ottomotores

CUMMINS SERIE QST

Energía que Mueve al Mundo

Definiciónes

Potencia Prime
Estos valores son aplicables para el suministro de energía eléctrica continua (a carga variable) en lugar de la red comercial + 10% sobrecarga

Potencia Stand by
Estos valores son aplicables para el suministro de energía eléctrica continua (con carga variable) en caso de falla de la red comercial. No se permite sobre-carga sobre estos valores.

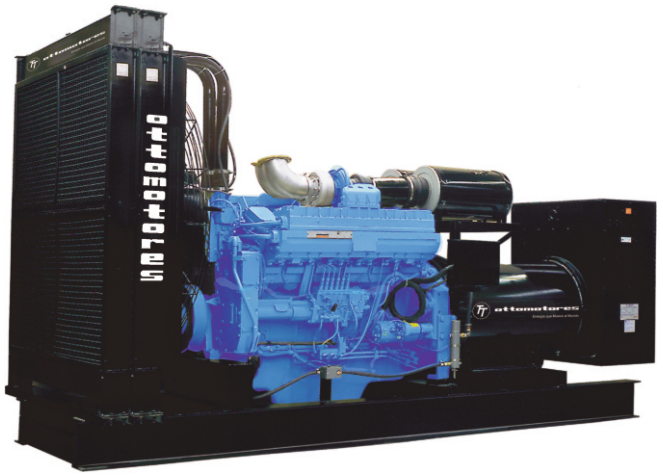


Tabla de Potencias

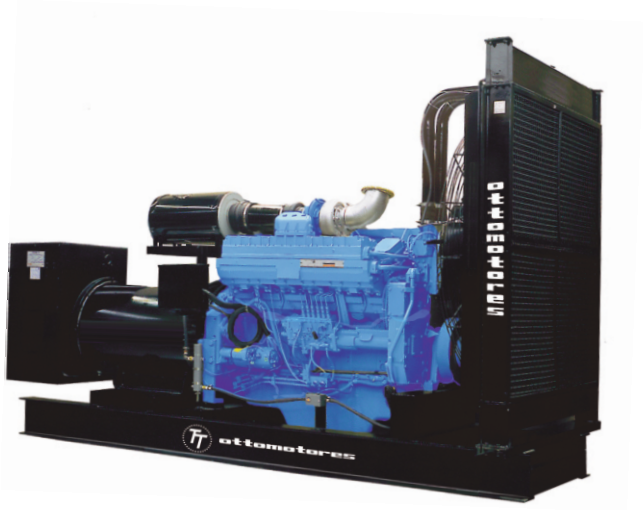
Modelo	Voltaje	kVA Prime	kWe Prime	kVA Stand-by	kWe Stand-by
CNY900	220-440V	1023	818	1125	900
CNY1000	220-440V	1136	909	1250	1000

0.8 Factor de potencia

Información Técnica

Datos Técnicos	CNY900	CNY1000
Frecuencia:	60 Hz	60 Hz
Marca / Modelo	QST30G3	QST30G4
Generador Modelo:	Stamford HCI634H	Stamford HCI634J
Número de Cilindros:	12 en "V"	12 en "V"
Diametro por Carrera :in (mm)	5.51X6.50 (140X165)	5.51X6.50 (140X165)
Relación de Compresión:	14	14.0:1
Aspiración:	turbo y postenfriado	turbo y postenfriado
Velocidad:	1800 RPM	1800 RPM
Potencia: BHP(kWm)	1350 (1007)	1490 (1112)
Presion Efectiva: psi (kPA)	320 (2206)	352 (2427)
Velocidad dePiston: ft/min (m/s)	1949 (9.9)	1949 (9.9)
Consumo a plena carga: lt / hr - 100%	228.00	267.00
Calor Expulsado en el Sistema de Escape: BTU/min (kWm)	39590 (695)	42130 (740)
Calor Expulsado en el Sistema de Enfriamiento: BTU/min (kWm)	27940 (490)	20880 (365)
Temperatura de Escape: ºF (ºC)	897 (481)	975 (525)
Flujo de Enfriamiento en el Radiador m³/seg - FPM	llame a fabrica	llame a fabrica
Flujo de Escape: cfm (liter/s)	6945 (3280)	7775 (3670)

Cummins STAMFORD AC GENERATORS



Nota: Imagen de carácter ilustrativa ya que los equipos en foto pudieran incluir accesorios opcionales

Como leer nuestro codigo: Ejem: **CNY900**

C=Motor Cummins
N=Generador Newage Stamford
Y=60Hz-1800 RPM
900= Potencia del Equipo.

LAPEM

Ottomotores, S.A de C.V.
Calz. San Lorenzo No.1150
Col. Cerro de la estrella, C.P. 09860
Delg. Iztapalapa México, D.F.
Tels:52-55-5624-5600
Fax: 52-55-5426-5521 / 52-55-5426-5581
email: **ventas@ottomotores.com.mx**
sitio web: **www.ottomotores.com.mx**

