

GX SERIES

DIESEL GENERATOR
GROUPE ELECTROGENE DIESEL
GRUPO ELECTROGENO DIESEL
GRUPPO ELETTOGENO DIESEL

MODEL
 MODELE
 MODELO
 MODELLO

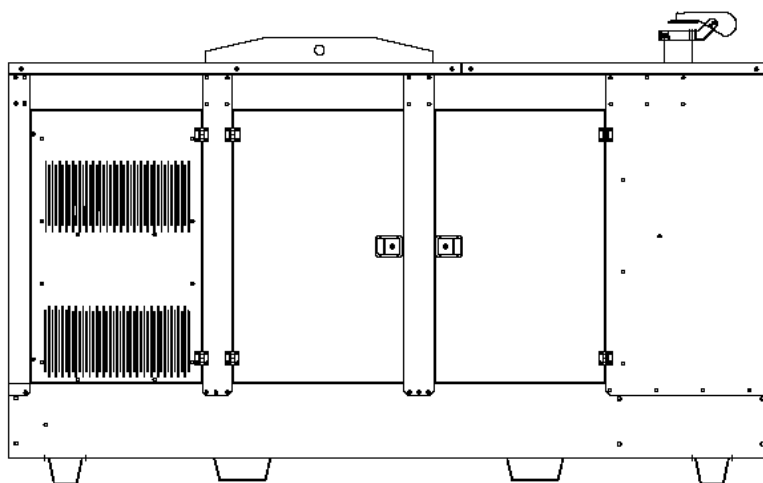
GX330V

POWERED BY






SOUNDPROOF VERSION



GENERATING SET PERFORMANCE PERFORMANCES DU GROUPE PRESTACIONES DEL GRUPO PRESTAZIONI DEL GRUPPO		50 Hz	60 Hz
Voltage Voltage Voltaje Tensione	V	400 / 230	V 220 / 127
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kVA 300	kVA 304
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kVA 330	kVA 334
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWe 240	kWe 243
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWe 264	kWe 267
Power factor Facteur de puissance Factor de potencia Fattore di potenza	cos φ	0,8	0,8
Fuel consumption Consommation combustible Consumo de combustible Consumo combustibile	70 %	l/h 46,3	l/h 47,6

ENGINE MOTEUR MOTOR MOTORE		VOLVO PENTA		TAD 842 GE	
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		1500 rpm		1800 rpm	
Prime Power					
Puissance service continue	PRP	kWm	261	kWm	261
Potencia servicio continuo					
Potenza servizio continuo					
Stand-by Power					
Puissance service secours	LTP	kWm	287	kWm	287
Potencia servicio emergencia					
Potenza servizio in emergenza					
Specific fuel consumption			25 % 221		25 % 232
Consumption spécifique combustible		g/kWh	50 % 209	g/kWh	50 % 216
Consumo específico de combustible			75 % 201		75 % 204
Consumo específico combustible			100 % 198		100 % 203
Diesel 4 Stroke – Injection type					Direct
Diesel 4 temps – Type injection					Directe
Diesel 4 tiempos – Tipo de inyección					Directa
Diesel a 4 tempi – Tipo di iniezione					Diretta
Aspiration type					Turbocharged
Type d’aspiration					Suralimentée
Tipo de aspiracion					Sobrealimentado
Tipo d’aspirazione					Sovralimentata
Cooling system					Water
Refroidissement					Eau
Sistema de refrigeración					Agua
Raffreddamento					Acqua
Speed governor					Electronic
Régulateur de tours					Électronique
Regulador					Eléctronico
Regolatore di giri					Elektronico
Cylinders, numbers and arrangement					
Nombre et disposition des cylindres					6 L
Cilindros, numero y disposición					
Numero e disposizione dei cilindri					
Total displacement					
Cylindrée totale				cm ³	7.770
Cilindrata total					
Cilindrata totale					
Bore x stroke					
Alésage x course				mm	110 x 135
Diametro x carrera					
Alesaggio x corsa					
Compression ratio					
Rapport de compression					17.5:1
Relación de compresión					
Rapporto di compressione					
Engine electric system voltage					
Voltage système électrique moteur					24 V
Voltaje sistema eléctrico motor					
Voltaggio sistema elettrico motore					

ALTERNATOR ALTERNATEUR ALTERNADOR ALTERNATORE		LEROY SOMER				
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		1500 rpm		1800 rpm		
Model Modèle Modelo Modello		LSA 46.3M8		LSA 46.3M8		
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo		40 °C	kVA kWe	300 240	kVA kWe	340 272
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza		40 °C	KVA kVe	318 254	KVA kWe	360 288
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza		27 °C	KVA kVe	330 264	KVA kWe	375 300
Efficiency Rendement Eficienza Efficienza			1/4 2/4 3/4 4/4	91,7 % 93,7 % 93,7 % 93,1 %	1/4 2/4 3/4 4/4	90,9 % 93,5 % 93,7 % 93,3 %
Standard winding connections Liaison des bobinages Tipo de conexión Collegamento avvolgimenti			Y		YY	
Exciter Eccitatrice Excitador Eccitatrice		brushless rotating exciter design with solid state pivotante sans brosses avec pont de diodes pivotants puente de diodos sin escobillas rotantes rotante senza spazzole con ponte di diodi rotanti				
Poles Poles Polos Poli		4				
Phases Phases Fases Fasi		3 + N				
Wires Fils Hilos Morsetti		12				
Voltage regulation Regulation Voltage Regulación voltaje Regolazione tensione		± 0,25 %				
Insulation class Classe d' isolation Classe de aislamiento Classe di isolamento		H				
Enclosure Degré de protection mécanique Grado de protección mecánica Grado di protezione meccanica		IP 23				
Maximun overspeed Survitesse Régimen máximo Velocità di fuga		2250 min ⁻¹				
AVR model with 300% shortcircuit current Modèle AVR avec un courant de court-circuit du 300% Modelo AVR con una corriente de corto circuito del 300% Modello AVR con corrente di cortocircuito del 300%				(3 In) : 10 s	D 350 AREP	
Derating for temperature Déclassement pour température Declasamiento para temperatura Declassamento per temperatura				0 ÷ 40°C	0	
				40°C ÷ 45°C	4%	
Derating for altitude Déclassement pour altitude Declasamiento para altitud Declassamento per altitudine				0 ÷ 1000 m	0	
				1000 ÷ 2500 m	4% / 500 m	

LOGISTIC INFORMATION
INFORMATIONS LOGISTIQUES
INFORMATION LOGISTICA
INFORMAZIONI LOGISTICHE

	Integrated fuel tank capacity Capacité réservoir intégré Capacidad Tanque integrado Capacità Serbatoio integrato		Weight Poids Peso Peso	Dimensions Cotes d'encombrement Medidas externas Dimensioni d'ingombro		
	(L)			(kg)	(cm)	
	STD	EXTRA 1	L		W	H
SOUND PROOF VERSION VERSION INSONORISEE VERSION INSONORISADA VERSIONE INSONORIZZATA	600	900	3050	390	120	242

GENSET STANDARD EQUIPMENT
EQUIPEMENT STANDARD GROUPE ELECTROGENE
EQUIPAMIENTO STANDARD GRUPO ELECTROGENO
EQUIPAGGIAMENTO STANDARD GRUPPO ELETTOGENO

GB	F	E	I
<ul style="list-style-type: none"> Lifting eye Vibration dampers Integrated bunded fuel tank Battery Manual autostart control panel With DSE7310 Emergency stop button Sound proof canopy of galvanized steel with residential silencer Fork lift guides 	<ul style="list-style-type: none"> Crochet de levage Amortisseurs de vibrations Réservoir intégré avec bac de rétention Batterie Coffret de contrôle manuel autostart avec DSE7310 Bouton arrêt d'urgence Capote d'insonorisation d'acier galvanisé avec silencieux résidentiel Supports pour fourches 	<ul style="list-style-type: none"> Gancho central Apagadores de vibracion Tanque combustible integrado con bandeja para la recogida de líquidos Bateria Cuadro manual autostart con DSE7310 Botón parada de emergencia Cabina de insonorización de acero cincado con silenciador residencial Supportes para carretilla 	<ul style="list-style-type: none"> Gancio centrale di sollevamento Antivibranti Serbatoio integrato con vasca di raccolta liquidi Batteria Quadro manuale autostart con DSE7310 Pulsante arresto di emergenza Cabina di insonorizzazione di acciaio zincato con marmitta residenziale Porta forche

SYNCHRONIZING CONTROL PANEL
COFFRET POUR PARALLELE
CUADRO ELECTRICO DE SINCRONIZACIÓN
QUADRO ELETTRICO DI PARALLELO

ComAp IntelliGen 1000 + IntelliVision 5.2

630 A (400 V - 3 ph - 50Hz - 1500 rpm)
 800 A (220 V - 3 ph - 60Hz - 1800 rpm)

ComAp
 The heart of smart control



Order code: IG31000XBBB

Datasheet

Paralleling gen-set controller for switchgear applications

Product description

- > True RMS measurement is used with Voltage, Current and Power measurement.
- > Comprehensive paralleling Gen-set controller for island or mains parallel operation
- > Cooperation with up to 64 gen-set / mains / tie controllers
- > Direct communication with ECU
- > Secure Remote control and monitoring
- > Highly flexible yet configurable solution for switchgear applications

