

# GX SERIES





## Stage V

**DIESEL GENERATOR**  
**GROUPE ELECTROGENE DIESEL**  
**GRUPO ELECTROGENO DIESEL**  
**GRUPPO ELETTROGENO DIESEL**

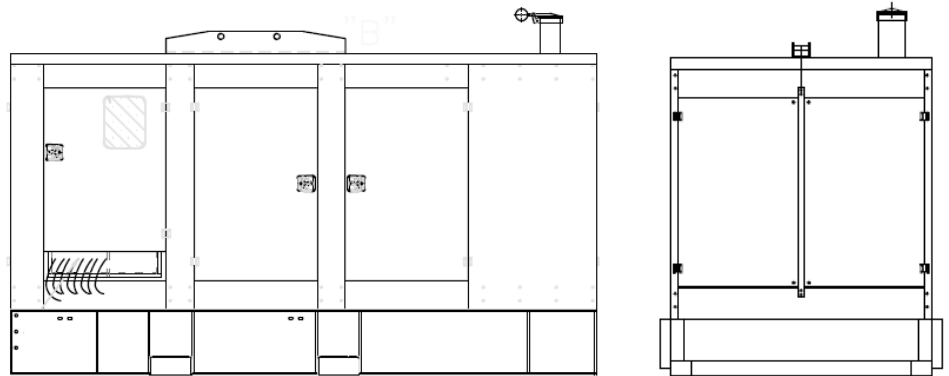
MODEL  
 MODELE  
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 MODELLO

# GX330S V

**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 <b>300</b>	kVA <b>305</b>
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kVA <b>330</b>	kVA <b>335</b>
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWe 240	kWe 244
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWe 264	kWe 268
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 44,9	l/h 46,6

ENGINE MOTEUR MOTOR MOTORE		<b>SCANIA</b>		<b>DC09 320A 02 63</b>	
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		<b>1500 rpm</b>		<b>1800 rpm</b>	
Prime Power					
Puissance service continue	PRP	kWm	259	kWm	262
Potencia servicio continuo					
Potenza servizio continuo					
Stand-by Power					
Puissance service secours	LTP	kWm	285	kWm	288
Potencia servicio emergencia					
Potenza servizio in emergenza					
Specific fuel consumption					
Consommation spécifique combustible		g/kWh	50 % 200	g/kWh	50 % 207
Consumo específico de combustible			75 % 197		75 % 198
Consumo specifico combustibile			100 % 194		100 % 198
Diesel 4 Stroke – Injection type					Direct
Diesel 4 temps – Type injection					Directe
Diesel 4 tiempos – Tipo de inyeccion					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 refrigeracion					Agua
Raffreddamento					Acqua
Speed governor					Electronic
Régulateur de tours					Electronique
Regulador					Electronico
Regolatore di giri					Elettronico
Cylinders, numbers and arrangement					
Nombre et disposition des cylindres					5 L
Cilindros, numero y disposicion					
Numero e disposizione dei cilindri					
Total displacement					
Cylindrée totale				cm <sup>3</sup>	9300
Cilindrata total					
Cilindrata totale					
Bore x stroke					
Alésage x course				mm	130 X 140
Diametro x carrera					
Alesaggio x corsa					
Compression ratio					
Rapport de compression					16 :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		LERROY SOMER				
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		1500 rpm		1800 rpm		
Model Modèle Modelo Modello		LSA 46.3 M8		LSA 46.3 M7		
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo		40 °C	KVA kWe	<b>300</b> 240	KVA kWe	<b>315</b> 252
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza		40 °C	KVA kWe	<b>318</b> 254	KVA kWe	<b>334</b> 267
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza		27 °C	KVA kWe	<b>330</b> 264	KVA kWe	<b>347</b> 278
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	90,3 % 93,3 % 93,8 % 93,5 %	
Standard winding connections Liaison des bobinages Tipo de conexión Collegamento avvolgimenti		Y		YY		
Exciter Excitatrice Excitador Excitatrice		<b>brushless</b> rotating exciter design with solid state pivotante <b>sans brosses</b> avec pont de diodes pivotants puente de diodos <b>sin escobillas</b> rotantes rotante <b>senza spazzole</b> 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				
Maximum overspeed Survitesse Régimen máximo Velocità di fuga		2250 min				
AVR model with <b>300%</b> shorrcircuit <b>current</b> Modèle AVR avec un <b>courant</b> de court-circuit du <b>300%</b> Modelo AVR con una <b>corriente</b> de corto circuito del <b>300%</b> Modello AVR con <b>corrente</b> di corto circuito del <b>300%</b>				<b>(3 In) : 10s</b>	<b>D 350 AREP</b>	
Derating for temperature Déclassement pour temperature Declasamiento para temperatura Declassamento per temperatura		0 ÷ 40°C	0			
		> 40 °C	3 % / 5°C			
Derating for altitude Déclassement pour altitude Declasamiento para altitud Declassamento per altitudine		0 ÷ 1000 m	0			
		1000 ÷ 2500 m	3% / 500 m			
		2500 ÷ 3000 m	4% / 500 m			

**LOGISTIC INFORMATION**  
**INFORMATIONS LOGISTIQUES**  
**INFORMAZIONE 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	EXTRA1			L	W	H
SOUND PROOF VERSION VERSION INSONORISEE VERSION INSONORISADA VERSIONE INSONORIZZATA	1000	ON REQUEST	5640	425	200	223	
AdBlue tank	70	ON REQUEST					

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

**MANUAL CONTROL PANEL**  
**COFFRET ELECTRIQUE MANUEL**  
**CUADRO ELECTRICO MANUAL**  
**QUADRO ELETTRICO MANUALE**

## Q 7310 AUS

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

<b>STANDARD EQUIPMENT:</b> 4 poles circuit breaker Electronic control board <b>DSE 7310</b> Control panel box key Emergency Stop button	<b>EQUIPEMENT STANDARD:</b> Disjoncteur de protection 4 pôles Fiche électronique <b>DSE 7310</b> Clé pour serrure du coffret Interrupteur d'arrêt d'urgence	<b>EQUIPAMIENTO STANDARD:</b> Interruptor magnetotermico 4 polos Carta electronica <b>DSE 7310</b> Llave cuadro Botón de parada de emergencia	<b>EQUIPAGGIAMENTO STANDARD:</b> Interruttore magnetotermico 4 poli Scheda elettronica <b>DSE 7310</b> Chiave quadro Pulsante di arresto di emergenza
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**DSE  
7310**

**CONTROL BOARD**  
**CARTE ELECTRONIQUE DE CONTROL**  
**CARTA ELECTRONICA DE CONTROL**  
**SCHEDA ELETTRONICA DI CONTROLLO**

PROTECTIONS	PROTECTIONS	PROTECCIONES	PROTEZIONI
Low oil pressure High engine temperature Low fuel level Fail to start Fail to stop Emergency stop Over/under generator frequency Over/under generator voltage Over/under speed Fuel level Belt breakage Over current Over/under battery voltage	Basse pression huile moteur Haute température moteur Basse niveau combustible Non démarrage Non arrêt Arrêt d'urgence Sur/sous générateur fréquence Sur/sous générateur voltage Sur/sourvitesse Niveau de combustible Rupture courroie Surcourant Sur/sus la tension de batterie	Baja presión aceite Elevada temperatura motor Baja nivel carburante Falta de arranque Falta de parada Parada de emergencia Sobre/bajo generatore frecuencia Sobre/bajo generatore voltaje Sobre/bajo velocidad nivel de combustible Ruptura correa Corriente maxima Sobre/bajo voltaje de la batería	Bassa pressione olio Alta temperatura motore Basso livello di carburante Mancato avviamento Mancato arresto Stop d'emergenza Sovra/sotto frequenza generatore Sovra/sotto voltaggio generatore Sovra/sotto velocità Livello del carburante Rottura cinghia Sovracorrente Sovra/sotto tensione della batteria
DIGITAL METERS	VOYANT NUMERIQUE POUR	VISOR DIGITAL PARA	MISURATORE DIGITALE PER
Generator volts ( 3 phases ) Generator amperes ( 3 phases ) Generator frequency KW-meter kVA-meter Cos φ- meter Rpm meter Gen set hours counter Battery Volts	Voltmètre générateur ( 3 phases ) Ampèremètre générateur (3 phases) Fréquencemètre générateur KW-mètre kVA- mètre Cos φ- mètre Tm mètre Totalisateur d'heures de marche Voltmètre batterie	Voltmetro ( 3 fases ) Amperimetro ( 3 fases ) Frecuencimetro KW- metro kVA- metro Cos φ-metro Revoluciones por minuto metro Medida horas de marcha Voltmetro batería	Voltmetro tensione generatore (3 fasi) Amperometro generatore ( 3 fasi ) Frequenzimetro generatore KW- metro kVA- metro Cos φ-metro Gm metro Contaore di funzionamento gruppo Voltmetro batteria