Dimensiones

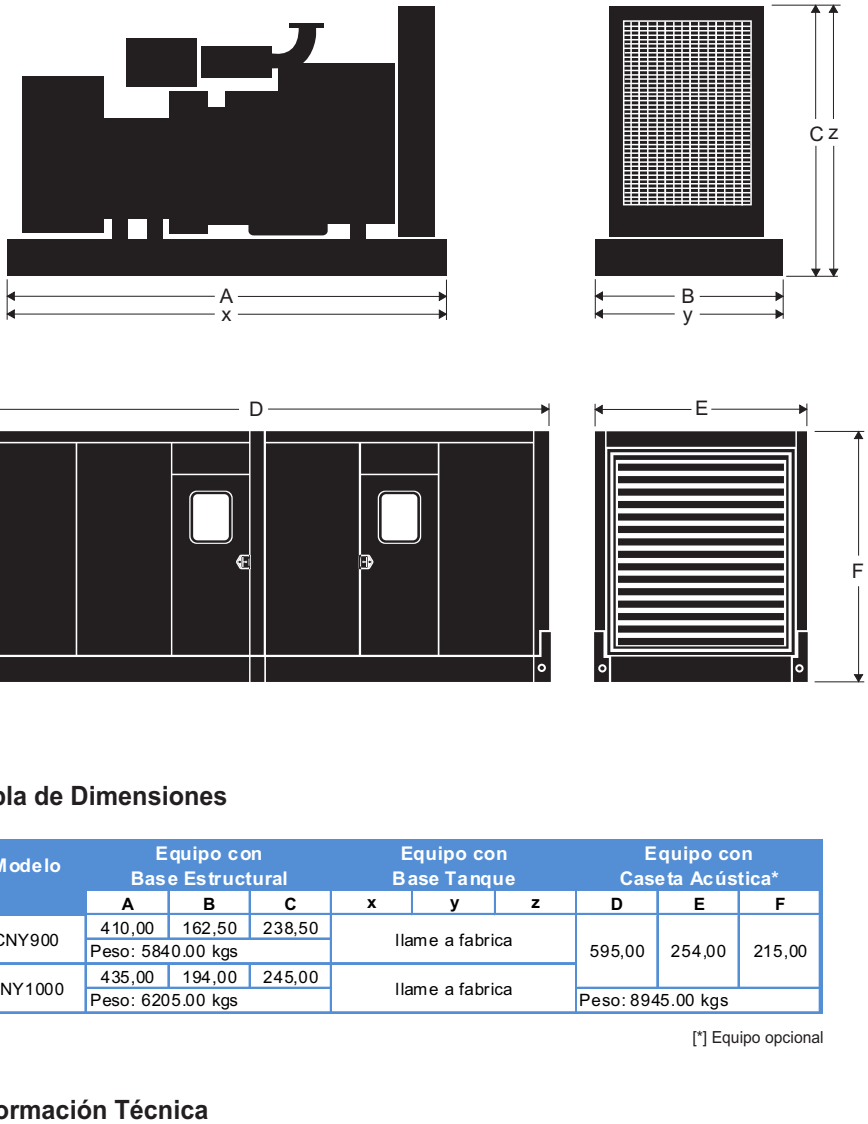


Tabla de Dimensiones

Modelo	Equipo con Base Estructural			Equipo con Base Tanque			Equipo con Caseta Acústica*		
	A	B	C	x	y	z	D	E	F
CNY900	410,00	162,50	238,50	llame a fabrica			595,00	254,00	215,00
	Peso: 5840.00 kgs								
CNY1000	435,00	194,00	245,00	llame a fabrica			Peso: 8945.00 kgs		
	Peso: 6205.00 kgs								

[*] Equipo opcional

Información Técnica

Nota: las condiciones de referencia estándar son de 25 ºC (77 º F) temperatura de entrada de aire. Todos los datos de desempeño de motores son basados en la potencia mencionada arriba.

Datos de consumo de combustible a plena carga con combustible diesel tienen una gravedad específica de 0,85.

Comercializado por:

® Ottomotores se reserva el derecho de hacer cambios sin previo aviso con el fin de mejorar nuestros productos 2010

Módulos de Control

Ottomotores tiene una posición única en la fabricación de grupos electrógenos utilizando en ellos módulos de control que cumplen con todos los niveles de requerimiento del mercado nacional y de exportación.

Las diferentes soluciones de controles que se tienen para nuestra gama de plantas generadoras, permite una operación simple en modo manual y automático, asi mismo permiten desarrollar proyectos de sincronía entre plantas generadoras o con la red de energía eléctrica.

La familia de módulos de control en transición abierta (DALE 3200) permite tener control en forma automática de la unidad de transferencia, asi como elmonitoreo del grupo generador.

Nuestro modulos de control cuentan con puerto de comunicación RS485 para la comunicación remota con el grupo generador.

Los módulos pueden ser monitoreados através de un exelente software para observar parámetros del equipo de manera facíl y rapida.

La familia de módulos de control para la sincronía (6100, 6050 y 6300),incorporan un amplio sistema de monitoreos ademas de conexion a Internet (LAN) o mensaje SMS via celular, o usando los puertos de comunicación RS485 a través de ModBus

ottomotores

Energía que Mueve al Mundo

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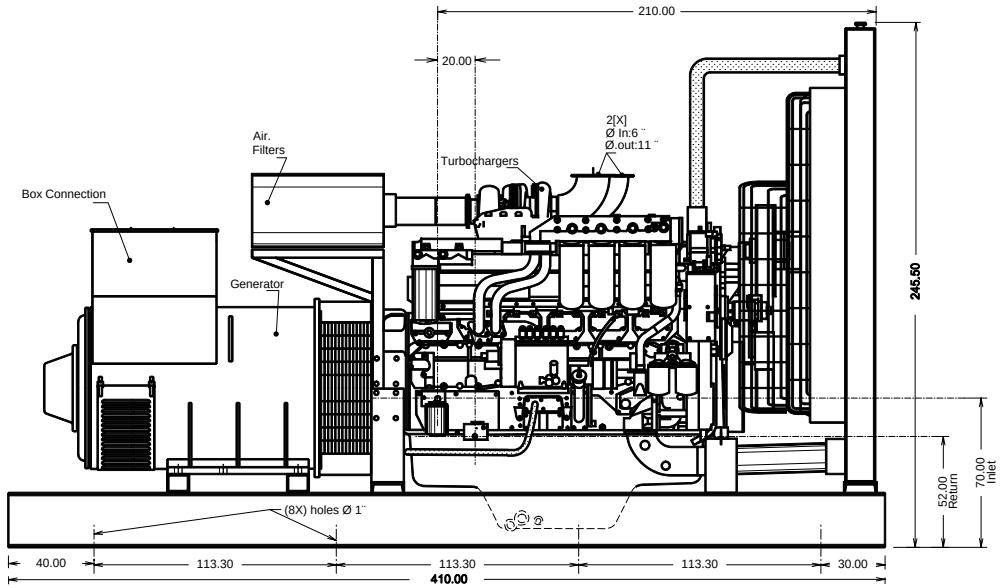
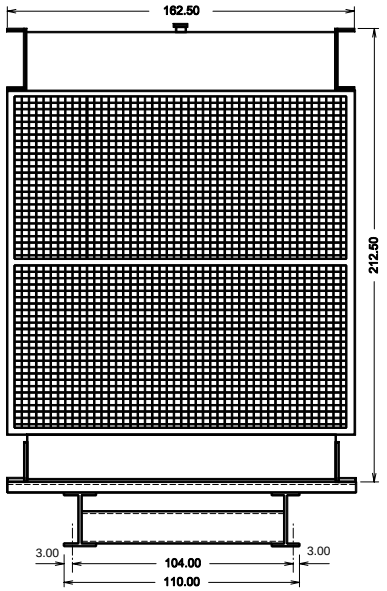
Web site. **www.ottomotores.com.mx**

