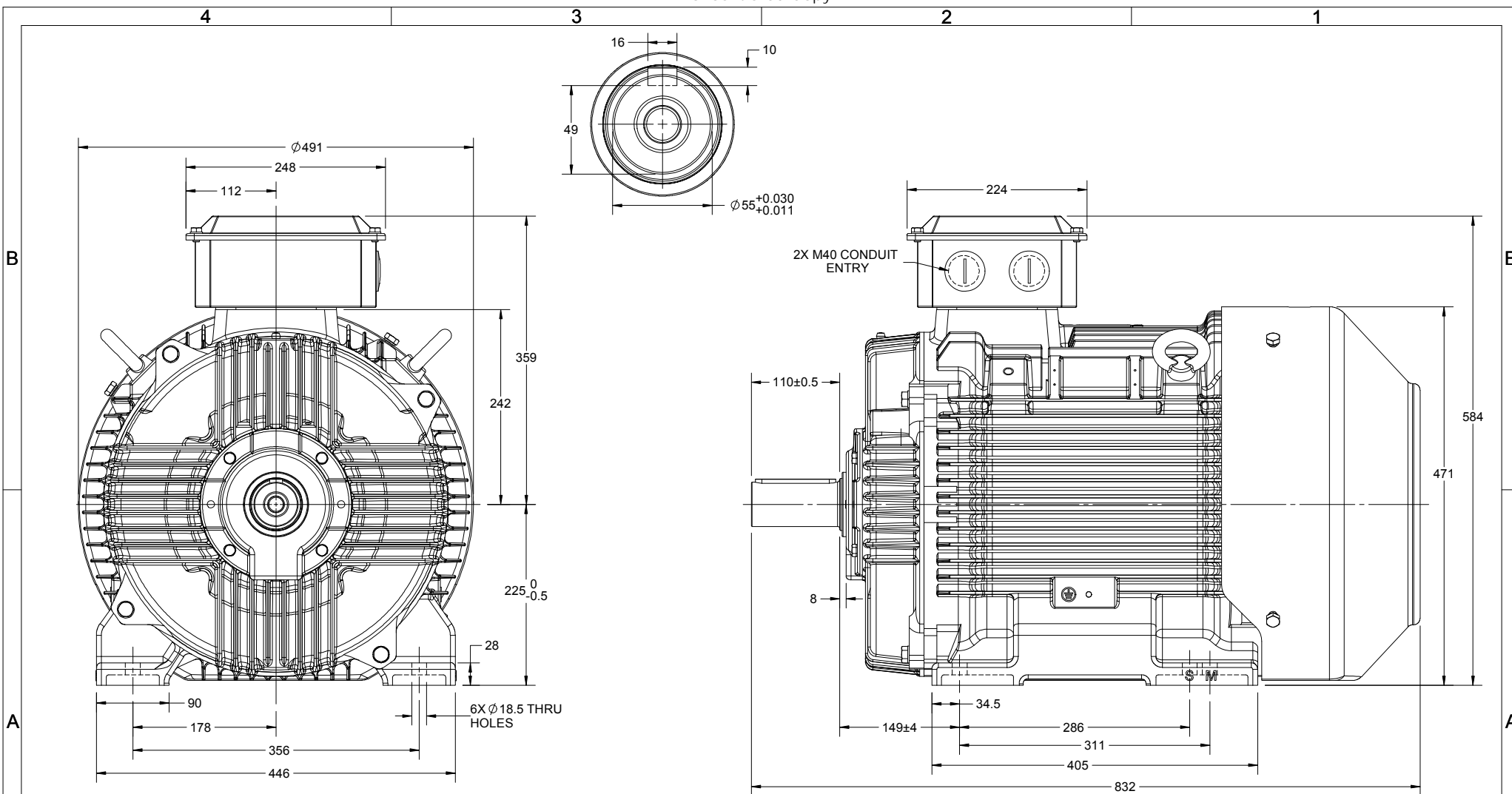
Nameplate Specifications

Output HP	60 Hp	Output KW	45.0 kW
Frequency	50 Hz	Voltage	415 V
Current	75.8 A	Speed	2970 rpm
Service Factor	1	Phase	3
Efficiency	92.9 %	Power Factor	0.89
Duty	S1	Insulation Class	F
Frame	225M	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6313
Opp Drive End Bearing Size	6213	UL	No
CSA	No	CE	Yes
IP Code	55		