**AUTOMATIC CONTROL PANEL  
COFFRET ELECTRIQUE AUTOMATIQUE  
CUADRO ELECTRICO AUTOMATICO  
QUADRO ELETRICO AUTOMATICO**

<p>1)</p> <p><b>Q 7320 ATS</b></p> 	<p><b>COMPLETE CONTROL PANEL FREE STANDING TYPE</b> Equipment: control board, circuit breaker, battery charger, transfer switch, box key. <b>COFFRET ELECTRIQUE COMPLET TYPE ARMOIRE SEPRE DU GROUPE</b> Equipement : carte électronique de contrôle, disjoncteur de protection, chargeur de batterie, inverseur de source, clé coffret. <b>CUADRO ELECTRICO COMPLETO EN ARMARIO SEPARADO DEL GRUPO</b> Equipamiento: carta electronica de controllo, interruptor magnetotermico, cargador de bateria, transferencial, llave quadro. <b>QUADRO ELETRICO COMPLETO SEPARATO DAL GRUPPO</b> Equipaggiamento: scheda elettronica di controllo, interruttore magnetotermico, carica batteria, telecommutazione e chiave quadro.</p>
<p>2)</p> <p><b>Q 7320 AMF</b></p> 	<p><b>AMF CONTROL PANEL FITTED ON THE GEN-SET WITHOUT TRANSFER SWITCH</b> Equipment: control board, circuit breaker, battery charger, box key. <b>COFFRET ELECTRIQUE MONTE SUR LE GROUPE SANS INVERSEUR DE SOURCE</b> Equipement : carte électronique de contrôle, disjoncteur de protection, chargeur de batterie, clé coffret. <b>CUADRO ELECTRICO MONTADO SOBRE EL GRUPO SIN TRANSFERENCIAL</b> Equipamiento: carta electronica de controllo, interruptor magnetotermico, cargador de bateria, llave quadro. <b>QUADRO ELETRICO MONTATO SUL GRUPPO ELETTROGENO SENZA TELECOMMUTAZIONE</b> Equipaggiamento: scheda elettronica di controllo, interruttore magnetotermico, carica batteria, chiave quadro.</p>
<p>3)</p> <p><b>Q 7320 STS</b></p> 	<p><b>CONTROL PANEL FITTED ON THE GEN-SET WITH TRANSFER SWITCH SUPPLIED IN A SEPARATED BOX</b> Equipment: control board, circuit breaker, battery charger, box key, separate transfer switch. <b>COFFRET ELECTRIQUE MONTE SUR LE GROUPE + INVERSEUR DE SOURCE FOURNI DANS UN COFFRET SEPRE</b> Equipement : carte électronique de contrôle, disjoncteur de protection, chargeur de batterie, inverseur de source séparé, clé coffret. <b>CUADRO ELECTRICO MONTADO SOBRE EL GRUPO CON TRANSFERENCIAL SEPARADO</b> Equipamiento: carta electronica de controllo, interruptor magnetotermico, cargador de bateria, llave quadro, transferencial separado. <b>QUADRO ELETRICO MONTATO SUL GRUPPO ELETTROGENO CON TELECOMMUTAZIONE SEPARATA</b> Equipaggiamento: scheda elettronica di controllo, interruttore magnetotermico, carica batteria, chiave quadro, telecommutazione in armadio separato.</p>





**CONTROL BOARD  
CARTE ELECTRONIQUE DE CONTROL  
CARTA ELECTRONICA DE CONTROL  
SCHEDA ELETRONICA DI CONTROLLO**

<b>GB</b>	<b>F</b>	<b>E</b>	<b>I</b>
<p>The DSE7320 is an Automatic Mains Failure Control Module designed to automatically start and stop diesel generating sets that include electronic and non electronic engines. The module also provides excellent genset monitoring and protection features.</p>	<p>La DSE7320 est une carte de contrôle projetée pour démarrer et arrêter automatiquement groupes électrogènes diesels avec moteurs électroniques et non électroniques. La carte représente un système excellent de contrôle et de protection du groupe électrogène.</p>	<p>La DSE7320 es una carta de control para arranquar y parar automáticamente grupos electrógenos diesel con motores electrónicos y no electrónicos. La carta constituye un excelente sistema de control y protección del grupo electrógeno.</p>	<p>La DSE7320 è una scheda di controllo progettata per avviare e arrestare automaticamente gruppi elettrogeni diesel con motori elettronici e non elettronici. La scheda costituisce un eccellente sistema di controllo e di protezione del gruppo elettrogeno.</p>
<b>FEATURES</b>	<b>EQUIPEMENT</b>	<b>EQUIPMENT</b>	<b>EQUIPAGGIAMENTO</b>
<p>Stop/reste – Auto – Manual – Start LCD display scroll Event log view Acoustic alarm</p>	<p>Fiche électronique de contrôle DSE7320 Disjoncteur de protection Chargeur de batterie Bouton poussoir arrête d’urgence</p>	<p>Ficha electrónica de control DSE7320 Interruptor magnetotermico Cargador de batería Boton de parada de emergencia</p>	<p>Scheda elettronica di controllo DSE7320 Interruttore magnetotermico Carica batteria Pulsante stop emergenza</p>
<b>DIGITAL MEASURING</b>	<b>MESURES NUMERIQUES</b>	<b>MEDIDAS DIGITALES</b>	<b>MISURAZIONI DIGITALI</b>
<p>Generator volts (3 phases) Generator amperes (3 phases) Generator frequency KW-meter KVA-meter Cos φ- meter Rpm meter Water temperature (optional) Oil pressure (optional) Gen set hours counter Mains volts Battery volts Mains frequency Charging voltage Start-counter Fuel level %</p>	<p>Voltmètre générateur (3 phases) Ampèremètre générateur (3 phases) Fréquencemètre générateur KW-mètre kVA- mètre Cos φ- mètre Tm mètre Température eau (facultatif) Pression huile (facultatif) Totalisateur d’heures de marche Voltmètre secteur Voltmètre batterie Fréquence réseau Tension de charge Compteur démarrages Niveau combustible %</p>	<p>Voltmetro (3 fases) Amperimetro (3 fases) Frecuencimetro KW- metro kVA- metro Cos φ- metro Revoluciones por minuto metro Termometro agua (opcional) Presión aceite (opcional) Medida horas de marcha Voltmetro tensión de red Voltmetro batería Frecuencia red Tensión de carga Numero de arranques Nivel carburante %</p>	<p>Voltmetro tensione generatore (3 fasi) Amperometro generatore (3 fasi ) Frequenzimetro generatore KW- metro kVA- metro Cos φ- metro Gm metro Temperatura acqua (facoltativo) Pressione olio (facoltativo) Contaore di funzionamento gruppo Voltmetro tensione rete Voltmetro batteria Frequenza rete Tensione di carica Contavviamenti Livello carburante %</p>
<b>INDICATORS</b>	<b>INDICATEURS</b>	<b>INDICADORES</b>	<b>INDICATORI</b>
<p>Mains live Generator live Mains contactor closed Generator contactor closed Engine running</p>	<p>Présence secteur Présence tension générateur Inverseur secteur fermé Inverseur générateur fermé Moteur en marche</p>	<p>Presencia tensión de red Presencia tensión grupo Transferencial red cerrado Transferencial grupo cerrado Motor en marcha</p>	<p>Tensione di rete Presenza tensione generatore Erogazione da rete Erogazione da gruppo Motore avviato</p>
<b>PROTECTIONS</b>	<b>PROTECTIONS</b>	<b>PROTECCIONES</b>	<b>PROTEZIONI</b>
<p>Low oil pressure High engine temperature Low fuel level Fail to start Fail to stop Emergency stop Over/under frequency Over/under voltage Over/under speed Fuel level Belt breakage Over current Over/under battery voltage</p>	<p>Bas pression huile moteur Haute température moteur Bas niveau combustible Non démarrage Non arrêt Arrêt d’urgence Sur/sous fréquence Sur/sous voltage Sur/sous vitesse Niveau de combustible Rupture courroie Rupture courroie Surcourant Sur/sus la tension de batterie</p>	<p>Baja presión aceite Elevada temperatura motor Baja nivel carburante Falta de arranque Falta de parada Parada de emergencia Sobre/bajo frecuencia Sobre/bajo voltaje Sobre/bajo velocidad nivel de combustible Ruptura correa Ruptura correa Corriente maxima Sobre/bajo voltaje de la batería</p>	<p>Bassa pressione olio Alta temperatura motore Basso livello di carburante Mancato avviamento Mancato arresto Stop d’emergenza Sovra/sotto frequenza Sovra/sotto voltaggio Sovra/sotto velocità Livello del carburante Rottura cinghia Sovraccorrente Sovra/sotto tensione della batteria</p>

**SOUNDPROOF CANOPY**  
**CAPOTE D'INSONORISATION**  
**CAPOTA DE INSONORIZACION**  
**CABINA INSONORIZATA**

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 soplo 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 polietilene. 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 à l'extérieur (en option) Tapo gasoleo con llave 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

SCANIA POWER GENERATION ENGINE: EU STAGE V

## 9-LITRE ENGINE



### Engine description

DC09 320A. 265-268 kW (300-300 kVA)

<b>Engine speed</b>	1,500/1,800 rpm
<b>Emission compliance</b>	EU Stage V
<b>Rating</b>	PRP
<b>No of cylinders</b>	5 in-line
<b>Working principle</b>	4-stroke
<b>Displacement</b>	9.3 litres
<b>Weight</b>	950 kg (excluding oil and coolant)
<b>Oil capacity</b>	31-36 litres (standard oil sump)
<b>Electrical system</b>	1-pole 24 V

#### Standard equipment

- Scania Engine Management System, EMS
- Extra high pressure fuel injection system, XPI
- Variable Geometry Turbocharger
- Saver ring in cylinder liner
- Fuel filter and extra pre-filter with water separator
- Thermal recirculation fuel heater
- Oil filter, full flow
- Centrifugal oil cleaner
- Oil cooler, integrated in cylinder block
- Oil filler, in cylinder block
- Deep front oil sump
- Oil dipstick, in cylinder block
- Magnetic drain plug for oil draining
- Starter motor, 1-pole 6.0 kW
- Alternator, 1-pole 100 A
- Flywheel, SAE 14
- Silumin flywheel housing, SAE 1 flange
- Front-mounted engine suspension
- Particulate filter and SCR in 2-unit distributed aftertreatment system
- Open crankcase ventilation

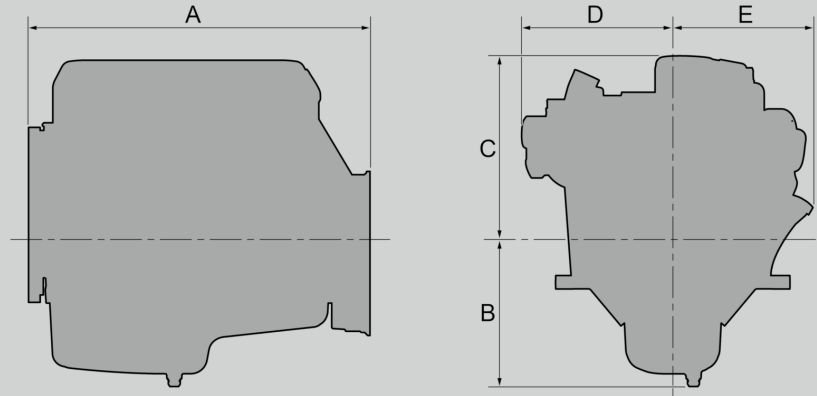
Scania's power generation engines for emission level EU Stage V are based on a robust design for superior operating economy and reliability. With their modular design, the engines offer easy installation for the producer of the equipment as well as easy access to daily checks and service for the operator. The engines can be fitted with many accessories such as air cleaners, PTOs, exhaust fittings and cooling packages, to suit a variety of installations.