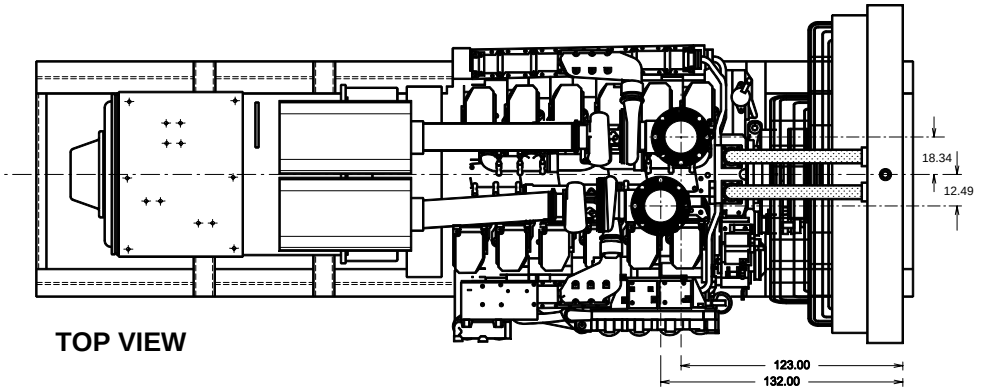
MODELS
CNE740
CNE805
CNY750
CNE850
CNY800
CNE1040
CNY900



SIDE VIEW



FRONT VIEW



TOP VIEW

DESCRIPTION	
RADIATOR:	OV-25-4H
ENGINE:	QST30G1/G2/G3
AIR: FILTER	AH1135
BASE FRAME:	BP-QSTG3-STF
# SPRING AVMS:	8 PZS

-THE GENSET DIMENSIONS ARE THE SAME BY FAMILY MODEL, THERE COULD BE ONLY DIFFERENCES ON THE ALTERNATOR LENGHT SEE SPECIFIC GENERAL ARRAGEMENT DRAWING OF CERTEIN MODEL

-TOTAL WEIGHT COULD VARY CHECK RATING CHART FOR EACH MODEL

Customer: S/O:

Rev.	Description	Date	Certificated

Reviews

Title: ***CUMMINS ENGINE QST30G1/G2/G3 - STAMFORD ALTERNATOR***

Draw: R.G.C.	Revised: F.H.M.	Certificated: F.H.M.	Code: **CNE/Y-13**
Date: JAN 05th 2005	Date: JAN 05th 2005	Date: JAN 05th 2005	Dept.: Engineering

Marks: cms | Scale: s/e | Draw: | Of:

Ottomotores keeps the right to change the information with out prior notice

FO 023-0

CUMMINS ENGINE COMPANY, INC Columbus, Indiana 47201 ENGINE PERFORMANCE CURVE	Basic Engine Model: **QST30-G3**	Curve Number: **FR-5188**	*G-DRIVE* **Q30** **1**
	Engine Critical Parts List: **CPL: 2840**	Date: **18Jan01**	

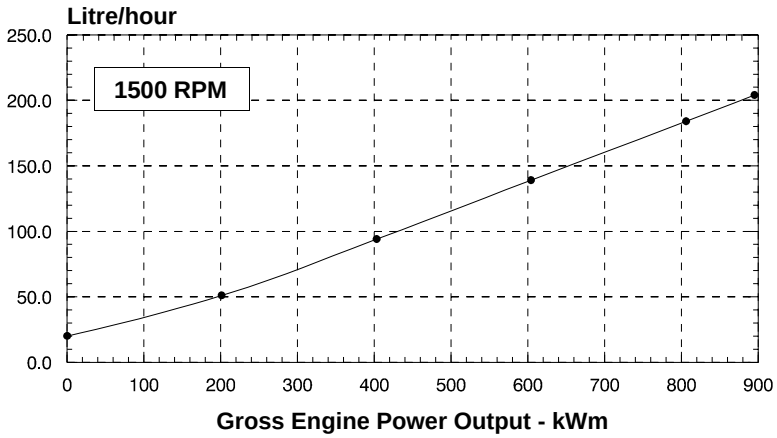
Displacement : **30.48** liter (**1860** in^3)	Bore : **140** mm (**5.51** in.) Stroke : **165** mm (**6.50** in.)
No. of Cylinders : **12**	Aspiration : **Turbocharged and Aftercooled**

•• PRELIMINARY ••

Engine Speed	Standby Power		Prime Power		Continuous Power	
RPM	kWm	BHP	kWm	BHP	kWm	BHP
1500	895	1200	806	1080	634	850
1800	1007	1350	910	1220	731	980

Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/ kWm·h	lb/ BHP·h	liter/ hour	U.S. Gal/ hour
STANDBY POWER						
100	895	1200	0.194	0.319	204	53.9
PRIME POWER						
100	806	1080	0.194	0.319	184	48.5
75	604	810	0.195	0.321	139	36.6
50	403	540	0.198	0.325	94	24.7
25	201	270	0.215	0.353	51	13.4
CONTINUOUS POWER						
100	634	850	0.195	0.321	146	38.4



CONVERSIONS: (liters = U.S. Gal x 3.785) (kWm = BHP x 0.746) (U.S. Gal = liters x 0.2642) (BHP = kWm x 1.34)

These guidelines have been formulated to ensure proper application of generator drive engines in A.C. generator set installations. Generator drive engines are not designed for and shall not be used in variable speed D.C. generator set applications.