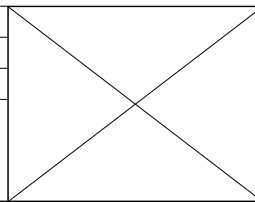
Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	B3	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	832 mm	Frame Length	425 mm
Shaft Diameter	55 mm	Shaft Extension	110 mm
Assembly/Box Mounting	TOP		
Connection Drawing	8442000085	Outline Drawing	0222500892

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DRAWING REVISION B	REVISION BY LK	DATE 28/06/2019
ECO ECO-0169536	APPROVED BY SR	DATE 28/06/2019
ECO DESCRIPTION MODEL UPDATED AS PER NEW 3D STRUCTURE <small>COPYRIGHT REGAL BELOIT AMERICA, INC. ALL RIGHTS RESERVED. PROPRIETARY AND CONFIDENTIAL INFORMATION - THIS DOCUMENT IS THE PROPERTY OF REGAL BELOIT AMERICA, INC. (OWNER) AND CONTAINS OWNER'S PROPRIETARY INFORMATION. ANY PERSON, CORPORATION OR OTHER FIRM RECEIVING IT IS DEEMED, BY RECEIVING IT, TO AGREE THAT IT, AND/OR ANY PART OF IT, SHALL NOT BE DISCLOSED TO ANY PERSON, CORPORATION OR OTHER ENTITY, DUPLICATED, AND/OR USED, EXCEPT AS EXPRESSLY APPROVED IN WRITING IN ADVANCE BY OWNER. THIS DOCUMENT SHALL BE RETURNED TO OWNER UPON REQUEST. IT MAY BE SUBJECT TO CERTAIN RESTRICTIONS UNDER APPLICABLE EXPORT CONTROL LAWS AND REGULATIONS.</small>		



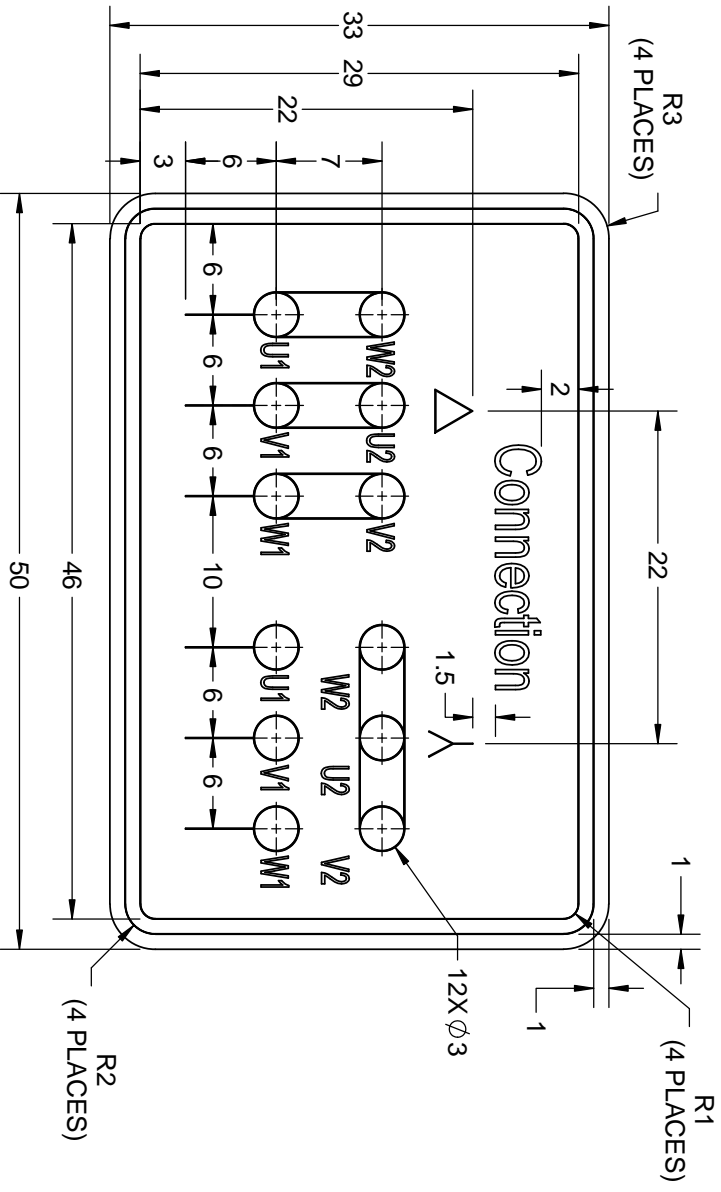
DRAWN BY NIV
DATE 11/01/2018
APPROVED BY JAY
DATE 11/01/2018
REFERENCE
THIRD ANGLE PROJECTION