Scania's EU Stage V engines are equipped with a Scania developed extra high pressure fuel injection system based on common rail technology, and a turbocharger optimized for operation in combination with the exhaust gas aftertreatment system. Together with Scania's Engine Management System, the result is an engine that fulfils the strictest exhaust emission requirements, with low fuel consumption and a high torque.

## Dimensions

<b>A</b> Overall length	1,214
<b>B</b> Centre of crankshaft to bottom	448
<b>C</b> Centre of crankshaft to top	665
<b>D</b> Centre of crankshaft to right-hand side	510
<b>E</b> Centre of crankshaft to left-hand side	472

All dimensions indicated in mm.



## Technical data

	1,500 rpm (50 Hz)	1,800 rpm (60 Hz)	Unit
Gross power	265	268	kW
	300	300	kVA
Gross torque	1,687	1,422	Nm
Fuel consumption			
full load	194	198	g/kWh
3/4 load	197	198	g/kWh
1/2 load	200	207	g/kWh
Reductant consumption at full load	17	15	g/kWh
Heat rejection			
to coolant	91	94	kW
to exhaust gas	174	188	kW
to charge air	49	47	kW
to surrounding air	25	25	kW
Air consumption	21	23	kg/min
Air temperature			
upstream of charge air cooler	181	162	°C
downstream of charge air cooler	44	41	°C
Pressure in intake manifold	2.1	1.8	bar
Pressure drop in charge air cooler	0.05	0.05	bar
Exhaust flow	22	24	kg/min
Exhaust temperature	453	455	°C

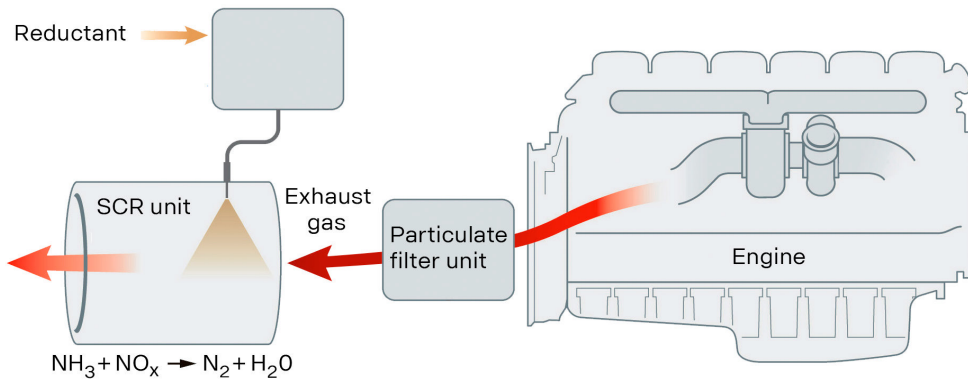
**PRP - Prime power:** For continuous operation at varying load.  
Max mean load factor of 70% of rated power over 24 hours of operation.

This specification may be revised without notice.



## EMISSION COMPLIANCE EU STAGE V

# EXHAUST AFTERTREATMENT SYSTEM



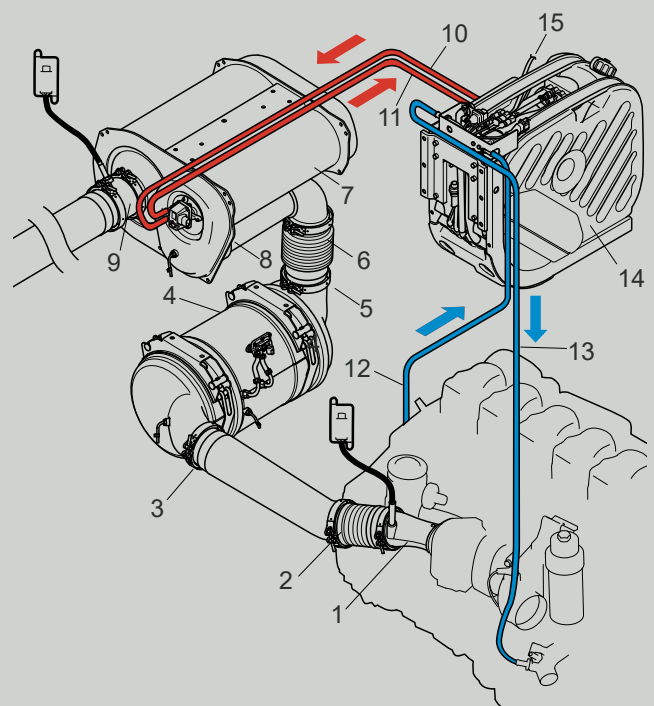
A chemical process is started when reductant, a urea and water mixture, is injected into the exhaust gas stream. During injection, the water evaporates and the urea breaks down to form ammonia. The ammonia then reacts with the nitrogen oxide gases in the catalytic converter and forms harmless products such as nitrogen gas and water.

The emissions of particulate matter are filtered through a ceramic structure, that only allows particles smaller than a defined size to pass. When the filter is filled with soot particles to a specific amount, it is regenerated automatically.

SCR (Selective Catalytic Reduction) technology, in combination with a particulate filter and an oxidation catalytic converter (integrated in the particulate filter unit), is used on Scania's EU Stage V engines to reduce the NOx and particle content in the exhaust gases in the best possible way.

## Mechanical system

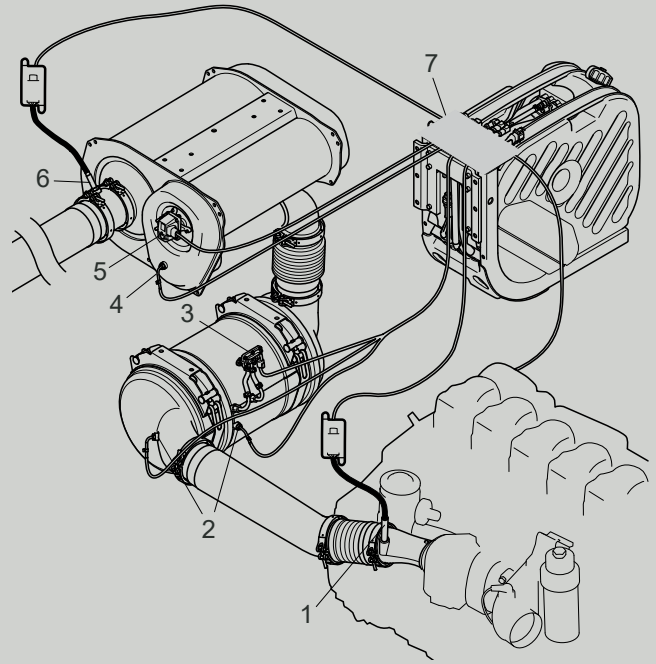
	Standard	Optional
1 Exhaust bend	20° bend	90° bend, exhaust brake
2 Exhaust bellows	-	√
3 Exhaust flange	-	Ø114, 130, 155 mm
4 Particulate filter unit	with 90° outlet	with straight outlet
5 Exhaust flange	-	Ø114, 130, 155 mm
6 Exhaust bellows SCR	-	√
7 SCR unit	without outlet bend	with 90° outlet bend
8 Exhaust flange	-	Ø114, 130, 155 mm
9 NOx flange from SCR unit	Ø127 mm, V-clamp	Ø114, 130, 155 mm
10 Reductant pressure hose	2.5 m	4.0 m, 5.0 m, 6.5 m
11 Reductant return hose	2.5 m	4.0 m, 5.0 m, 6.5 m
12 Coolant hose for heating of tank and pump	-	-
13 Coolant return hose	-	-
14 Reductant tank	38 l	45 l, 60 l, 63 l, 70 l
15 Reductant tank bleed hose	0.8 m	3.3 m



## Electrical system

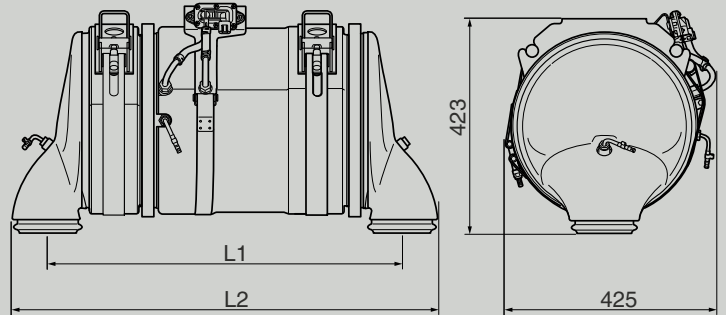
- 1 NOx sensor upstream with control unit
- 2 Exhaust gas temperature sensors on particulate filter unit
- 3 Differential pressure sensor
- 4 Exhaust gas temperature sensor on SCR unit
- 5 Reductant doser
- 6 NOx sensor downstream with control unit
- 7 Electrical interface to exhaust gas aftertreatment system

All components are standard equipment. Standard cable length 3.0 m, optional 4.5 m, 6 m (9 m).