STANDBY POWER RATING
Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Standby Power rating. This rating should be applied where reliable utility power is available. A Standby rated engine should be sized for a maximum of an 80% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating. Standby ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

PRIME POWER RATING
Applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories:

UNLIMITED TIME RUNNING PRIME POWER

Prime Power is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours. The total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

LIMITED TIME RUNNING PRIME POWER

Limited Time Prime Power is available for a limited number of hours in a non-variable load application. It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation exceeding 750 hours per year at the Limited Time Prime Power rating should use the Continuous Power rating.

CONTINUOUS POWER RATING
Applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 in Hg) barometric pressure [110 m (361 ft) altitude], 25 °C (77 °F) air inlet temperature, and relative humidity of 30% with No. 2 diesel or a fuel corresponding to ASTM D2.

See reverse side for application rating guidelines.

The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/liter (7.1 lbs/U.S. gal).

Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components.

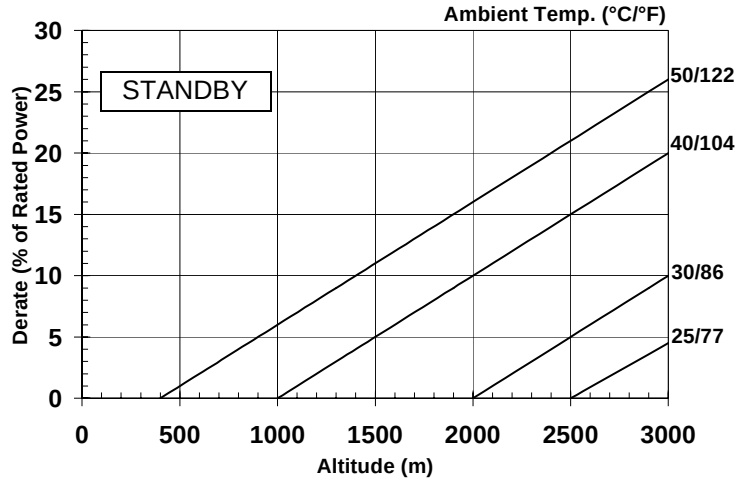
TECHNICAL DATA DEPT. **NON CERTIFIED**

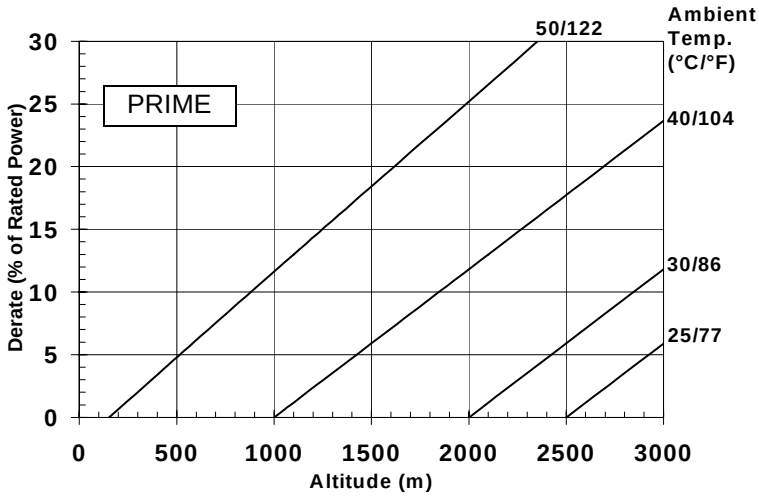
G-DRIVE
Q30
2

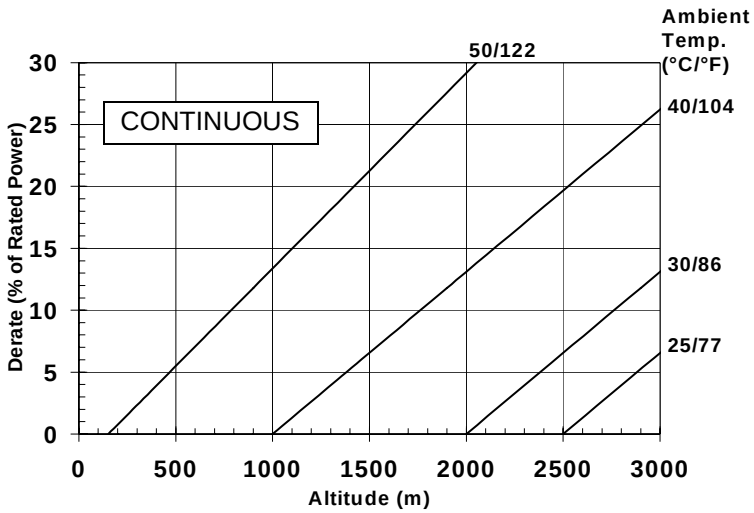
QST30-G3 Derate Curves @ 1500 RPM

CURVE NO: FR-5188
DATE: 18Jan01

•• PRELIMINARY ••







Reference Standards:

BS-5514 and DIN-6271 standards are based on ISO-3046.

Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 10% per 500 m (1640 ft), and 15% per 10^{o} C (18^{o} F).

Note: Derates shown are based on 15 in H_20 air intake restriction and 2 in Hg exhaust back pressure.

CUMMINS ENGINE COMPANY, INC Columbus, Indiana 47201 **ENGINE PERFORMANCE CURVE**	Basic Engine Model: **QST30-G3**	Curve Number: **FR-5188**	*G-DRIVE* **Q30** **3**
	Engine Critical Parts List: **CPL: 2840**	Date: **18Jan01**	

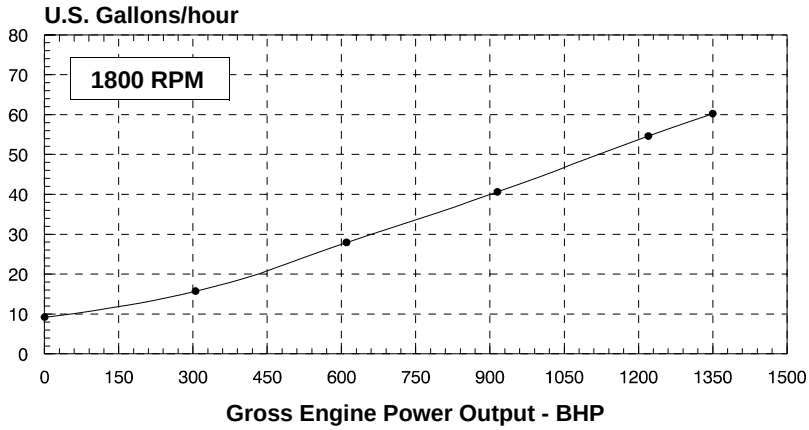
Displacement : **30.48** liter (**1860** in^3)	Bore : **140** mm (**5.51** in.) Stroke : **165** mm (**6.50** in.)
No. of Cylinders : **12**	Aspiration : **Turbocharged and Aftercooled**