Key features

- > Hardware compliant to the latest switchgear market needs
- > State of the art AC accuracy measurements which allows to participate on primary frequency control mechanism, grid balancing and demand response projects
- > Cybernetic security by design, based on the ANSI/ISA-62443 standard
- > Large portion of both local and remote monitoring options, with high number of at once connected clients split into "trusted" and "untrusted" zones
- > Mains parallel operation with support of Grid codes, compliant to European Grid codes (Requirements for Generators, VDE-AR-N 4110:2018, VDE-AR-N 4105:2019, G99), American IEEE 1547
- > Multiple Island operation with cooperation up to 64 additional gen-set/mains/tie controllers
- > Several load transfer options with possibility of less than 100ms load transfer
- > Redundant inter-controller line for critical applications like datacentres, hospitals

- > Double redundancy of the kW and kVAR sharing
- > User management allowing to handle up to 30 unique users
- > AirGate 2.0 makes sure that the connection to the controller is established faster from all around the world, and is more reliable than ever before.
- > Internal PLC interpreter with easy to use PLC Editor, for simple and fast creation of specific logic
- > Up to 31 characters in texts, parameters, Alarms for system clarity and easy troubleshooting
- > Compatibility with ComAp IG/IS/IM-NT line, IG200, IG500 controllers
- > ENABLE/DISABLE concept of features and protections makes the system highly versatile yet simple and easy for both commissioning engineers and operators
- > Support for 400 Hz generators (measurement up-to 520 Hz)

Application overview





Order code: RD2IV5BXBAA

5" display for ComAp controllers

Datasheet

Product description

InteliVision 5.2 is an industrial 5" remote color display for ComAp controllers. It is designed as an easy-to-use Plug&Play display for monitoring and control of single gen-set in various applications.

Key features

- > 5" colour screen with resolution of 800 x 480 pixels
- > Plug & Play operation
- > Possibility of screens customization (Screen Editor)
- > 5 configurable user buttons under the screen
- > Modern look and graphical user interface
- > Trends monitoring screen (up to 4 channels)
- > Communication with controller via Ethernet
- > Operating temperature: -30 °C to +70 °C (-40 °C to +70 °C if the device is powered on above -30 °C)
- > Front protection compliant with IP65
- > 1x Analog Input, 1x Binary Output












Application overview



SOUNDPROOF CANOPY
CAPOTE D'INSONORISATION
CAPOTA DE INSONORIZACION
CABINA INSONORIZZATA

GB	F	E	I
<p>The Bruno Super Silent soundproof canopy has been designed with the aim of achieving the maximum noise level reduction and to provide a perfect cooling of the engine. The cooling airflow is forced through fixed circuits. The canopy is suitable for tropical ambient application. The exhaust gas silencer is residential type internally mounted. The canopy is completely built of hot galvanized carbon sheet steel. The sheets have a thickness 20/10. The structure is fully bolted, fixed by a special polyethylene sealing, completely free from electrical installation. All the panels can be easily removed. The cab is provided with doors of wide opening for easy access to generating set for the maintenance operations. The soundproofing materials are highly fire resistant and self-extinguishing.</p>	<p>La capote insonorisée Bruno Super Silent à été conçue pour atteindre le niveau de bruit le mineur possible et un refroidissement du moteur parfait. Le souffle d'air refroidissant est canalisé en circuits fixes. La capote est apte à être utilisée dans les ambiances tropicales. Le silencieux des gaz d'échappement, de type résidentiel, est mis à l'intérieur de la capote. La cabine est construite en acier galvanisé à chaud. Les tôles ont une épaisseur de 20/10. La structure est complètement boulonnée et fixée à travers des garnitures spéciales au polyéthylène. Tous les panneaux sont facilement amovibles. La cabine est dotée de portes avec grandes ouvertures qui permettent un accès facile au groupe électrogène pour les opérations de maintenance. Les matériaux d'insonorisation sont fortement résistant au feu et auto-extinguibles.</p>	<p>La capota insonorizada Bruno Super Silent tiene sido planeada con el objetivo de alcanzar el menor nivel de rumorosidad posible y un perfecto enfriamiento del motor. El sopló de aire es canalizado en circuitos fijos. La cabina es apta a ser utilizada en ambientes tropicales. El silenciador de los gases de descargue, de tipo residencial, es colocado dentro de la cabina. La cabina es construida en acero cincado. Las chapas tienen un espesor de 20/10. La estructura es completamente bullonada y montada con sellos especiales de poliétilene. Todos los paneles son fácilmente removibles. La cabina es dotada con puertas con amplias aberturas que permiten el fácil acceso al grupo electrógeno por las operaciones de manutención. Los materiales insonorizantes son muy resistentes al fuego y auto-extinguentes.</p>	<p>La cabina insonorizzata Bruno Super Silent è stata progettata allo scopo di raggiungere il minor livello di rumorosità possibile e un perfetto raffreddamento del motore. Il soffio d'aria raffreddante è canalizzato in circuiti fissi. La cabina è adatta ad essere utilizzata in ambienti tropicali. Il silenziatore dei gas di scarico, di tipo residenziale, è collocato all'interno della cabina. La cabina è costruita in acciaio zincato a caldo. Le lamiere hanno uno spessore di 20/10. La struttura è completamente bullonata e fissata tramite speciali sigilli al polietilene. Tutti i pannelli sono facilmente rimovibili. La cabina è dotata di porte con ampie aperture che consentono il facile accesso al gruppo elettrogeno per le operazioni di manutenzione. I materiali insonorizzanti sono altamente resistenti al fuoco e autoestinguenti.</p>

Our quality in 13 points
Notre qualité résumée en 13 points
Nuestra calidad en 13 puntos
La nostra qualità in 13 punti

1		Internal residential silencer for lower sound levels Silencieux interne pour un niveau bas de bruit Silenciador interno para un nivel de rumorosidad más bajo Silenziatore interno per un livello di rumorosità più basso
2		Integrated fuel tank of different sizes Réservoirs de combustible disponibles, sur demande, de capacité supérieure Tanques integrados disponibles, como opción, de capacidad superior Serbatoi integrati disponibili, su richiesta, di capacità superiore
3		Control panel viewing window to easily check status of generating set Fenêtre de visualisation du panneau de contrôle pour un contrôle plus facile du status opérationnel du groupe Ventana de visualización del panel de control por un más fácil control del estatus operativo del grupo Finestra di visualizzazione del pannello di controllo per un più facile controllo dello status operativo del gruppo
4		Lockable access doors for extra safety and security Porte d'accès avec serrure pour une sûreté majeure Puertas de acceso con cerradura para una mayor seguridad Porte di accesso con serratura per una maggiore sicurezza
5		Galvanized bolts Boulons galvanisés Pernos cincados Bulloni zincati
6		Emergency stop button Interrupteur d'arrêt d'urgence Botón parada de emergencia Pulsante arresto di emergenza
7		Fuel tank cap with external key (optional) Bouchon gasoil avec clé positionne a l'extérieur (en option) Tapo gasoleo con llare situado a l'externo (opcional) Tappo gasolio con chiave posizionato all'esterno (in opzione)
8		Fully banded base frame Réservoir amovible avec bague de retention Tanque integrado sfilabile con el envase para recoger los líquidos Serbatoio integrato sfilabile con vasca raccolta liquidi
9		Central lifting hook Crochet central d'enlèvement Gancho de elevación Gancio di sollevamento centrale
10		Doors location convenient to controls and service area Placement des portes pour rendre les contrôles plus faciles Colocación de las puertas para facilitar los controles Collocazione delle porte per facilitare i controlli
11		High serviceability level Haut niveau d'accessibilité pour la manutention Alto nivel de accesibilidad para la manutención Alto livello di accessibilità per la manutenzione
12		Large cable entry area for easy installation Grande zone d'entré des câbles pour une installation plus facile Amplia área de entrada cables para una instalación fácil Ampia area di entrata cavi per una facile installazione
13		Galvanized metal steel sheet pre-treated prior to powder coating Tôles en acier galvanisé pré-traitées avant le vernissage à poudre Chapas de acero cincado pre-tratadas antes de la pintura a polvo Lamiere di acciaio zincato pre-trattate prima della verniciatura a polvere

TAD841-843GE

7.7 liter, in-line 6 cylinder



The TAD841-843GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

Durability & low noise

Designed for easiest, fastest and most economical installation. Well-balanced to produce smooth and vibration-free operation with low noise level.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission

The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption.

The TAD841-843GE complies with EU Stage II exhaust emission regulations.

Easy service & maintenance

Easily accessible service and maintenance points contribute to the ease of service of the engine.