marathon Motors	
DESCRIPTION OUTLINE 225M-FR-2P-B3 MTG MOTOR TYPE: SCA	
MATERIAL	PROCESS/FINISH
SIZE B	DRAWING NUMBER 0222500892
	SHEET 1 OF 1

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DRAWING REVISION	REVISION BY	DATE
A	SN	13/01/2017
ECO-0116390	APPROVED BY SBD	DATE 13/01/2017
ECO DESCRIPTION NEW DRAWING RELEASE		

GEOMETRIC TOLERANCE		
LINEAR DIM	>0-6	±0.1
	>6-30	±0.2
	>30-120	±0.3



- NOTES:
1. PRESSURE-SENSITIVE ADHESIVE COATED PAPER ON THE BACK OF SELF-ADHESIVE.
 2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
 3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.442.2017

DRAWN BY SN		 Regal Beloit America, Inc.		
DATE 16/12/2016				
APPROVED BY SBD		DESCRIPTION CONN DIAGRAM-NAMEPLATE		
DATE 16/12/2016				
REFERENCE				
THIRD ANGLE PROJECTION	SIZE A	DRAWING NUMBER 8442000085	PROCESS/FINISH	SHEET 1 OF 1



Model No. SCA0451A3111GAAD01

U (V)	Δ / Y Conn	f (Hz)	P		I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load				PF at __ load			I _w /I _N [pu]	T _k /T _N [pu]	T _k /T _N [pu]
			[kW]	[hp]					S/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
415	Δ	50	45	60	75.8	2970	144.00	IE2	-	92.9	92.9	93.3	0.89	0.86	0.78	6.4	2.1	3.3

Motor type	SCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	225M	Motor weight - approx.	386 kg
Duty	S1	Gross weight - approx.	416 kg
Voltage variation *	± 10%	Motor inertia	0.3376 kgm ²
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	2.2 mm/s
Design	N	Noise level (1meter distance from motor)	84 dB(A)
Service factor	1.0	No. of starts hot/cold/Equally spread	2/3/4
Insulation class	F	Starting method	DOL
Ambient temperature	-20 to +50 °C	Type of coupling	Direct
Temperature rise (by resistance)	70 [Class B] K	LR withstand time (hot/cold)	15/30 s
Altitude above sea level	1000 meter	Direction of rotation	Bi-directional
Hazardous area classification	NA	Standard rotation	Clockwise form DE
Zone classification	NA	Paint shade	RAL 5014
Gas group	NA	Accessories	
Temperature class	NA	Accessory - 1	-
Rotor type	Aluminum Die cast	Accessory - 2	-
Bearing type	Anti-friction ball	Accessory - 3	-
DE / NDE bearing	6313 C3 / 6213 C3	Terminal box position	TOP
Lubrication method	Regreasable	Maximum cable size/conduit size	1R x 3C x 50mm ² /2 x M40 x 1.5
Type of grease	Shell Gadus S5 V100 or Equivalent	Auxiliary terminal box	NA