•• PRELIMINARY ••

Engine Speed	Standby Power		Prime Power		Continuous Power	
RPM	kWm	BHP	kWm	BHP	kWm	BHP
1500	895	1200	806	1080	634	850
1800	1007	1350	910	1220	731	980

Engine Performance Data @ 1800 RPM

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/ kWm·h	lb/ BHP·h	liter/ hour	U.S. Gal/ hour
STANDBY POWER						
100	1007	1350	0.194	0.319	228	60.2
PRIME POWER						
100	910	1220	0.193	0.318	207	54.6
75	683	915	0.192	0.315	154	40.6
50	455	610	0.198	0.325	106	27.9
25	228	305	0.222	0.365	59	15.7
CONTINUOUS POWER						
100	731	980	0.192	0.315	165	43.5



CONVERSIONS: (liters = U.S. Gal x 3.785) (kWm = BHP x 0.746) (U.S. Gal = liters x 0.2642) (BHP = kWm x 1.34)

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CONTINUOUS POWER RATING
Applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 in Hg) barometric pressure [110 m (361 ft) altitude], 25 °C (77 °F) air inlet temperature, and relative humidity of 30% with No. 2 diesel or a fuel corresponding to ASTM D2.

See reverse side for application rating guidelines.

The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/liter (7.1 lbs/U.S. gal).

Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components.

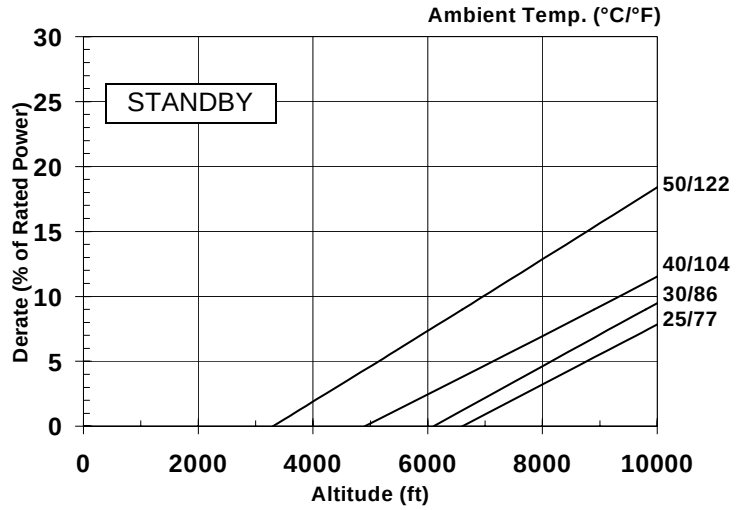
TECHNICAL DATA DEPT. **NON CERTIFIED**

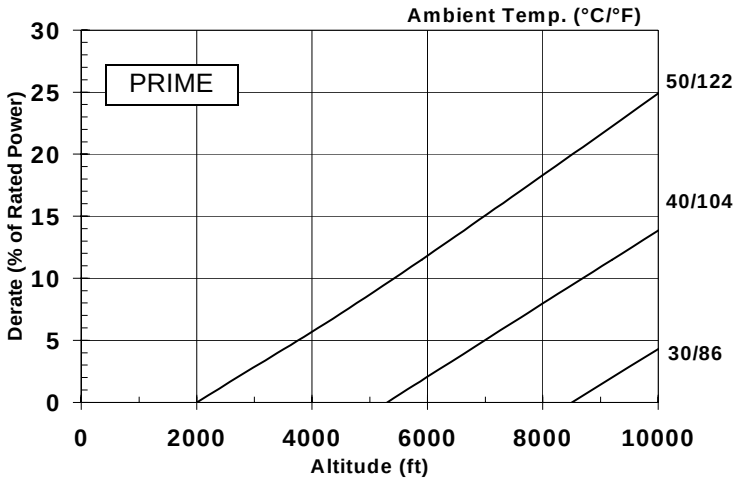
G-DRIVE
Q30
4

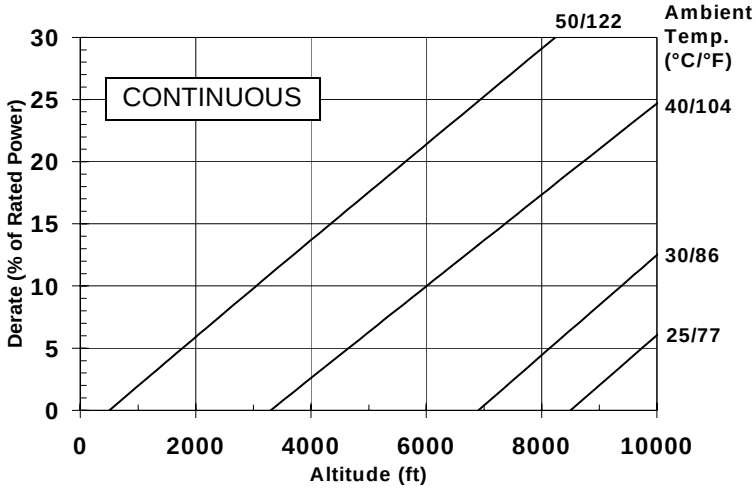
QST30-G3 Derate Curves @ 1800 RPM

CURVE NO: FR-5188
DATE: 18Jan01

•• PRELIMINARY ••







Reference Standards:

BS-5514 and DIN-6271 standards are based on ISO-3046.

Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 8% per 500 m (1640 ft), and 15% per 10^{o} C (18^{o} F).

Note: Derates shown are based on 15 in H_20 air intake restriction and 2 in Hg exhaust back pressure.

•• PRELIMINARY ••

Cummins Engine Company, Inc.