- Electronic governing EMS 2.4
- CAN bus communication
- Compact design for the power class
- High power to weight ratio
- Emission compliant acc. to EU Stage II
- Noise optimized engine design
- RoHS2 Compliant
- Dual speed

	50 Hz / 1500 rpm									60 Hz / 1800 rpm								
	Continuous power			Prime power			Standby power			Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD841GE	165	152	190	220	202	253	242	223	278	169	156	194	225	207	259	248	228	285
TAD842GE	196	182	228	261	243	303	287	267	334	196	182	227	261	243	303	287	267	334
TAD843GE	210	195	245	280	260	326	308	286	359	205	191	239	274	254	318	301	280	350

Generator efficiency (typical): TAD841GE 92%, TAD842GE/TAD843GE 93%

kWm = kiloWatt mechanical, net with fan*; kWe = kiloWatt electrical = kWm x Generator eff.; kVA = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8

1 kW = 1 hp x 1.36; 1 hp = 1 kW x 0.7355

*) According to technical data

TAD841-843GE

7.7 liter, in-line 6 cylinder

Technical Data

Configuration and no. of cylinders	in-line 6
Displacement, l (in ³)	7.7 (470)
Method of operation	4-stroke
Bore, mm (in.)	110 (4.33)
Stroke, mm (in.)	135 (5.31)
Wet weight, engine only, kg (lb)	737 (1625)

Technical description

Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces
- Piston cooling for low piston temperature and reduced ring temperature
- Drop forged steel connecting rods
- Crankshaft hardened bearing surfaces and fillets for moderate load on main and big-end bearings
- Keystone top compression rings for long service life
- Replaceable valve guides and valve seats
- Lift eyelets
- Flywheel housing with connection acc. to SAE1/SAE2
- Flywheel for flexplate
- Fixed integrated radiator front engine suspension
- Transport brackets, rear

Lubrication system

- Full flow cartridge insert filter
- Rotary displacement oil pump driven by the crankshaft
- Deep front oil sump
- Oil dipstick, short in front
- Integrated full flow oil cooler, side-mounted

Fuel system

- Common rail
- Gear driven fuel feed pump
- Electronic governor
- Fuel prefilter with water separator
- Fine fuel filter of cartridge insert type

Intake and exhaust system

- Connection flange for exhaust line
- Turbo charger, centre low with exhaust flange
- Two-stage air filter, with cyclon
- Heater flange in charge air inlet (with relay)

Cooling system

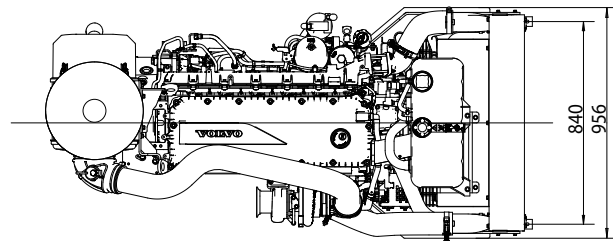
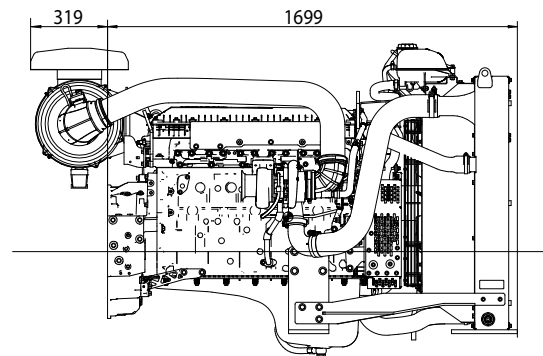
- Belt driven, maintenance-free coolant pump with high degree of efficiency
- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block
- Reliable thermostat with minimum pressure drop
- Pusher fan
- Visco fan or fixed fan

Electrical system

- Engine Management System 2 (EMS 2.4), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Module (CIM). The CIM converts the digital CAN bus signal to an analog signal, making it possible to connect a variety of instruments. The CIM is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The CIM also presents error codes in clear text.
- Sensors for oil pressure, boost pressure, boost temp, exhaust temp, coolant temp, water in fuel, fuel pressure and two speed sensors.

Target dimensions

Not for installation. Dimensions in mm.



Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for governing purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

Power standards

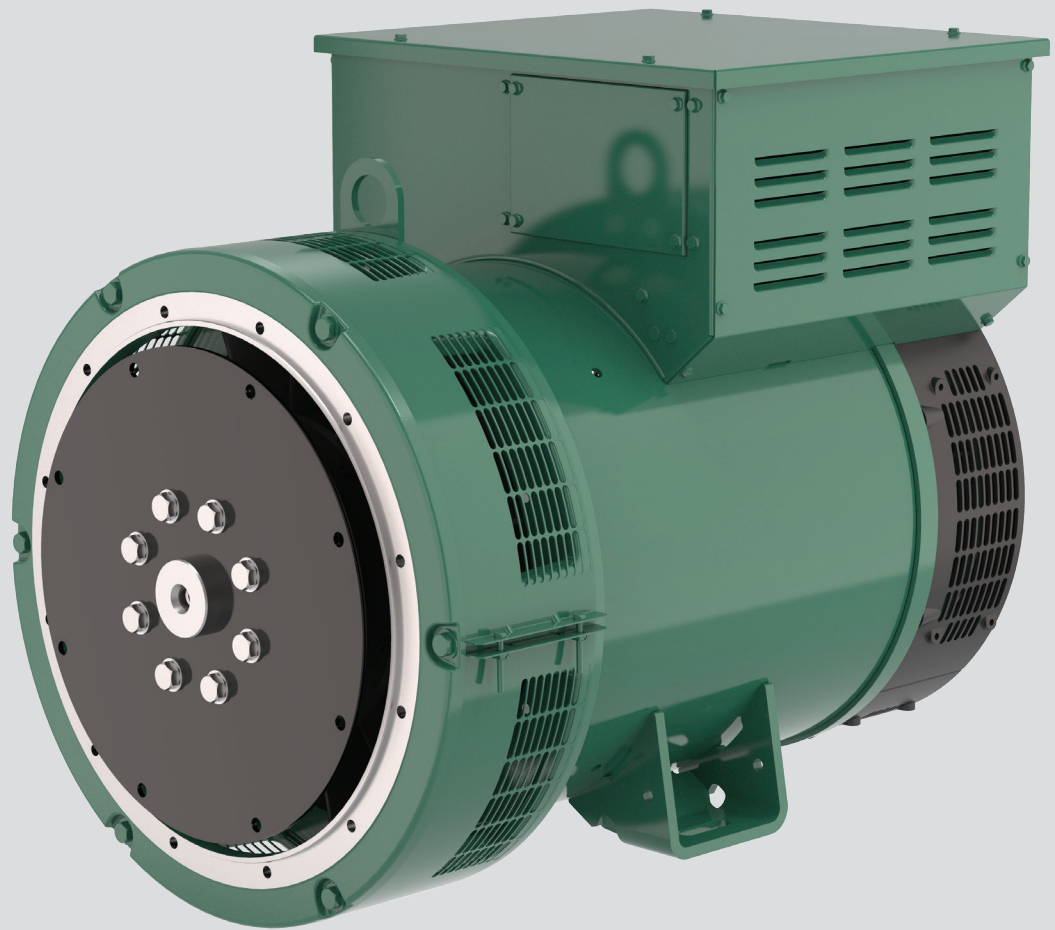
The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ/kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% at rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5.

VOLVO PENTA

AB Volvo Penta

SE-405 08 Göteborg, Sweden
www.volvopenta.com

Please contact your local Volvo Penta dealer for further information. Please note that products illustrated may differ from production models. Not all models and accessories are available in all markets, and standard equipment may vary between different markets. Every effort has been made to ensure that facts and figures are correct at the time of publication. However, Volvo Penta reserves the right to make changes without prior notice at any time.



LSA 46.3

Low Voltage Alternator - 4 pole

230 to 365 kVA - 50 Hz / 288 to 456 kVA - 60 Hz
Electrical and mechanical data

LEROY-SOMER™

Nidec
All for dreams

Specially adapted to applications

The LSA 46.3 alternator is designed to be suitable for typical generator applications, such as: backup, prime power, cogeneration, marine applications, rental, telecommunications, etc.

Compliant with international standards

The LSA 46.3 alternator conforms to the main international standards and regulations: IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA C22.2 n°100-14, UL 1446 (UL 1004 on request), marine regulations, etc.

It can be integrated into a EC marked generator.

The LSA 46.3 is designed, manufactured and marketed in an ISO 9001 and ISO 14001 environment.