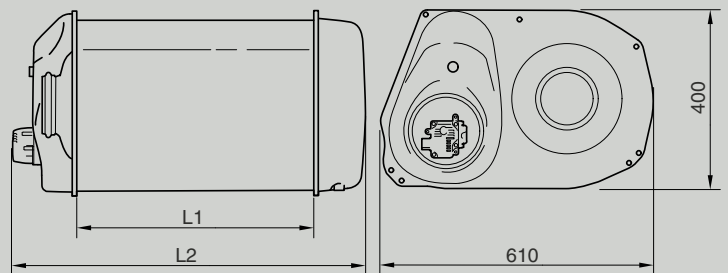
## Particulate filter unit

Engine	L1	L2
DC09	603 mm	747 mm
DC13	679 mm	823 mm



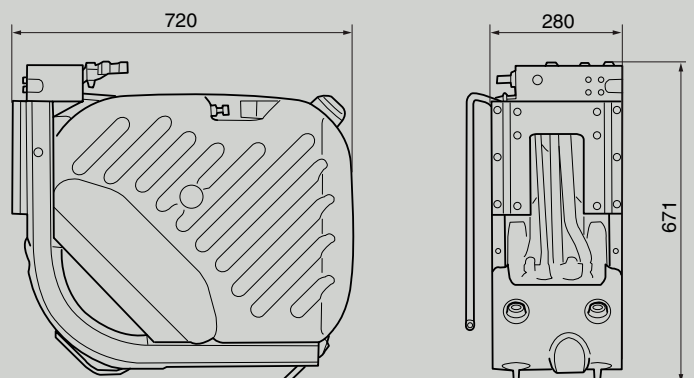
## SCR unit

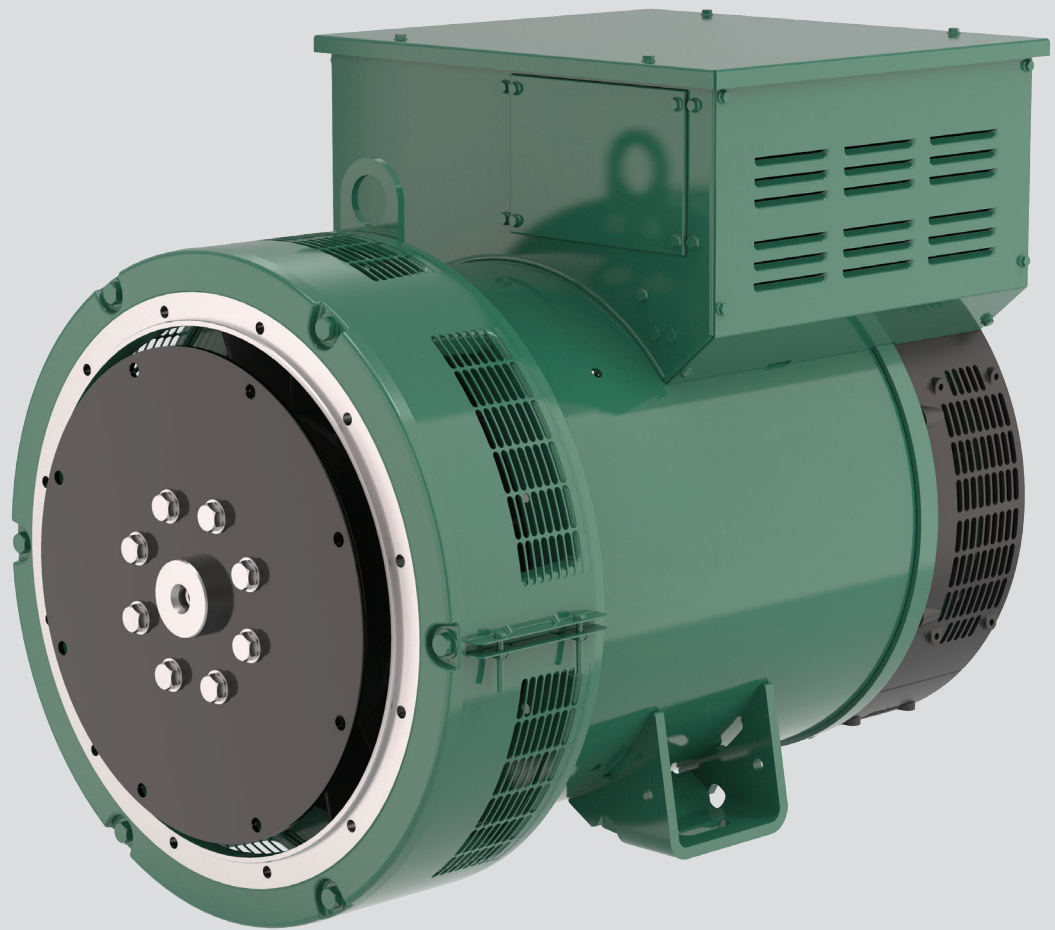
Engine	L1	L2
DC09 and DC13 310/311/312A	518 mm	764 mm
DC13 313/320A	595 mm	841 mm



## Reductant tank, 38 litres

Available sizes	Total volume	Filling volume
38 litres	50 litres	38 litres
45 litres	62 litres	45 litres
60 litres	75 litres	60 litres
63 litres	80 litres	63 litres
70 litres	88 litres	70 litres





**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 <sup>-1</sup>	Waveform: NEMA = TIF (**)	< 50	
Air flow	0.48 m <sup>3</sup> /s (50Hz) / 0.58 m <sup>3</sup> /s (60Hz)	Waveform: I.E.C. = THF (**)	< 2%	

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

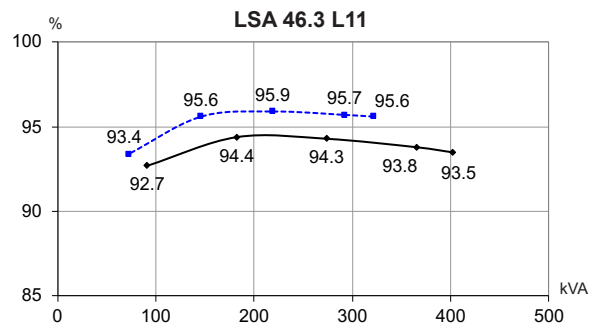
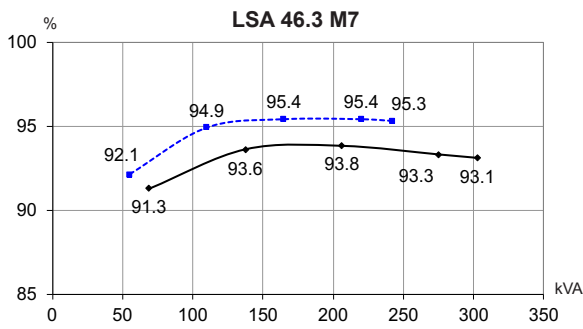
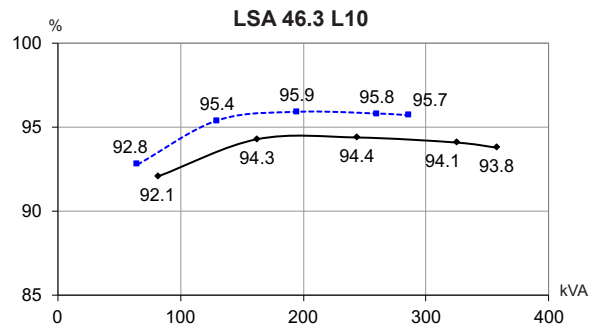
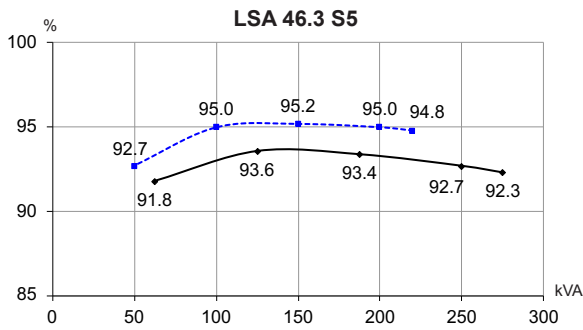
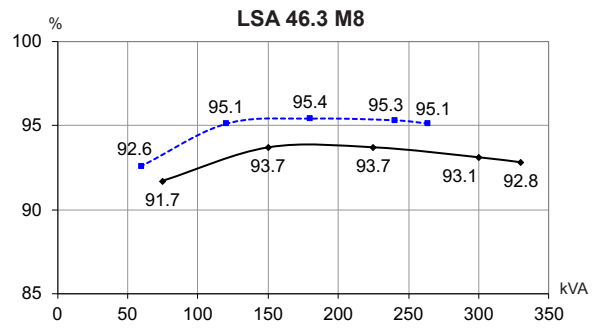
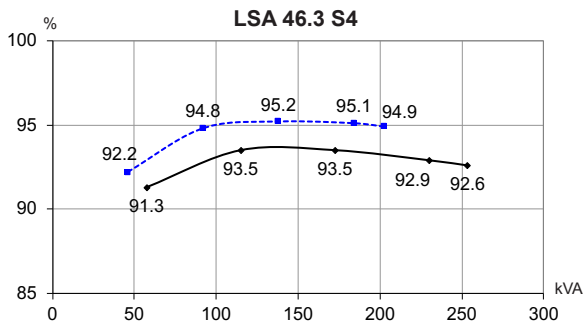
### Ratings 50 Hz - 1500 R.P.M.