Engine Data Sheet

ENGINE MODEL : QST30-G3 **CONFIGURATION NUMBER :** D573001GX03

DATA SHEET : DS-5188
DATE : 18Jan01
PERFORMANCE CURVE : FR-5188

INSTALLATION DIAGRAM
• Fan to Flywheel : 3170342

CPL NUMBER
• Engine Critical Parts List : 2840

GENERAL ENGINE DATA

Type	4-Cycle; 50° Vee; 12-Cylinder Diesel	
Aspiration	Turbocharged and Aftercooled	
Bore x Stroke — mm x mm (in x in)	140 x165 (5.51 x 6.50)	
Displacement — liter (in^3)	30.48 (1860)	
Compression Ratio	14.0	
Dry Weight		
Fan to Flywheel Engine — kg (lb)	2967	(6540)
Wet Weight		
Fan to Flywheel Engine — kg (lb)	3062	(6750)
Moment of Inertia of Rotating Components		
• with FW 5050 Flywheel — kg • m^2 (lb_m • ft^2)	8.7	(206)
Center of Gravity from Rear Face of Flywheel Housing (FH 5031) — mm (in)	845	(33.3)
Center of Gravity above Crankshaft Centerline — mm (in)	195	(7.7)
Maximum Static Loading at Rear Main Bearing — kg (lb)	950	(2100)

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block — N • m (lb • ft)	3100	(2286)

EXHAUST SYSTEM

Maximum Back Pressure — mm Hg (in Hg)	76	(3.0)

AIR INDUCTION SYSTEM

Maximum Intake Air Restriction		
• with Dirty Filter Element — mm H_2O (in H_2O)	635	(25)
• with Normal Duty Air Cleaner and Clean Filter Element — mm H_2O (in H_2O)	254	(10)
• with Heavy Duty Air Cleaner and Clean Filter Element — mm H_2O (in H_2O)	381	(15)

COOLING SYSTEM

Coolant Capacity — Engine Only — liter (US gal)	85	(22.4)
Maximum Coolant Friction Head External to Engine — 1800 rpm — kPa (psi)	69.0	(10.0)
— 1500 rpm — kPa (psi)	48.0	(7.0)
Maximum Static Head of Coolant Above Engine Crank Centerline — m (ft)	14	(46)
Standard Thermostat (Modulating) Range — °C (°F)	82 - 95	(180 - 203)
Minimum Pressure Cap — kPa (psi)	69.0	(10)
Maximum Top Tank Temperature for Standby / Prime Power — °C (°F)	104 / 100	(220 / 212)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed — kPa (psi)	166	(24.0)
@ Governed Speed — kPa (psi)	310 - 386	(45.0 - 56.0)
Maximum Oil Temperature — °C (°F)	121	(250)
Oil Capacity with OP 5133 Oil Pan : High - Low — liter (US gal)	133 - 114	(35 - 30)
Total System Capacity (Including Bypass Filter) — liter (US gal)	154	(40.7)
Angularity of OP 5133 Oil Pan — Front Down	17°	
— Front Up	35°	
— Side to Side	35°	

FUEL SYSTEM

Type Injection System		Bosch P8500 Direct Injection	
Maximum Restriction at Lift Pump — with Clean Fuel Filter	— mm Hg (in Hg)	102	(4)
— with Dirty Fuel Filter	— mm Hg (in Hg)	203	(8)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)	— mm Hg (in Hg)	508	(20)
Maximum Fuel Flow to Injection Pumps (LB and RB Combined) — 1800 RPM	— liter / hr (US gph)	570	(150)
— 1500 RPM	— liter / hr (US gph)	550	(145)
Maximum Drain Flow (@ Minimum load) — 1800 RPM	— liter / hr (US gph)	550	(145)
— 1500 RPM	— liter / hr (US gph)	530	(140)
Maximum Fuel Inlet Temperature	— °C (°F)	66	(150)

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement)	— volt	24
Battery Charging System, Negative Ground	— ampere	35
Maximum Allowable Resistance of Cranking Circuit	— ohm	0.002
Minimum Recommended Battery Capacity		
• Cold Soak @ 10 °C (50 °C) and Above	— 0°F CCA	1200
• Cold Soak @ 0 °C to 10 °C (32 °F to 50 °F)	— 0°F CCA	1280
• Cold Soak @ -18 °C to 0 °C (0 °F to 32 °F)	— 0°F CCA	1800

COLD START CAPABILITY

Minimum Ambient Temperature for Aided (with Coolant Heater) Cold Start within 10 seconds to Rated Speed	— °C (°F)	10	(50)
Minimum Ambient Temperature for Aided (with Grid Heater) Cold Start	— °C (°F)	-10	(14)
Minimum Ambient Temperature for Unaided Cold Start	— °C (°F)	0	(32)

PERFORMANCE DATA

All data is based on:

- Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
- Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
- ISO 3046, Part 1, Standard Reference Conditions of:

Barometric Pressure	99 kPa (29.3 in Hg)	Air Temperature	25 °C (77 °F)
Altitude	110 m (361 ft)	Relative Humidity	30%

Steady State Stability Band at any Constant Load	— %	+/- 0.25
Estimated Free Field Sound Pressure Level of a Typical Generator Set; Excludes Exhaust Noise; at Rated Load and 7.5 m (24.6 ft); 1800 / 1500 rpm	— dBA	96.1 / 93.2 (est.)
Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45°; (1800 / 1500 rpm)	— dBA	119.7 / 116.9 (est.)