Top of the range electrical performance

- Class H insulation
- Standard 12-wire re-connectable winding, 2/3 pitch, type no. 6
- Voltage range 50 Hz: 220 V - 240 V and 380 V - 415 V (440 V)
- Voltage range 60 Hz: 208 V - 240 V and 380 V - 480 V
- High efficiency and motor starting capacity
- Other voltages are possible with optional adapted windings:
 - 50 Hz: 440 V (no. 7), 500 V (no. 9), 550 V (no. 22), 600 V (no. 23), 690 V (no. 10 or 52)
 - 60 Hz: 380 V and 416 V (no. 8), 600 V (no. 9)
- Complies with EN 61000-6-3, EN 61000-6-2, EN 55011, group 1 class B for European zone (EC marking)

Excitation and regulation system suited to the application

Excitation system				Regulation options			
Volage regulator	SHUNT	AREP (option)	PMG (option)	C.T. Current transformer for paralleling	Mains paralleling	3-phase sensing	Remote voltage potentiometer
R250	Standard	-	-	-	-	-	√
D350	-	Standard	Standard	√	-	√	√
D550	Option	Option	Option	√	√	√	√

√ : Possible option

Protection system suited to the environment

- The LSA 46.3 is IP 23
- Standard winding protection for clean environments with relative humidity $\leq 95\%$, including indoor marine environments
- Options:
 - Filters on air inlet : derating 5%
 - Filters on air inlet and air outlet (IP 44) : derating 10%
 - Winding protections for harsh environments and relative humidity greater than 95%
 - Space heaters
 - Thermal protection for winding and shields

Reinforced mechanical structure using finite element modelling

- Compact and rigid assembly to better withstand generator vibrations
- Steel frame
- Cast iron flanges and shields
- Twin-bearing and single-bearing versions designed to be suitable for engines on the market
- Half-key balancing
- Sealed for life ball bearings, regreasable bearings (optional)
- Direction of rotation: clockwise and anti-clockwise (without derating)

Accessible terminal box proportioned for optional equipment

- Easy access to the voltage regulator and to the connections
- Possible inclusion of accessories for paralleling, protection and measurement
- 9-way terminal block for voltage reconnection

General characteristics

Insulation class	H	Excitation system	SHUNT	AREP / PMG
Winding pitch	2/3 (winding 6)	AVR type	R250	D350
Number of wires	12	Voltage regulation (*)	± 0.5%	± 0.25%
Protection	IP 23	Short-circuit current	-	300% (3 IN) : 10s
Altitude	≤ 1000 m	Total Harmonic Distortion THD (**)	no load < 2.5% - on load < 2.5%	
Overspeed	2250 min ⁻¹	Waveform: NEMA = TIF (**)	< 50	
Air flow	0.48 m ³ /s (50Hz) / 0.58 m ³ /s (60Hz)	Waveform: I.E.C. = THF (**)	< 2%	

(*) Steady state. (**) Total harmonic distortion between phases, no-load or on-load (non-distorting).

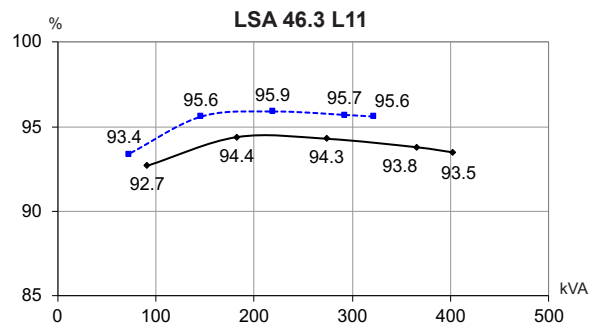
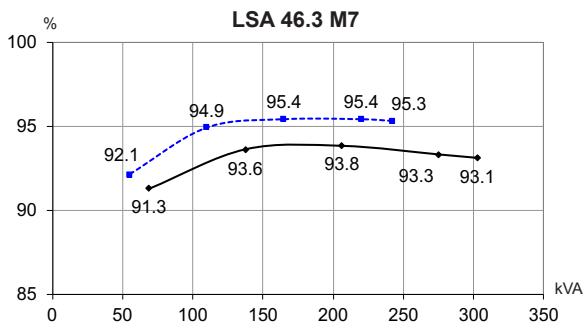
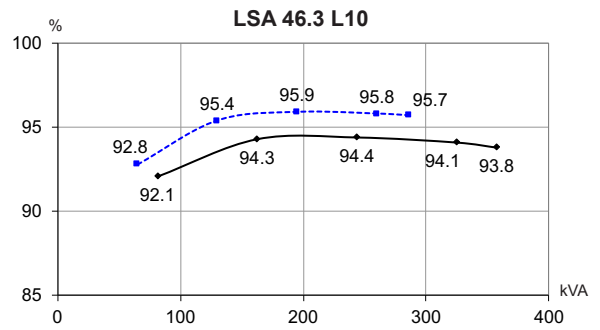
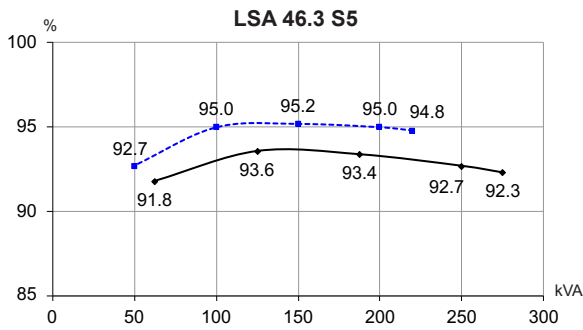
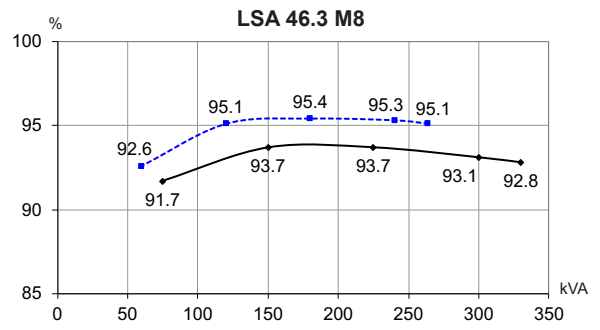
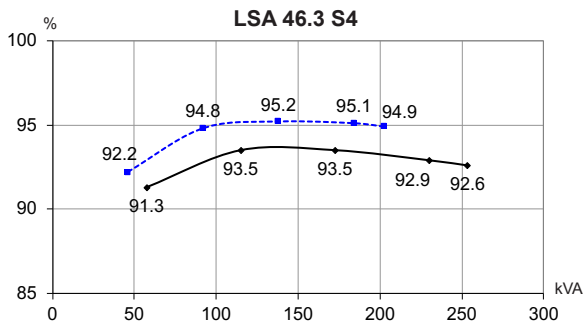
Ratings 50 Hz - 1500 R.P.M.

kVA / kW - P.F. = 0.8																				
Duty/T°C	Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C				Stand-by/27°C					
Class/T°K	H/125°K					F/105°K					H/150°K				H/163°K					
Phase	3 ph.			1 ph.		3 ph.			1 ph.		3 ph.		1 ph.		3 ph.			1 ph.		
Y	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ
Δ	220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V
YY				220V					220V					220V					220V	
LSA 46.3 S4 kVA	230	230	230	219	138	209	209	209	200	126	244	244	244	232	146	253	253	253	240	152
kW	184	184	184	175	110	167	167	167	160	101	195	195	195	186	117	202	202	202	192	122
LSA 46.3 S5 kVA	240	250	250	238	150	218	228	228	216	137	254	265	265	252	159	264	275	275	261	165
kW	192	200	200	190	120	174	182	182	173	110	204	212	212	202	127	211	220	220	209	132
LSA 46.3 M7 kVA	275	275	275	261	165	250	250	250	238	150	292	292	292	277	175	303	303	303	287	182
kW	220	220	220	209	132	200	200	200	190	120	234	234	234	222	140	242	242	242	230	146
LSA 46.3 M8 kVA	290	300	300	285	180	264	273	273	259	164	307	318	318	302	191	319	330	330	313	200
kW	232	240	240	228	144	211	218	218	207	131	246	254	254	242	153	255	264	264	250	160
LSA 46.3 L10 kVA	325	325	325	309	195	300	300	300	281	177	345	345	345	327	207	358	358	358	340	215
kW	260	260	260	247	156	240	240	240	225	142	276	276	276	262	166	286	286	286	272	172
LSA 46.3 L11 kVA	350	365	365	347	210	319	332	332	316	191	371	387	387	368	225	385	400	400	380	231
kW	280	292	292	277	168	255	266	266	253	153	297	310	310	294	180	308	320	320	304	185

Ratings 60 Hz - 1800 R.P.M.

kVA / kW - P.F. = 0.8																				
Duty/T°C	Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C				Stand-by/27°C					
Class/T°K	H/125°K					F/105°K					H/150°K				H/163°K					
Phase	3 ph.			1 ph.		3 ph.			1 ph.		3 ph.		1 ph.		3 ph.			1 ph.		
Y	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ
Δ	220V	240V	240V		240V	220V	240V	240V		240V	220V	240V	240V		240V	220V	240V	240V		240V
YY		208V	220V	240V			208V	220V	240V			208V	220V	240V			208V	220V	240V	
LSA 46.3 S4 kVA	226	250	262	288	152	206	227	238	262	138	240	264	278	305	161	250	274	288	316	167
kW	181	200	210	230	122	165	182	190	210	110	192	211	222	244	129	200	219	230	253	134
LSA 46.3 S5 kVA	245	265	280	313	165	223	241	255	284	150	260	281	297	331	175	270	292	308	344	182
kW	196	212	224	250	132	178	193	204	227	120	208	225	238	265	140	216	234	246	275	146
LSA 46.3 M7 kVA	275	300	315	344	182	250	273	287	313	165	292	318	334	364	192	303	330	347	378	200
kW	220	240	252	275	146	200	218	230	250	132	234	254	267	291	154	242	264	278	302	160
LSA 46.3 M8 kVA	290	315	340	375	200	264	287	309	337	180	307	334	360	395	210	319	347	375	412	218
kW	232	252	272	300	160	211	230	247	270	144	246	267	288	316	168	255	278	300	330	174
LSA 46.3 L10 kVA	315	345	365	406	215	287	314	332	370	195	334	366	387	431	227	347	380	402	447	236
kW	252	276	292	325	172	230	251	266	296	156	267	293	310	345	182	278	304	322	358	189
LSA 46.3 L11 kVA	360	393	419	456	231	328	358	381	415	210	382	417	444	483	250	396	432	461	502	254
kW	288	314	335	365	185	262	286	305	332	168	305	333	355	386	200	317	346	369	402	203