I_w/I_N - Locked Rotor Current / Rated Current

T_k/T_N - Breakdown Torque / Rated Torque

T_k/T_N - Locked Rotor Torque / Rated Torque

NOTE

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

* Voltage, Frequency and combine variation are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

Efficiency Standards	Europe	China	India	Aus/Nz	Brazil	Global IEC
	-	-	IS 12615 : 2018	-	-	-



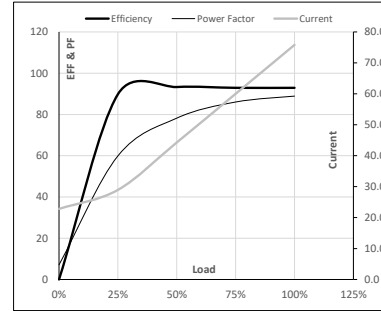
Model No. SCA0451A3111GAAD01

Enclosure	U [V]	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m ²]	Weight [kg]
TEFC	415	Δ	50	45	60	75.8	2970	14.68	144.00	IE2	50	S1	1000	0.3376	386

Motor Load Data

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	22.8	29.0	44.3	60.0	75.8	
Torque	Nm	0.0	35.7	71.6	107.6	144.0	
Speed	r/min	3000	2993	2986	2978	2970	
Efficiency	%	0.0	89.8	93.3	92.9	92.9	
Power Factor	%	7.1	59.9	78.2	86.0	88.9	

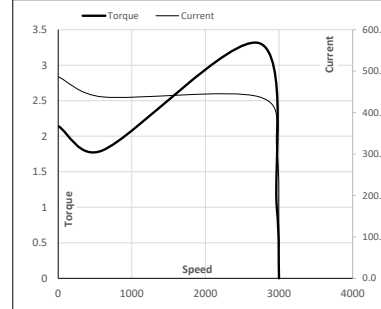
Performance vs Load Chart



Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2732	2970	3000
Current	A	486.5	437.8	313.9	75.8	22.8
Torque	pu	2.1	1.8	3.3	1	0

Starting Characteristics Chart



NOTE Refer data sheet for applicable standard and tolerances on performance parameters

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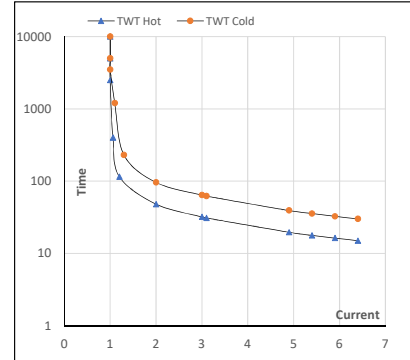
Model No. SCA0451A3111GAAD01

Enclosure	U (V)	Δ / Y Conn	f (Hz)	P (kW)	P (hp)	I (A)	n (rpm)	T (kgm)	T (Nm)	IE Class	Amb (°C)	Duty	Elevation (m)	Inertia (kg·m ²)	Weight (kg)
TEFC	415	Δ	50	45	60	75.8	2970	14.68	144.00	IE2	50	S1	1000	0.3376	386

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s 10000	48	32	25	18	17	15	
TWT Cold	s 10000	96	64	50	37	34	30	
Current	pu	1	2	3	4	5	5.5	6.4

Thermal Characteristics Chart



NOTE Refer data sheet for applicable standard and tolerances on performance parameters

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