		STANDBY				PRIME POWER			
		60 hz		*50 hz*		*60 hz*		*50 hz*	
Governed Engine Speed	— rpm	1800		1500		1800		1500	
Engine Idle Speed	— rpm	700 - 900		700 - 900		700 - 900		700 - 900	
Gross Engine Power Output	— kW_m (BHP)	1007	(1350)	895	(1200)	910	(1220)	806	(1080)
Brake Mean Effective Pressure	— kPa (psi)	2206	(320)	2358	(342)	1993	(289)	2117	(307)
Piston Speed	— m / s (ft / min)	9.9	(1949)	8.3	(1634)	9.9	(1949)	8.3	(1634)
Friction Horsepower	— kW_m (HP)	82	(110)	58	(78)	82	(110)	58	(78)
Engine Water Flow at Stated Friction Head External to Engine:									
• 5 psi Friction Head	— liter / s (US gpm)	15.5	(246)	12.5	(198)	15.5	(246)	12.5	(198)
• Maximum Friction Head	— liter / s (US gpm)	15.0	(238)	12.0	(190)	15.0	(238)	12.0	(190)
Engine Data with Dry Type Exhaust Manifold									
Intake Air Flow	— liter / s (cfm)	1270	(2690)	935	(1985)	1190	(2520)	865	(1830)
Exhaust Gas Temperature	— °C (°F)	481	(897)	563	(1046)	464	(867)	541	(1005)
Exhaust Gas Flow	— liter / s (cfm)	3280	(6945)	2720	(5755)	3000	(6365)	2430	(5150)
Air to Fuel Ratio	— air : fuel	27.3 : 1		22.7 : 1		28.4 : 1		23.1 : 1	
Radiated Heat to Ambient	— kW_m (BTU / min)	115	(6570)	105	(5840)	105	(5920)	90	(5250)
Heat Rejection to Coolant	— kW_m (BTU / min)	490	(27940)	405	(22970)	455	(25790)	375	(21200)
Heat Rejection to Exhaust	— kW_m (BTU / min)	695	(39590)	650	(37060)	615	(34890)	580	(32830)

N.A. - Data is Not Available
N/A - Not Applicable to this Engine
TBD - To Be Determined

•• PRELIMINARY ••

ENGINE MODEL : **QST30-G3**
DATA SHEET : DS-5188
DATE : 18Jan01
CURVE NO. : FR-5188

CUMMINS ENGINE COMPANY, INC. Columbus, Indiana 47202-3005

FRAME HC634H

WINDING 311/312

RATINGS	REFER TO RATINGS BOOK
OVERLOAD	REFER TO RATINGS BOOK
ALTITUDE	REFER TO RATINGS BOOK
AMBIENT TEMP.	REFER TO RATINGS BOOK

CONTROL SYSTEM SER. 3	SEPARATELY EXCITED BY P.M.G. FRAME DESIGNATION HC634H	
A.V.R.	MX321	
VOLTAGE REGULATION	± 0.5%	WITH 4% ENGINE GOVERNING
SUSTAINED SHORT CIRCUIT	REFER TO SHORT CIRCUIT DECREMENT CURVES OF THIS SECTION	

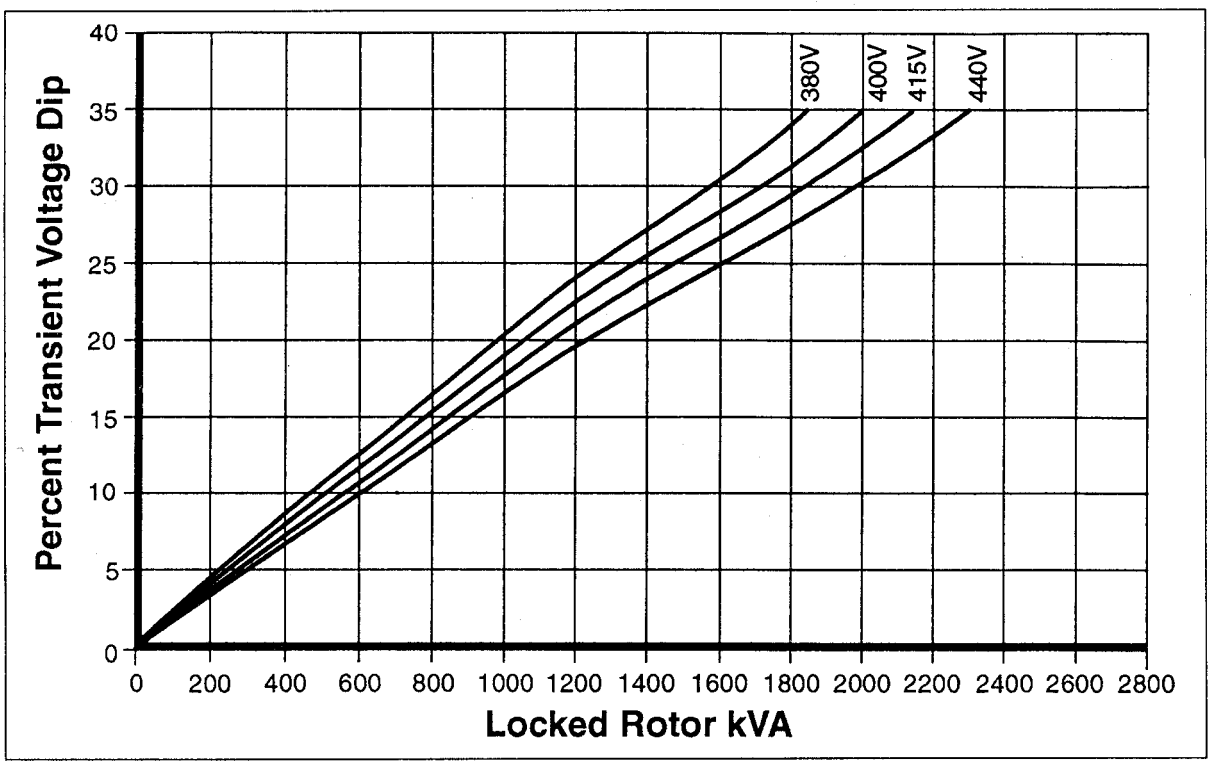
INSULATION SYSTEM	CLASS H	
PROTECTION	IP22 STANDARD - IP23 OPTIONAL (5% DERATE)	
RATED POWER FACTOR	0.8	
STATOR WINDING	DOUBLE LAYER LAP	
WINDING PITCH	TWO THIRDS	
WINDING LEADS	12 (311) 6 (312)	
STATOR WDG. RESISTANCE	0.0027 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED	
ROTOR WDG. RESISTANCE	1.54 Ohms at 22°C	
R.F.I. SUPPRESSION	BS EN 50081/2-1/2 VDE 0875G VDE 0875N For other standards apply to the factory	
WAVEFORM DISTORTION	NO LOAD < 1.5 % NON-DISTORTING BALANCED LINEAR LOAD < 5.0 %	
MAXIMUM OVERSPEED	2250 Rev/Min	
BEARING DRIVE END	BALL. 6224 (ISO)	
BEARING NON-DRIVE END	BALL. 6317 (ISO)	
EFFICIENCY	REFER TO EFFICIENCY CURVES OF THIS SECTION	
	1 BEARING	2 BEARING
WEIGHT COMP. GENERATOR	2113 kg	2120 kg
WEIGHT WOUND STATOR	1010 kg	1010 kg
WEIGHT WOUND ROTOR	862 kg	796.3 kg
WR^2 INERTIA	16.72 kgm^2	15.95 kgm^2