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.	
<b>Y</b>	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ
<b>Δ</b>	220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V
<b>YY</b>				220V					220V					220V					220V	
<b>LSA 46.3 S4</b> kVA	230	<b>230</b>	230	219	138	209	<b>209</b>	209	200	126	244	<b>244</b>	244	232	146	253	<b>253</b>	253	240	152
kW	184	184	184	175	110	167	167	167	160	101	195	195	195	186	117	202	202	202	192	122
<b>LSA 46.3 S5</b> kVA	240	<b>250</b>	250	238	150	218	<b>228</b>	228	216	137	254	<b>265</b>	265	252	159	264	<b>275</b>	275	261	165
kW	192	200	200	190	120	174	182	182	173	110	204	212	212	202	127	211	220	220	209	132
<b>LSA 46.3 M7</b> kVA	275	<b>275</b>	275	261	165	250	<b>250</b>	250	238	150	292	<b>292</b>	292	277	175	303	<b>303</b>	303	287	182
kW	220	220	220	209	132	200	200	200	190	120	234	234	234	222	140	242	242	242	230	146
<b>LSA 46.3 M8</b> kVA	290	<b>300</b>	300	285	180	264	<b>273</b>	273	259	164	307	<b>318</b>	318	302	191	319	<b>330</b>	330	313	200
kW	232	240	240	228	144	211	218	218	207	131	246	254	254	242	153	255	264	264	250	160
<b>LSA 46.3 L10</b> kVA	325	<b>325</b>	325	309	195	300	<b>300</b>	300	281	177	345	<b>345</b>	345	327	207	358	<b>358</b>	358	340	215
kW	260	260	260	247	156	240	240	240	225	142	276	276	276	262	166	286	286	286	272	172
<b>LSA 46.3 L11</b> kVA	350	<b>365</b>	365	347	210	319	<b>332</b>	332	316	191	371	<b>387</b>	387	368	225	385	<b>400</b>	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.	
<b>Y</b>	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ
<b>Δ</b>	220V	240V	240V		240V	220V	240V	240V		240V	220V	240V	240V		240V	220V	240V	240V		240V
<b>YY</b>		208V	220V	240V			208V	220V	240V			208V	220V	240V			208V	220V	240V	
<b>LSA 46.3 S4</b> kVA	226	250	262	<b>288</b>	152	206	227	238	<b>262</b>	138	240	264	278	<b>305</b>	161	250	274	288	<b>316</b>	167
kW	181	200	210	230	122	165	182	190	210	110	192	211	222	244	129	200	219	230	253	134
<b>LSA 46.3 S5</b> kVA	245	265	280	<b>313</b>	165	223	241	255	<b>284</b>	150	260	281	297	<b>331</b>	175	270	292	308	<b>344</b>	182
kW	196	212	224	250	132	178	193	204	227	120	208	225	238	265	140	216	234	246	275	146
<b>LSA 46.3 M7</b> kVA	275	300	315	<b>344</b>	182	250	273	287	<b>313</b>	165	292	318	334	<b>364</b>	192	303	330	347	<b>378</b>	200
kW	220	240	252	275	146	200	218	230	250	132	234	254	267	291	154	242	264	278	302	160
<b>LSA 46.3 M8</b> kVA	290	315	340	<b>375</b>	200	264	287	309	<b>337</b>	180	307	334	360	<b>395</b>	210	319	347	375	<b>412</b>	218
kW	232	252	272	300	160	211	230	247	270	144	246	267	288	316	168	255	278	300	330	174
<b>LSA 46.3 L10</b> kVA	315	345	365	<b>406</b>	215	287	314	332	<b>370</b>	195	334	366	387	<b>431</b>	227	347	380	402	<b>447</b>	236
kW	252	276	292	325	172	230	251	266	296	156	267	293	310	345	182	278	304	322	358	189
<b>LSA 46.3 L11</b> kVA	360	393	419	<b>456</b>	231	328	358	381	<b>415</b>	210	382	417	444	<b>483</b>	250	396	432	461	<b>502</b>	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)**



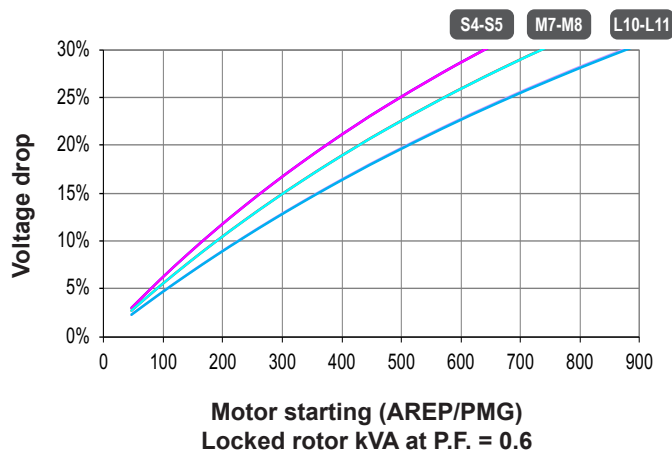
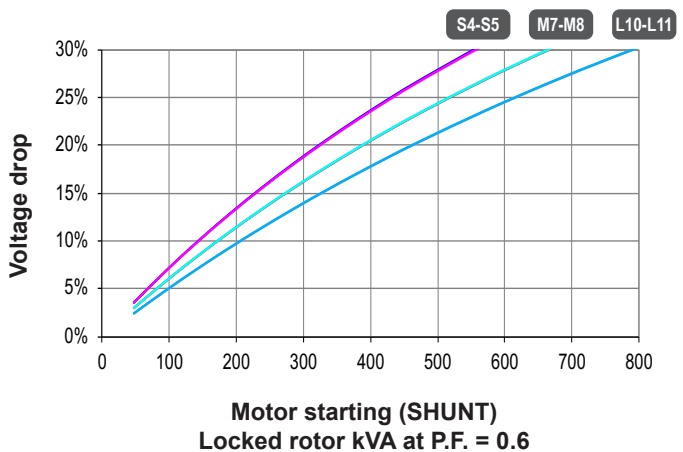
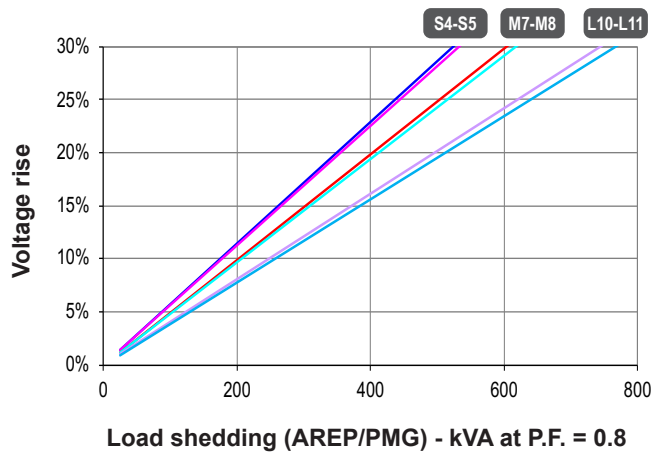
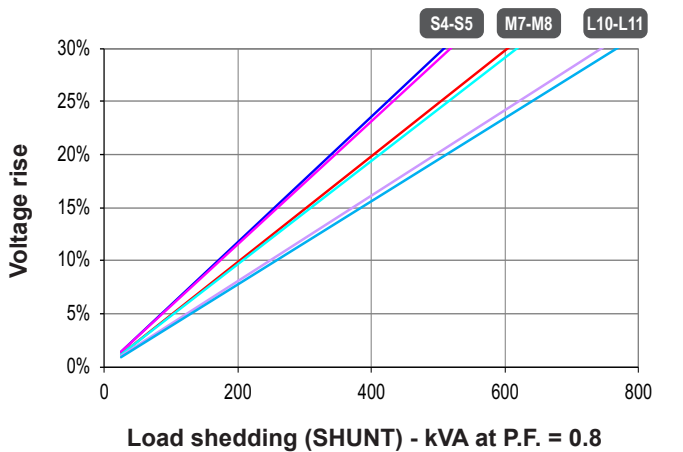
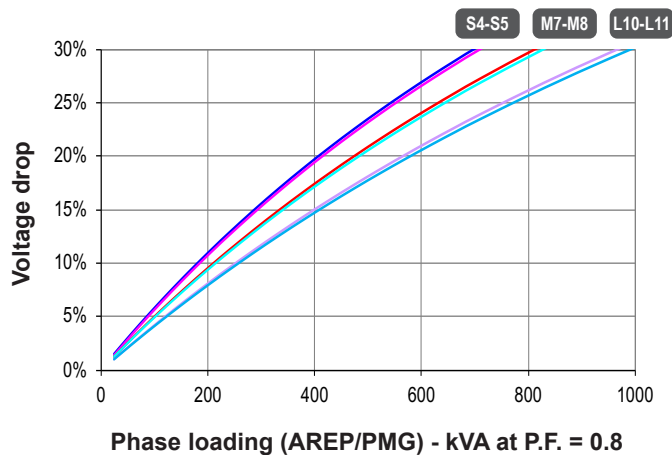
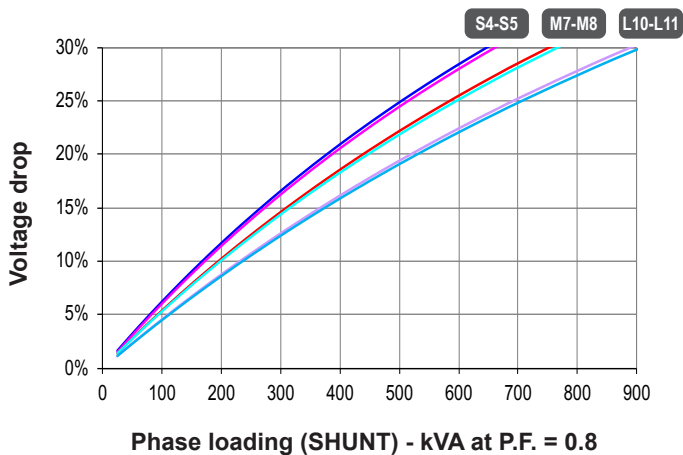
**Reactances (%). Time constants (ms) - Class H / 400 V**