Efficiencies 400V - 50 Hz (..... P.F.: 1) (— P.F.: 0.8)



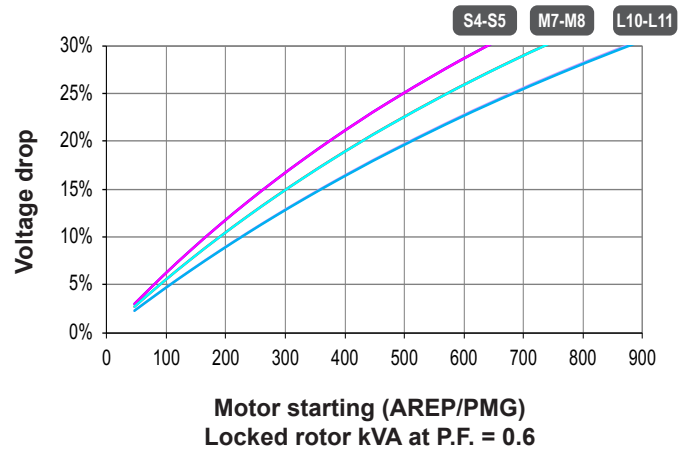
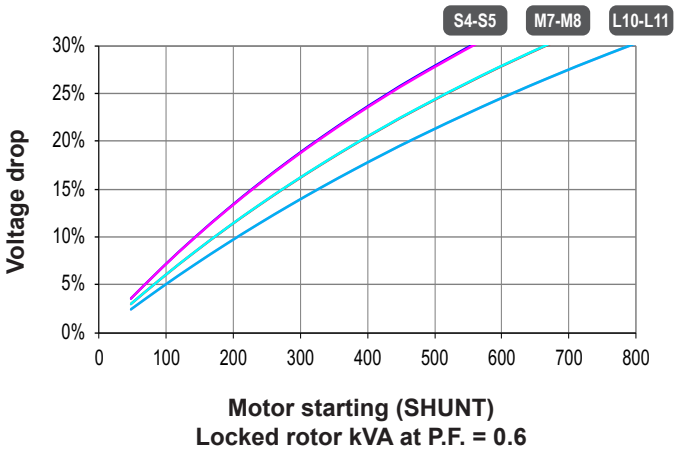
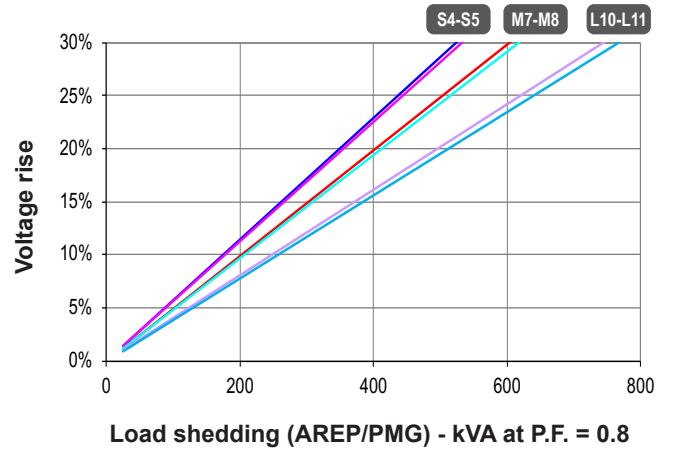
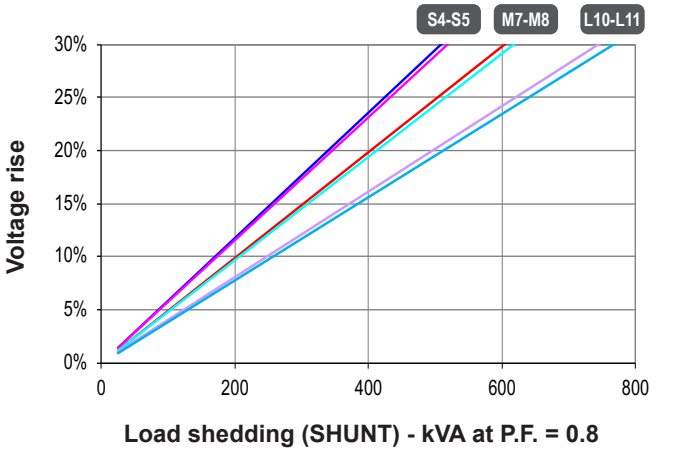
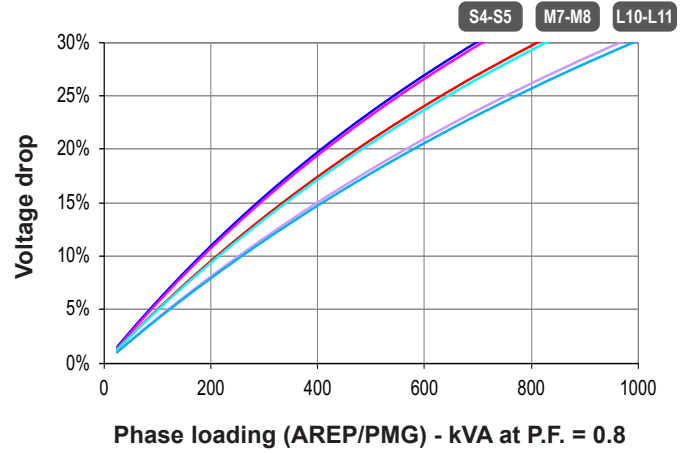
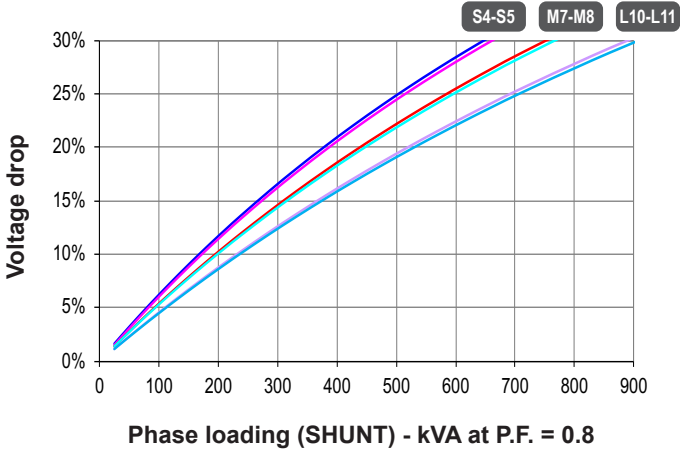
Reactances (%). Time constants (ms) - Class H / 400 V

	S4	S5	M7	M8	L10	L11
Kcc Short-circuit ratio	0.4	0.36	0.49	0.44	0.44	0.39
Xd Direct-axis synchro. reactance unsaturated	339	369	316	344	316	355
Xq Quadrature-axis synchro. reactance unsaturated	173	188	161	175	161	181
T'do No-load transient time constant	2452	2452	2543	2543	2686	2686
X'd Direct-axis transient reactance saturated	13.8	15	12.4	13.5	11.7	13.2
T'd Short-circuit transient time constant	100	100	100	100	100	100
X''d Direct-axis subtransient reactance saturated	11	12	9.9	10.8	9.4	10.5
T''d Subtransient time constant	10	10	10	10	10	10
X''q Quadrature-axis subtransient reactance saturated	14.6	15.9	13.1	14.3	12.6	14.1
Xo Zero sequence reactance	0.57	0.62	0.51	0.56	0.49	0.55
X2 Negative sequence reactance saturated	12.86	13.98	11.57	12.62	11.01	12.37
Ta Armature time constant	15	15	15	15	15	15