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

**Other class H / 400 V data**

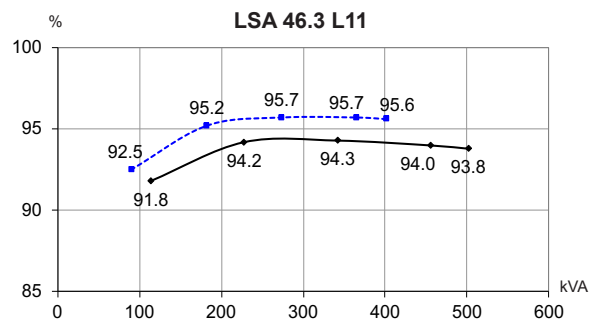
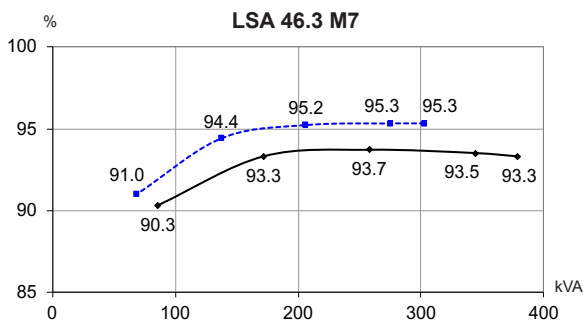
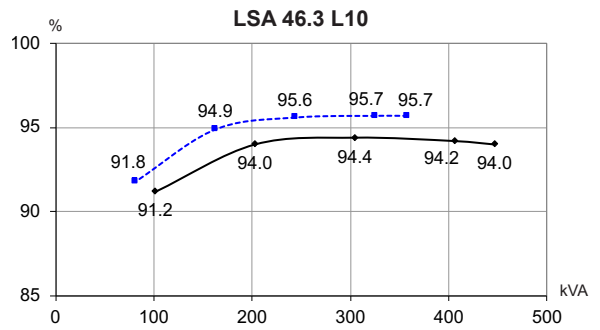
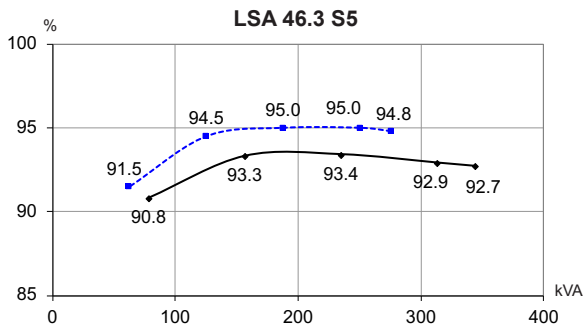
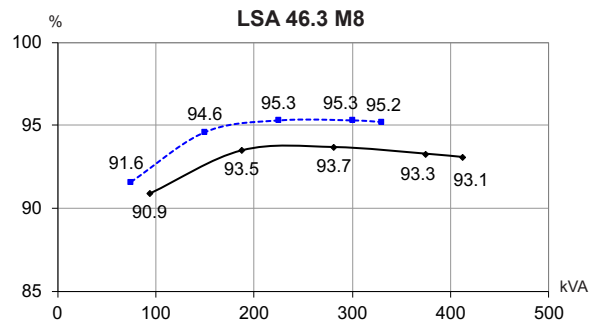
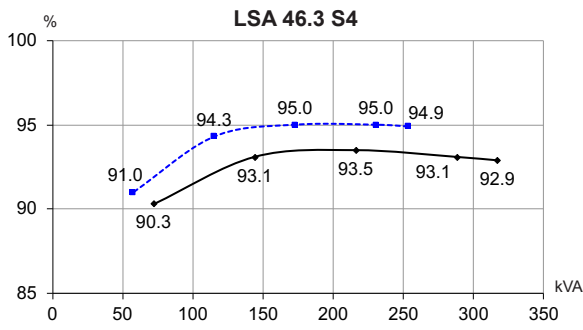
<b>io (A)</b> No-load excitation current (SHUNT/AREP)	0.78	0.78	0.94	0.94	0.81	0.81
<b>ic (A)</b> On-load excitation current (SHUNT/AREP)	3.06	3.32	3.14	3.41	2.94	3.29
<b>uc (V)</b> On-load excitation voltage (SHUNT/AREP)	41.4	44.6	46.2	49.7	42.8	47.5
<b>ms</b> Response time ( $\Delta U = 20\%$ transient)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

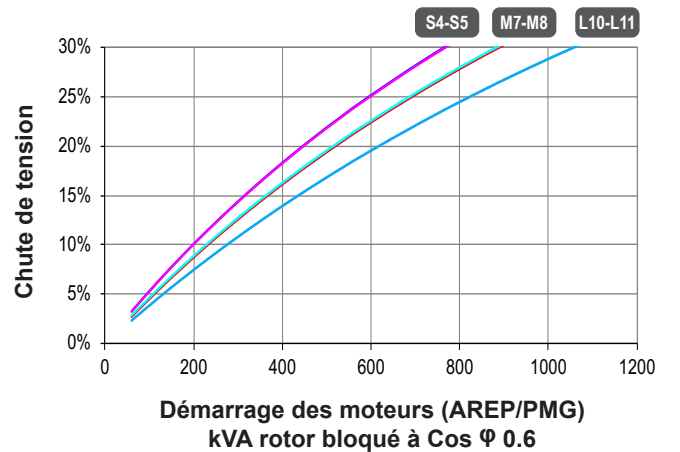
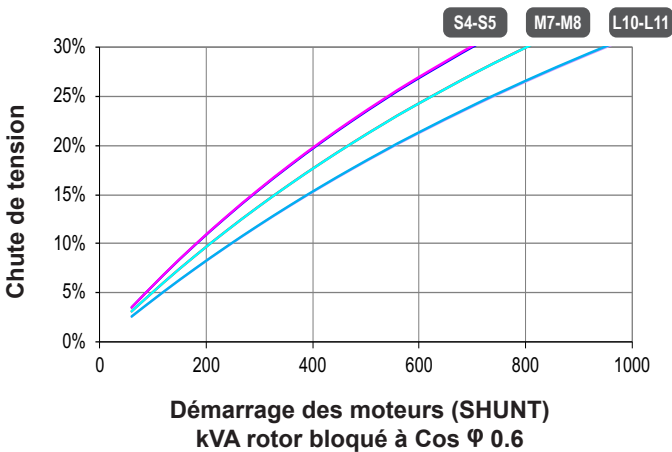
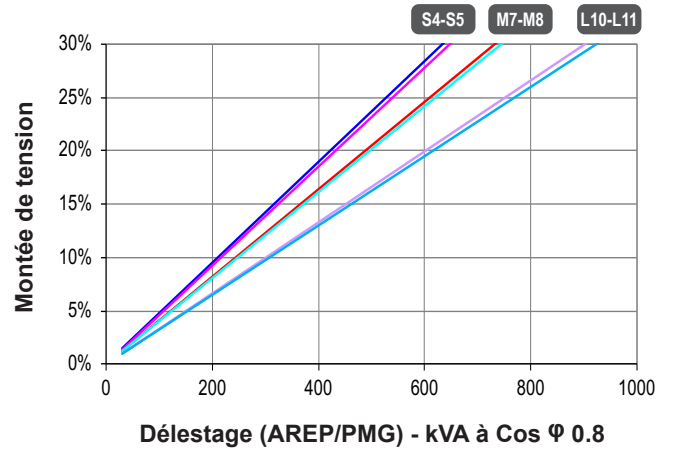
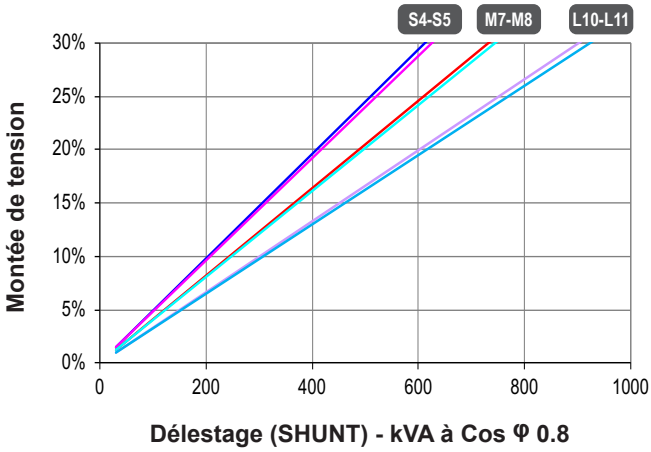
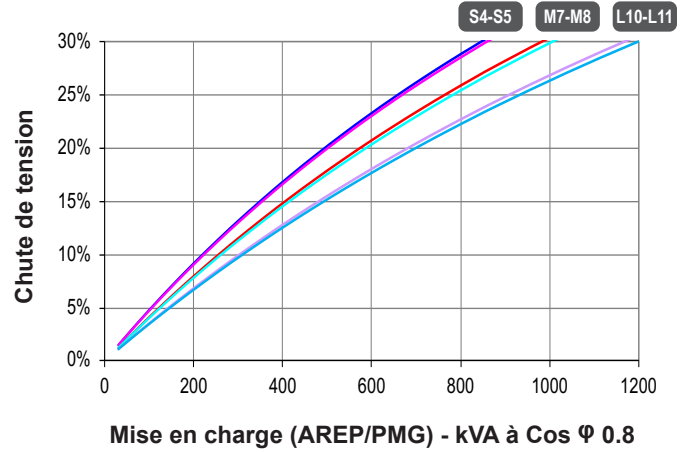
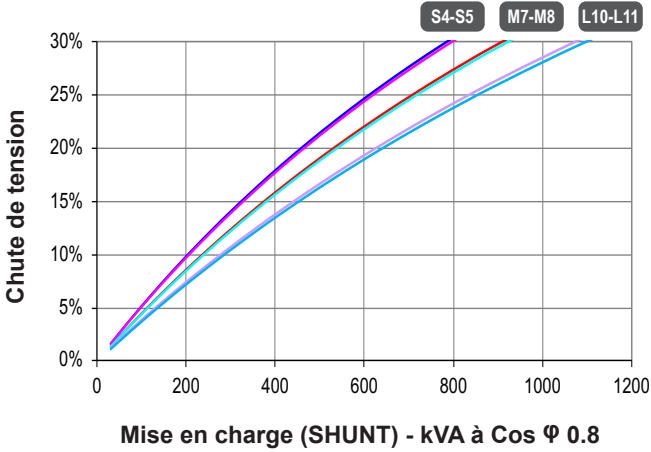
	S4	S5	M7	M8	L10	L11
<b>Kcc</b> Short-circuit ratio	0.38	0.35	0.47	0.43	0.42	0.37
<b>Xd</b> Direct-axis synchro. reactance unsaturated	354	385	329	359	329	370
<b>Xq</b> Quadrature-axis synchro. reactance unsaturated	180	196	168	183	168	188
<b>T'do</b> No-load transient time constant	2452	2452	2543	2543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