Other class H / 400 V data

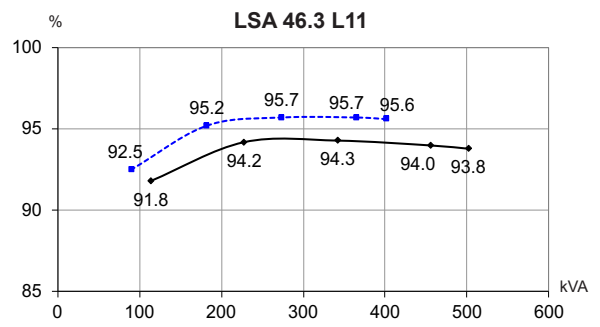
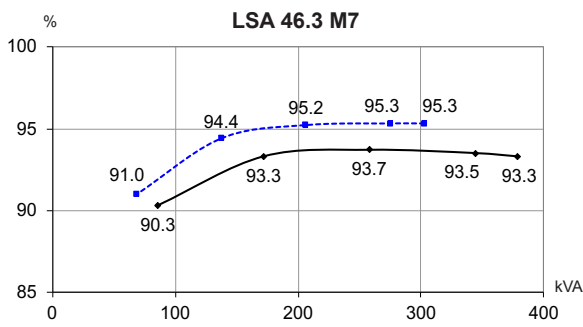
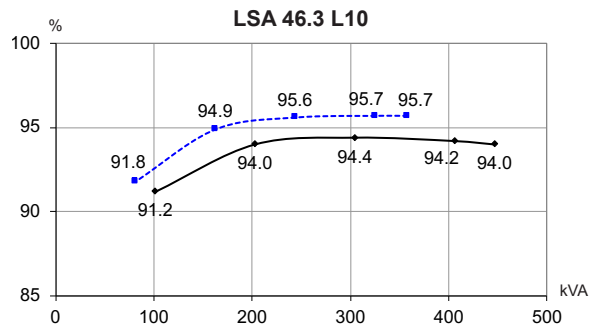
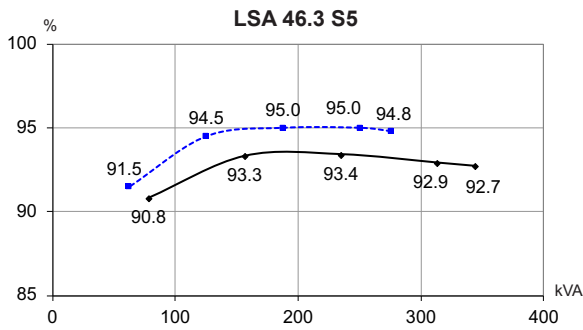
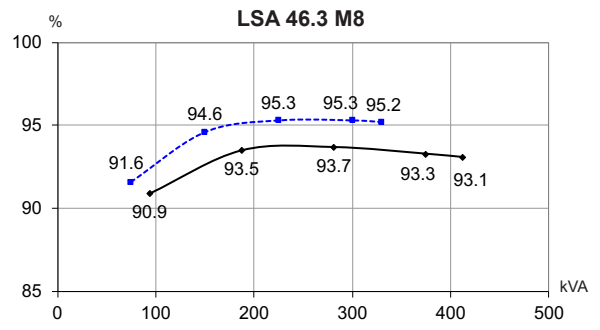
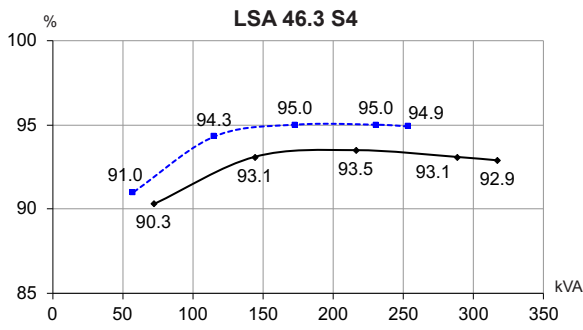
io (A) No-load excitation current (SHUNT/AREP)	0.78	0.78	0.94	0.94	0.81	0.81
ic (A) On-load excitation current (SHUNT/AREP)	3.06	3.32	3.14	3.41	2.94	3.29
uc (V) On-load excitation voltage (SHUNT/AREP)	41.4	44.6	46.2	49.7	42.8	47.5
ms Response time ($\Delta U = 20\%$ transient)	500	500	500	500	500	500
kVA Start ($\Delta U = 20\%$ cont. or 30% trans.) SHUNT	554	557	667	664	791	790
kVA Start ($\Delta U = 20\%$ cont. or 30% trans.) AREP	639	640	736	738	876	880
% Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 _{LAG}	13.2	14	13.6	14.4	13.6	14.7
% Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 _{LAG}	12.4	13.1	12.7	13.5	12.6	13.7
W No-load losses	3660	3660	4449	4449	4775	4775
W Heat dissipation	13869	15662	15583	17615	16271	19169

Transient voltage variation 400V - 50 Hz



- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by $K = \text{Sine P.F.} / 0.6$
- 2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

Efficiencies 480V - 60 Hz (..... P.F.: 1) (— P.F.: 0.8)



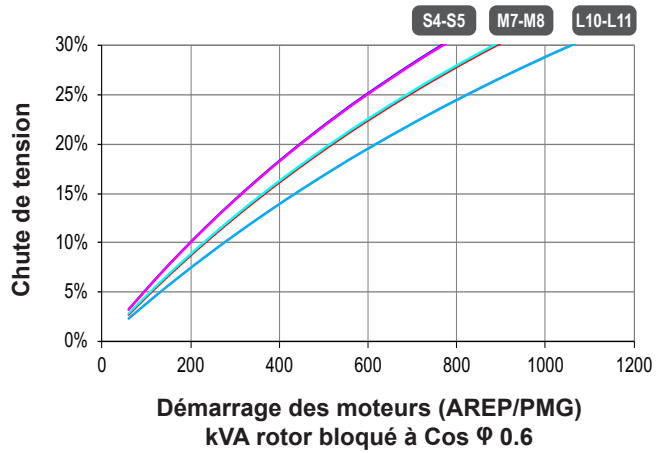
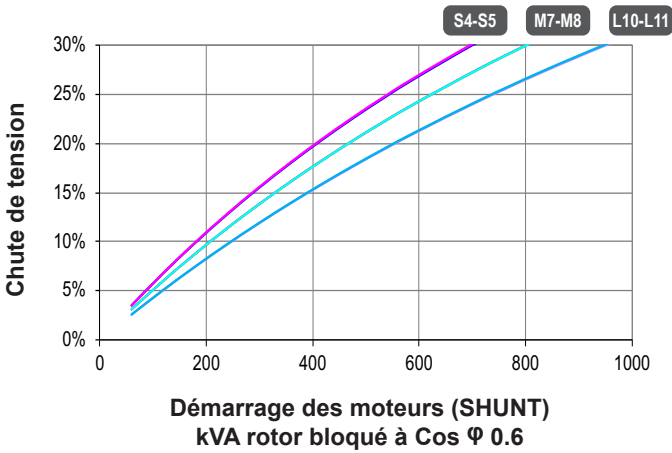
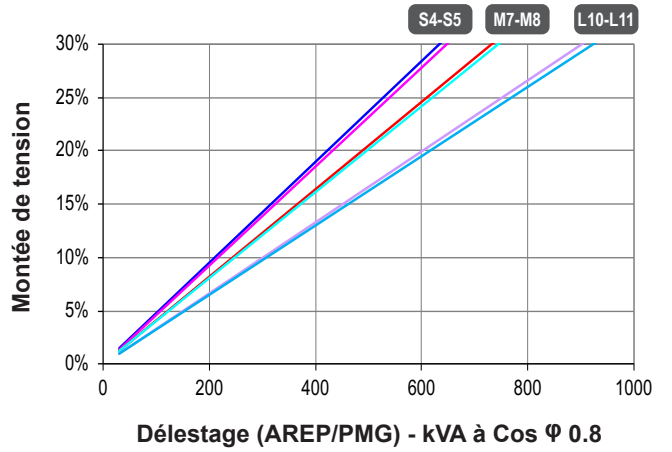
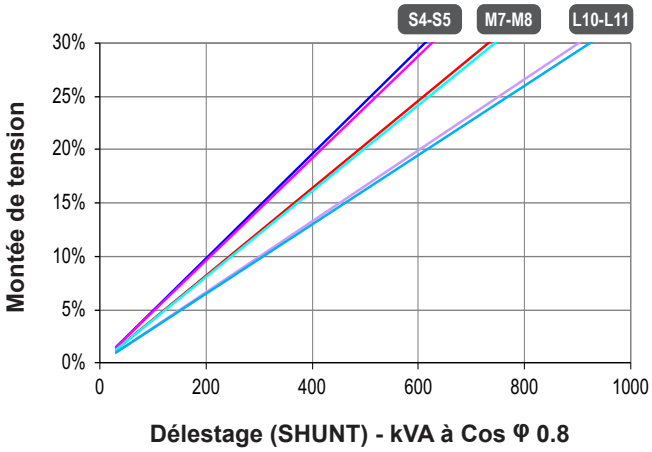
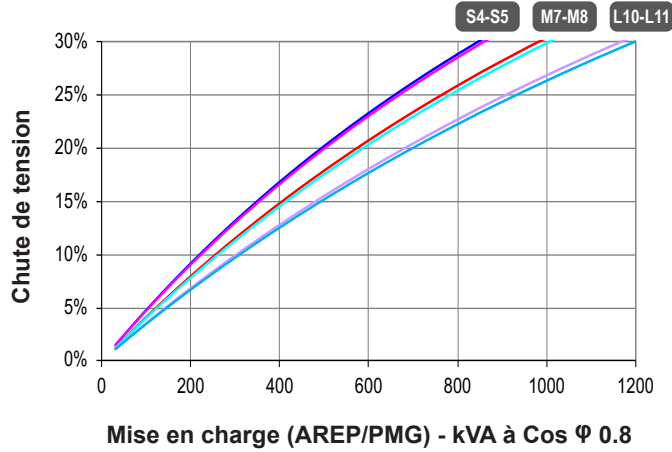
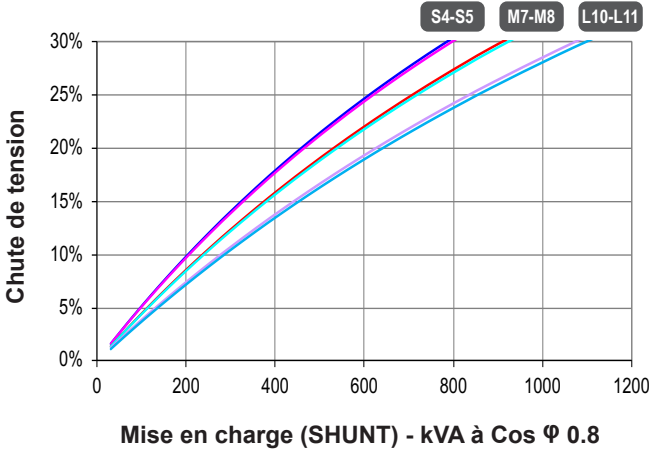
Reactances (%). Time constants (ms) - Class H / 480 V

	S4	S5	M7	M8	L10	L11
Kcc Short-circuit ratio	0.38	0.35	0.47	0.43	0.42	0.37
Xd Direct-axis synchro. reactance unsaturated	354	385	329	359	329	370
Xq Quadrature-axis synchro. reactance unsaturated	180	196	168	183	168	188
T'do No-load transient time constant	2452	2452	2543	2543	2686	2686
X'd Direct-axis transient reactance saturated	14.4	15.7	12.9	14.1	12.2	13.7
T'd Short-circuit transient time constant	100	100	100	100	100	100
X''d Direct-axis subtransient reactance saturated	11.5	12.5	10.3	11.2	9.8	11
T''d Subtransient time constant	10	10	10	10	10	10
X''q Quadrature-axis subtransient reactance saturated	15.2	16.6	13.7	14.9	13.1	14.1
Xo Zero sequence reactance	0.6	0.65	0.53	0.58	0.51	0.57
X2 Negative sequence reactance saturated	13.42	14.58	12.06	13.14	11.46	12.87
Ta Armature time constant	15	15	15	15	15	15

Other class H / 480 V data

io (A) No-load excitation current (SHUNT/AREP)	0.78	0.78	0.94	0.94	0.81	0.81
ic (A) On-load excitation current (SHUNT/AREP)	3.05	3.3	3.13	3.38	2.92	3.26
uc (V) On-load excitation voltage (SHUNT/AREP)	41.7	44.9	46.5	50	43.1	47.7
ms Response time ($\Delta U = 20\%$ transient)	500	500	500	500	500	500
kVA Start ($\Delta U = 20\%$ cont. or 30% trans.) SHUNT	699	695	799	800	947	945
kVA Start ($\Delta U = 20\%$ cont. or 30% trans.) AREP	765	766	887	883	1055	1053
% Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 _{LAG}	13.6	14.4	14	14.9	13.9	15.1
% Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 _{LAG}	12.8	13.5	13.1	13.8	13	14
W No-load losses	5549	5549	6617	6617	7115	7115
W Heat dissipation	16897	18905	18951	21212	19891	23158

Transient voltage variation 480V - 60 Hz

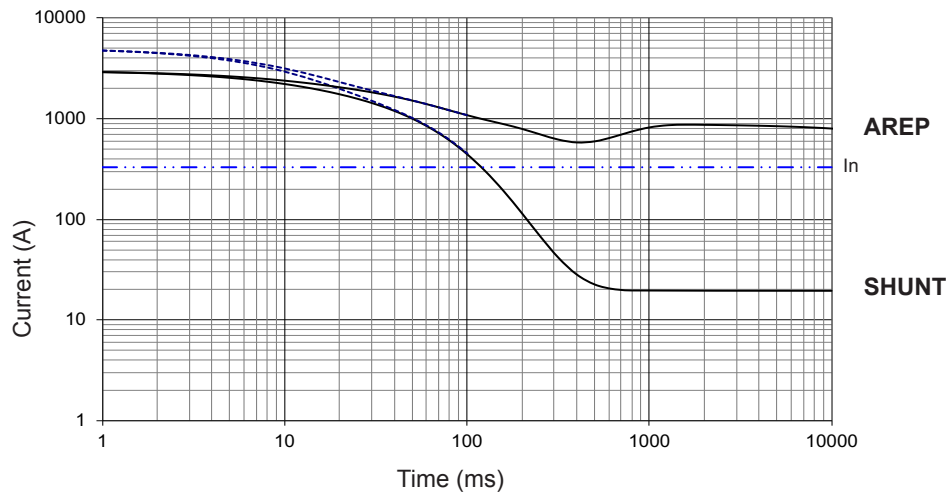


- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by $K = \text{Sine P.F.} / 0.6$
- 2) For voltages other than 480V (Y), 277V (Δ), 240V (YY) at 60 Hz, then kVA must be multiplied by $(480/U)^2$ or $(277/U)^2$ or $(240/U)^2$.

3-phase short-circuit curves at no load and rated speed (star connection Y)

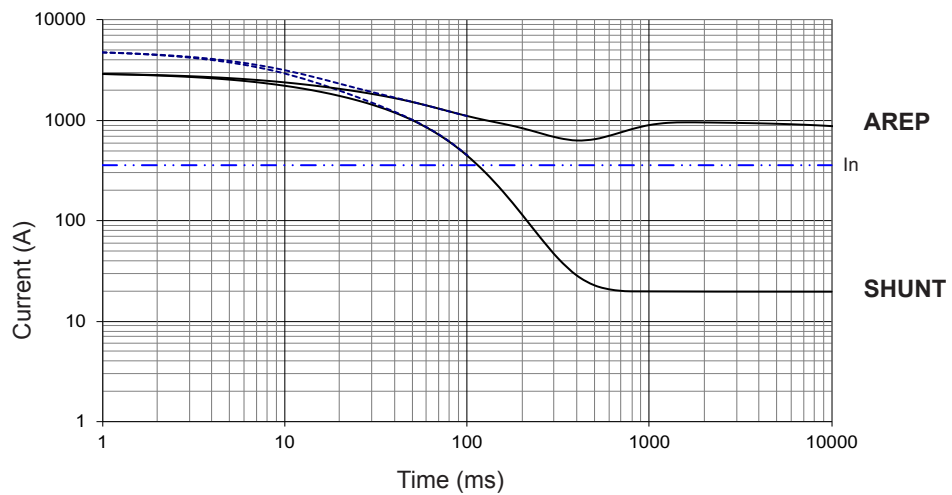
LSA 46.3 S4

Symmetrical —
Asymmetrical - - -



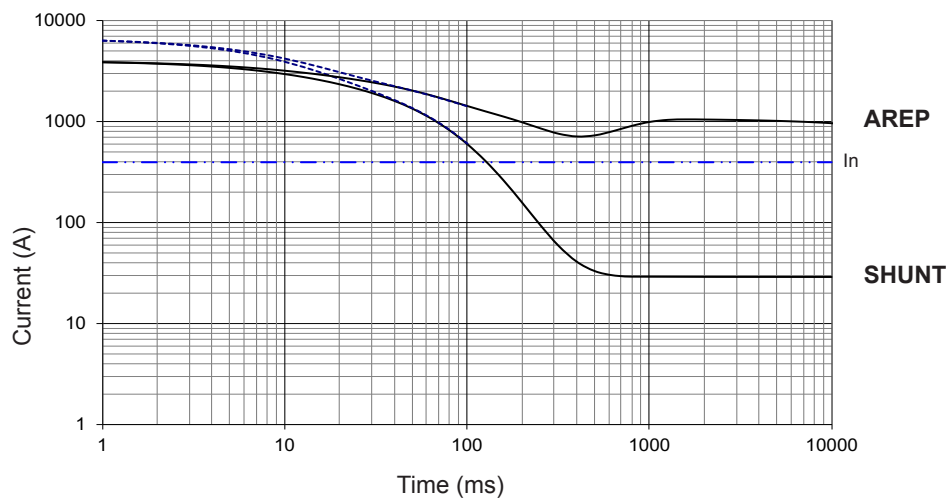
LSA 46.3 S5

Symmetrical —
Asymmetrical - - -



LSA 46.3 M7

Symmetrical —
Asymmetrical - - -



Influence due to connection

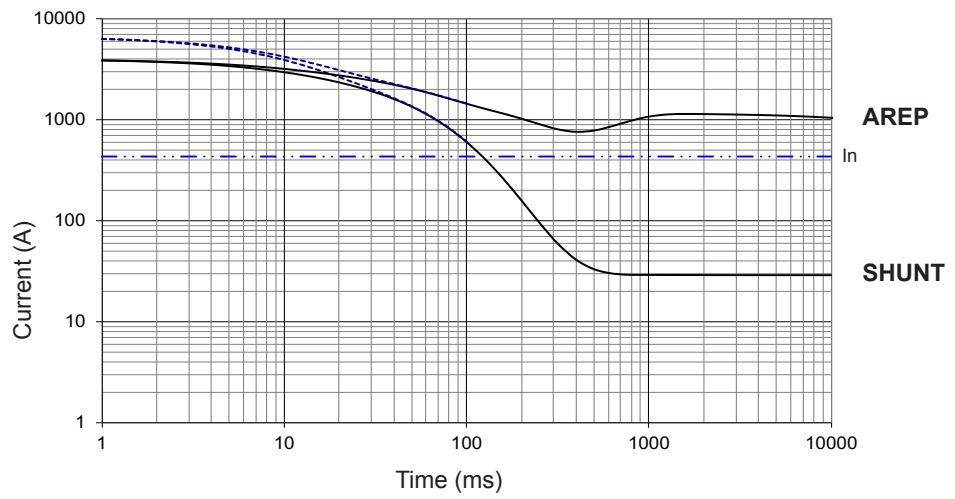
Curves shown are for star (Y) connection.