Other class H / 480 V data

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



Transient voltage variation 480V - 60 Hz

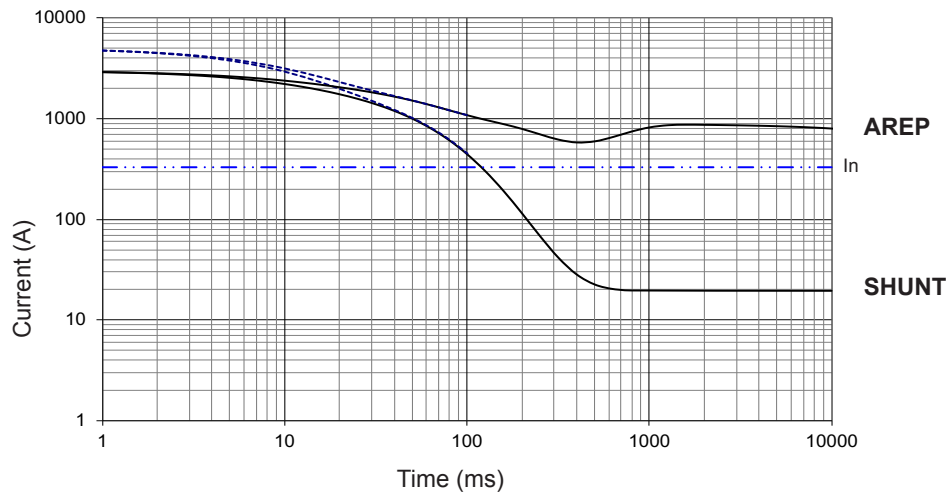


- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by  $K = \text{Sine P.F.} / 0.6$
- 2) For voltages other than 480V (Y), 277V (Δ), 240V (YY) at 60 Hz, then kVA must be multiplied by  $(480/U)^2$  or  $(277/U)^2$  or  $(240/U)^2$ .

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

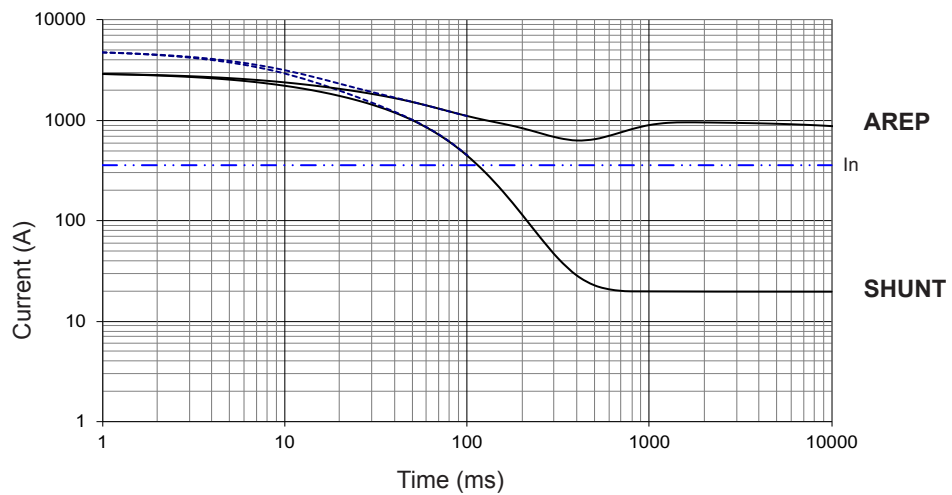
**LSA 46.3 S4**

Symmetrical —  
Asymmetrical - - -



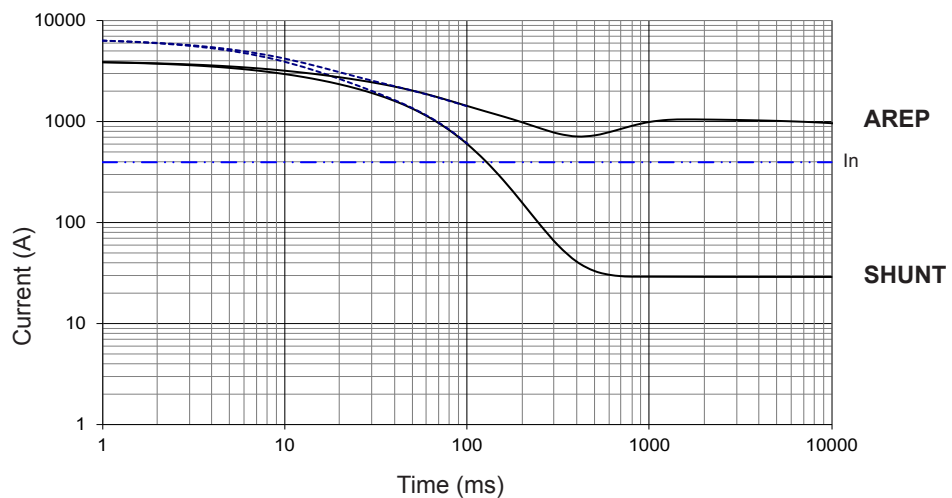
**LSA 46.3 S5**

Symmetrical —  
Asymmetrical - - -



**LSA 46.3 M7**

Symmetrical —  
Asymmetrical - - -



**Influence due to connection**

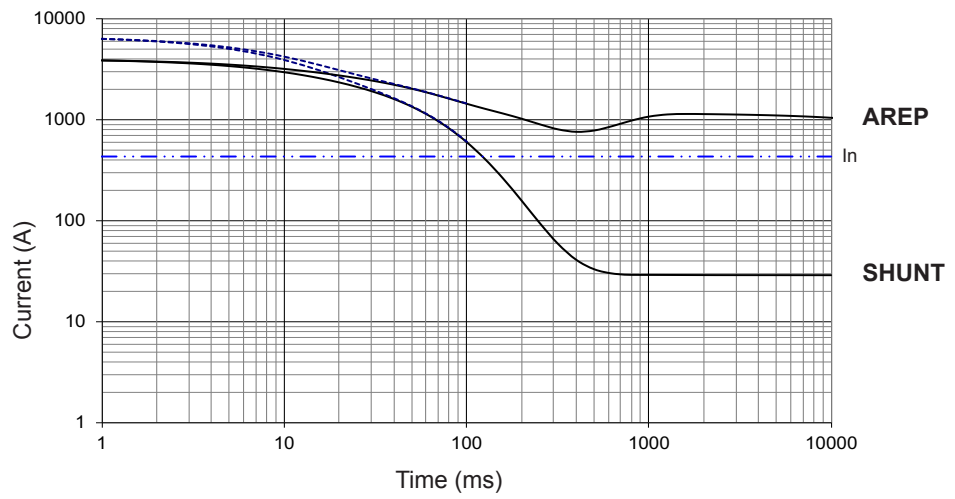
Curves shown are for star (Y) connection.

For other connections, use the following multiplication factors:

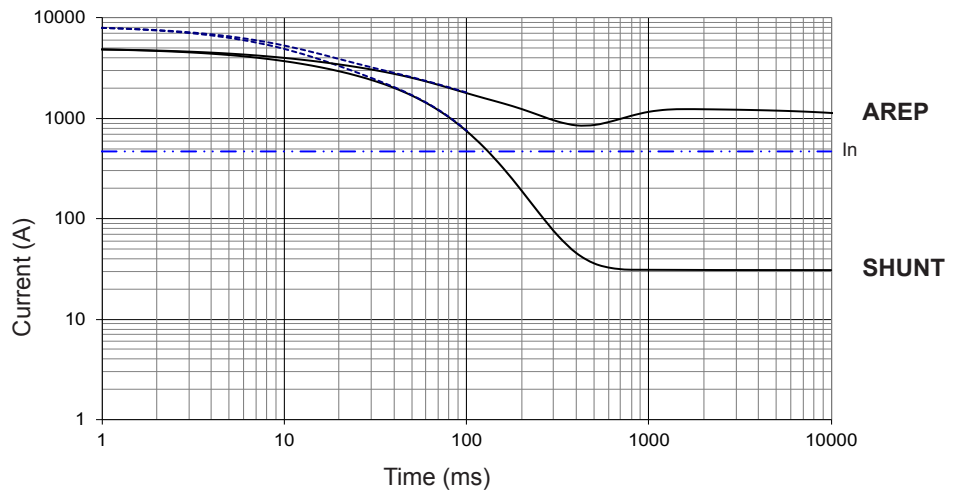
- Series delta : current value x 1.732
- Parallel star : current value x 2

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

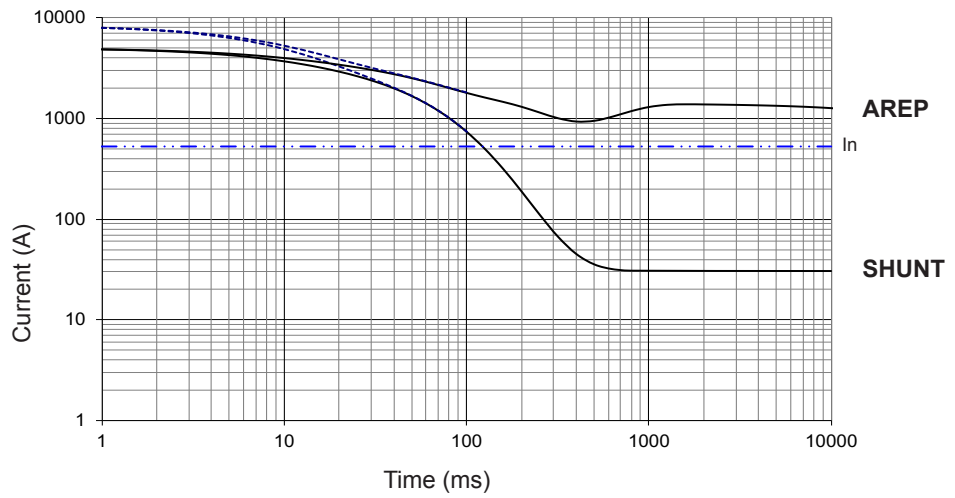
**LSA 46.3 M8**  
 Symmetrical —  
 Asymmetrical - - -



**LSA 46.3 L10**  
 Symmetrical —  
 Asymmetrical - - -



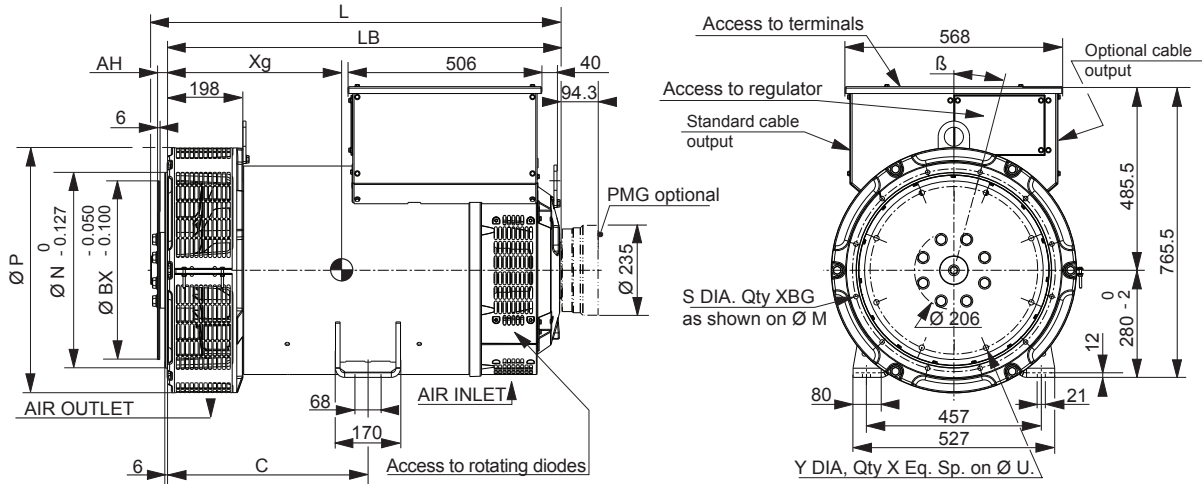
**LSA 46.3 L11**  
 Symmetrical —  
 Asymmetrical - - -



**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



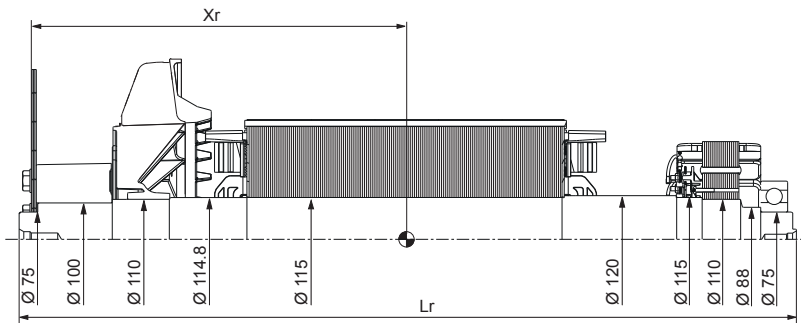
Dimensions (mm) and weight						Coupling			
Type	L without PMG maxi*	LB	Xg	C	Weight (kg)	Flex plate	11 ½	14	18
LSA 46.3 S4	944	892	423	429	674	Flange S.A.E 3	X		
LSA 46.3 S5	944	892	423	429	682	Flange S.A.E 2	X		
LSA 46.3 M7	989	937	445	429	754	Flange S.A.E 1	X	X	
LSA 46.3 M8	989	937	445	429	754	Flange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

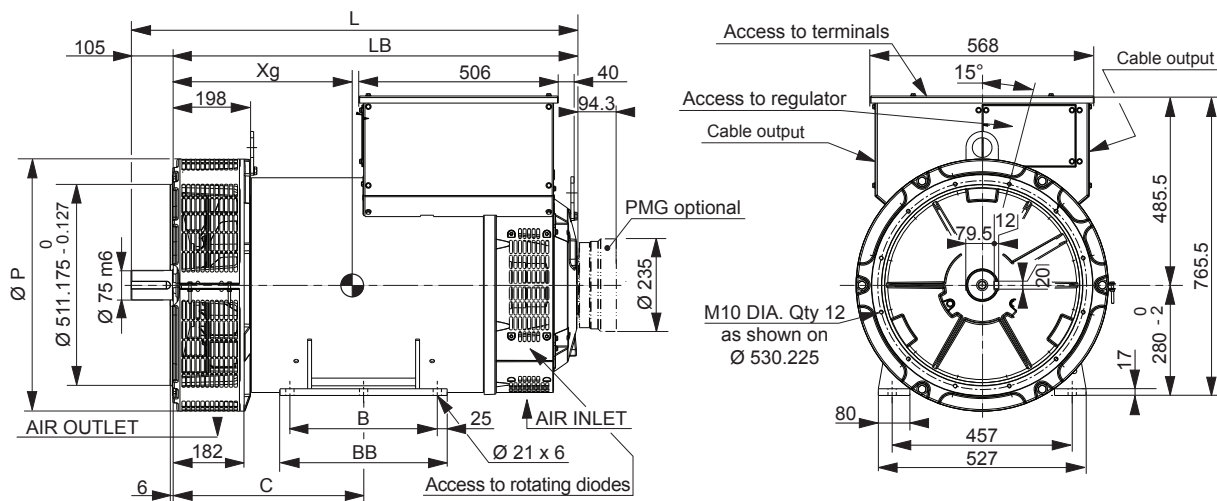
Torsional analysis data



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

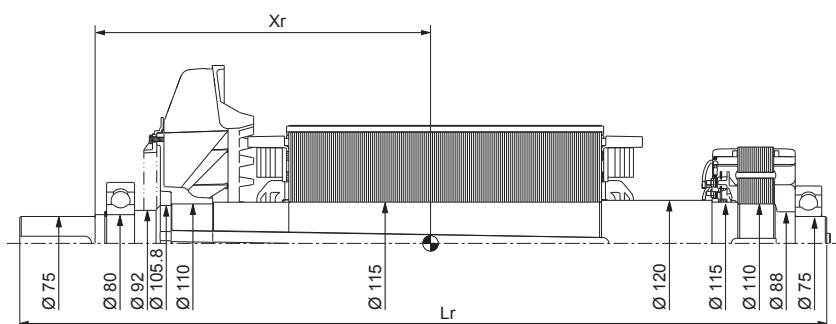
NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request. The torsional analysis of the transmission is imperative. All values are available upon request.

## Two bearing dimensions



Dimensions (mm) and weight								
Type	L without PMG	LB	C	BB	B	P	Xg	Weight (kg)
LSA 46.3 S4	997	892	389	368	318	600	427	674
LSA 46.3 S5	997	892	389	368	318	640	427	682
LSA 46.3 M7	1042	937	389	368	318	640	449	754
LSA 46.3 M8	1042	937	389	368	318	640	449	754
LSA 46.3 L10	1137	1032	485	424	374	640	496	888
LSA 46.3 L11	1137	1032	485	424	374	640	496	888

## Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm <sup>2</sup> ): (4J = MD <sup>2</sup> )				
Type	Xr	Lr	M	J
LSA 46.3 S4	430	990	250	2.76
LSA 46.3 S5	430	990	250	2.76
LSA 46.3 M7	456	1035	280	3.09
LSA 46.3 M8	456	1035	280	3.09
LSA 46.3 L10	503	1130	336	3.79
LSA 46.3 L11	503	1130	336	3.79

**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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