For other connections, use the following multiplication factors:

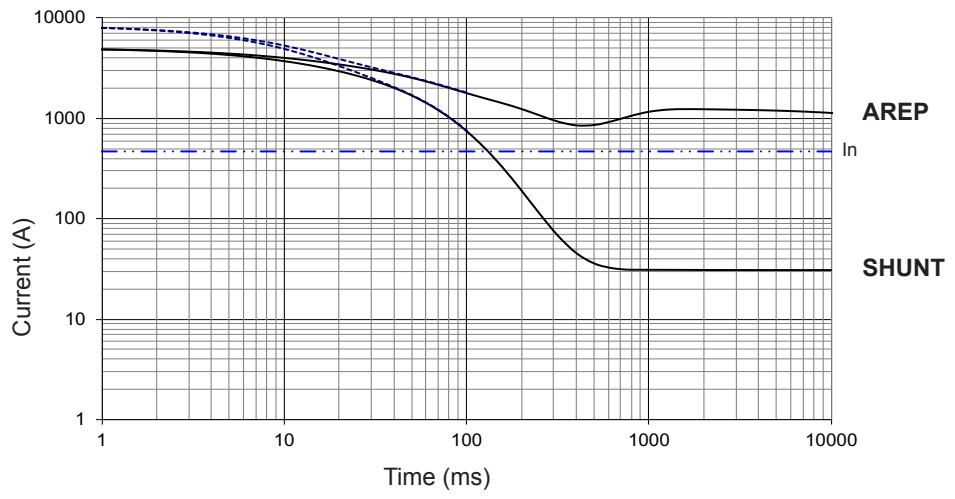
- Series delta : current value x 1.732
- Parallel star : current value x 2

3-phase short-circuit curves at no load and rated speed (star connection Y)

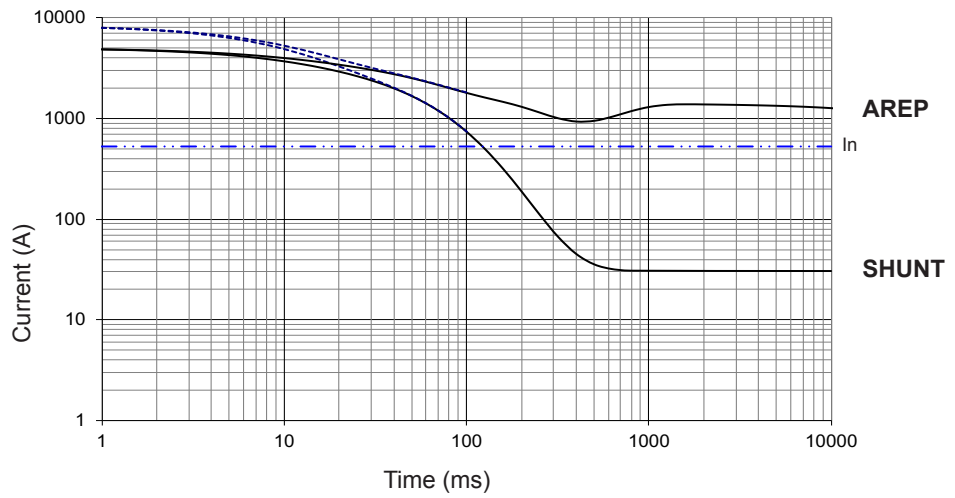
LSA 46.3 M8
 Symmetrical —
 Asymmetrical - - -



LSA 46.3 L10
 Symmetrical —
 Asymmetrical - - -



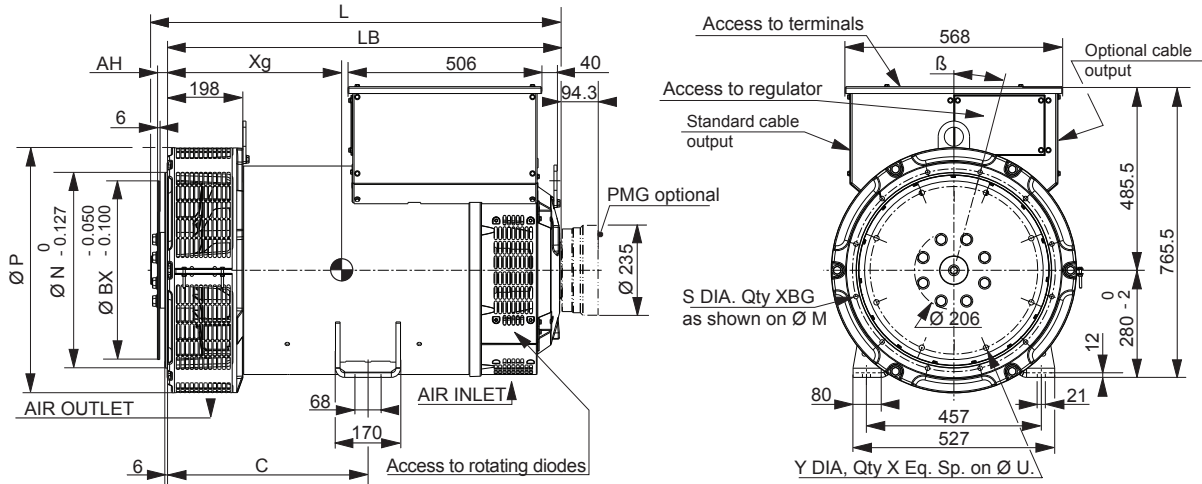
LSA 46.3 L11
 Symmetrical —
 Asymmetrical - - -



Influence due to short-circuit
 Curves are based on a three-phase short-circuit.
 For other types of short-circuit, use the following multiplication factors.

	3-phase	2-phase L/L	1-phase L/N
Instantaneous (max.)	1	0.87	1.3
Continuous	1	1.5	2.2
Maximum duration (AREP/PMG)	10 sec.	5 sec.	2 sec.

Single bearing dimensions



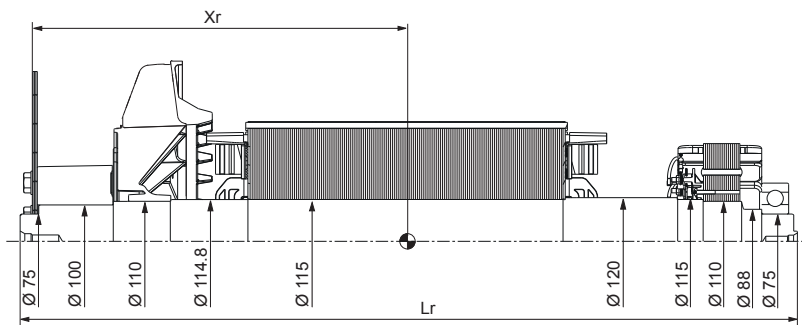
Dimensions (mm) and weight						Coupling			
Type	L without PMG maxi*	LB	Xg	C	Weight (kg)	Flex plate	11 ½	14	18
LSA 46.3 S4	944	892	423	429	674	Flange S.A.E 3	X		
LSA 46.3 S5	944	892	423	429	682	Flange S.A.E 2	X		
LSA 46.3 M7	989	937	445	429	754	Flange S.A.E 1	X	X	
LSA 46.3 M8	989	937	445	429	754	Flange S.A.E 1/2		X	
LSA 46.3 L10**	1084	1032	493	525	888	Flange S.A.E 0		X	X
LSA 46.3 L11**	1084	1032	493	525	888				

* L maxi = LB + AH maxi + 12.4 (only for SAE 11 ½) ** Shaft height = 355 mm optional

Flange (mm)							Flex plate (mm)					
S.A.E.	P	N	M	XBG	S	β°	S.A.E.	BX	U	X	Y	AH
3	600*/641	409.575	428.625	12	11	15°	11 ½	352.42	333.38	8	11	39.6
2	600*/641	447.675	466.725	12	11	15°	14	466.72	438.15	8	14	25.4
1	600*/641	511.175	530.225	12	12	15°	18*	571.5	542.92	6	17	15.7
½	713	584.2	619.125	12	14	15°						
0	713	647.7	679.45	16	14	11° 15'						

* Specific dimension LSA 46.3 S4

Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)									
Flex plate	S.A.E. 11 1/2				S.A.E. 14				
	Type	Xr	Lr	M	J	Xr	Lr	M	J
LSA 46.3 S4		431	928	277	2.93	416	928	277	3.09
LSA 46.3 S5		431	928	277	2.93	416	928	277	3.09
LSA 46.3 M7		459	973	307	3.23	444	973	307	3.39
LSA 46.3 M8		459	973	307	3.32	444	973	307	3.39
LSA 46.3 L10		507	1068	362	3.96	493	1068	362	4.12
LSA 46.3 L11		507	1068	362	3.96	493	1068	362	4.12

NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request. The torsional analysis of the transmission is imperative. All values are available upon request.

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All for dreams

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