	50 Hz				60 Hz			
TELEPHONE INTERFERENCE	THF< 2%				TIF< 50			
COOLING AIR	1.614 m^3/sec 3420 cfm				1.961 m^3/sec 4156 cfm			
WINDING 311								
VOLTAGE SERIES STAR (Y)	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
VOLTAGE PARALLEL STAR (Y)	190/110	200/115	208/120	220/127	208/120	220/127	230/133	240/138
VOLTAGE EDISON DELTA (Δ)	220/110	230/115	240/120	250/125	240/120	254/127	266/133	277/138
WINDING 312								
VOLTAGE SERIES STAR (Y)	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
VOLTAGE DELTA (Δ)	220	230	240	250	240/120	254/127	266/133	277/138
kVA BASE RATING FOR REACTANCE VALUES	910	910	910	875	1025	1063	1075	1125
Xd DIR. AXIS SYNCHRONOUS	2.99	2.70	2.51	2.14	3.37	3.13	2.89	2.78
X'd DIR. AXIS TRANSIENT	0.26	0.23	0.22	0.19	0.29	0.27	0.25	0.24
X"d DIR. AXIS SUBTRANSIENT	0.18	0.16	0.15	0.13	0.19	0.18	0.17	0.16
Xq QUAD. AXIS REACTANCE	1.77	1.60	1.48	1.27	2.00	1.86	1.72	1.65
X"q QUAD. AXIS SUBTRANSIENT	0.19	0.17	0.16	0.14	0.22	0.20	0.19	0.18
X_L LEAKAGE REACTANCE	0.087	0.079	0.073	0.062	0.098	0.091	0.084	0.081
X_2 NEGATIVE SEQUENCE	0.20	0.18	0.17	0.14	0.23	0.21	0.20	0.19
X_0 ZERO SEQUENCE	0.026	0.023	0.022	0.019	0.029	0.027	0.025	0.024
REACTANCES ARE SATURATED	VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED							
T'd TRANSIENT TIME CONST.	0.185 sec							
T"d SUB-TRANSTIME CONST.	0.025 sec							
T'do O.C. FIELD TIME CONST.	2.44 sec							
Ta ARMATURE TIME CONST.	0.040 sec							
SHORT CIRCUIT RATIO	1/Xd							

Continuous development of our products entitles us to change specification details without notice, therefore they must not be regarded as binding.

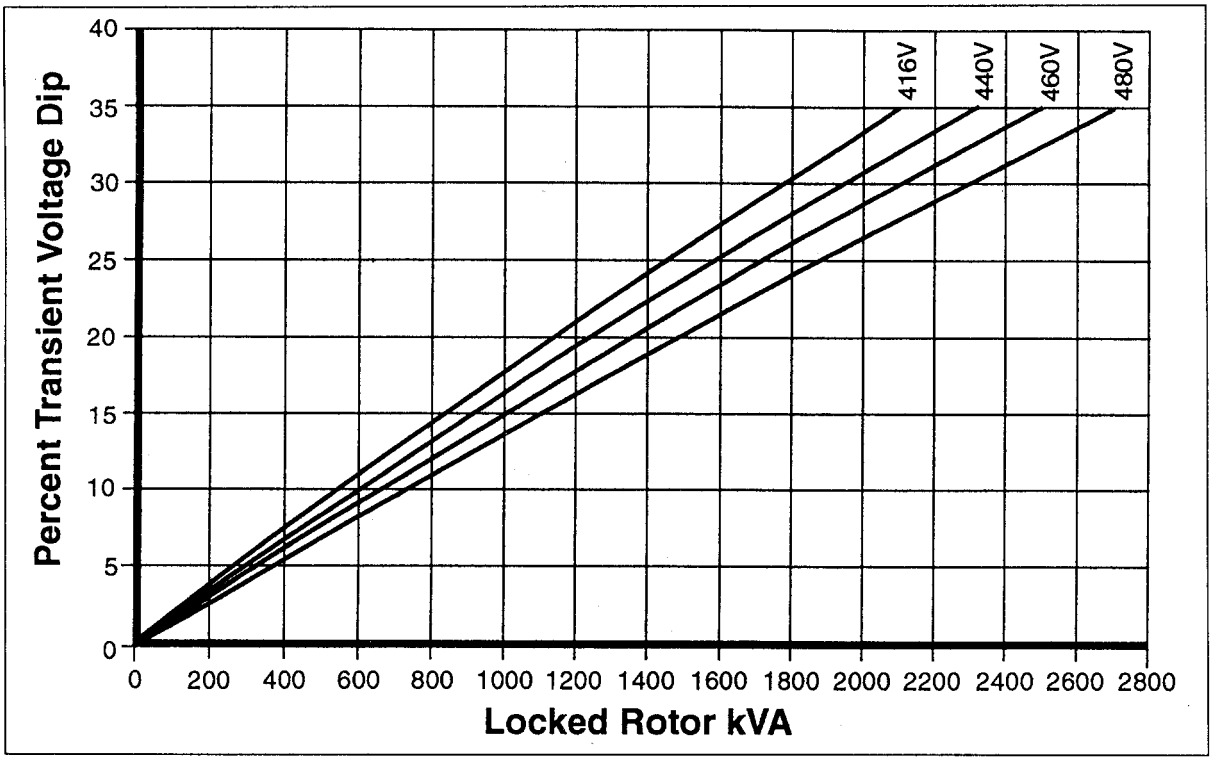
FRAME HC634H 50 Hz

SERIES 3 WINDING 311/312
LOCKED ROTOR MOTOR STARTING CURVE

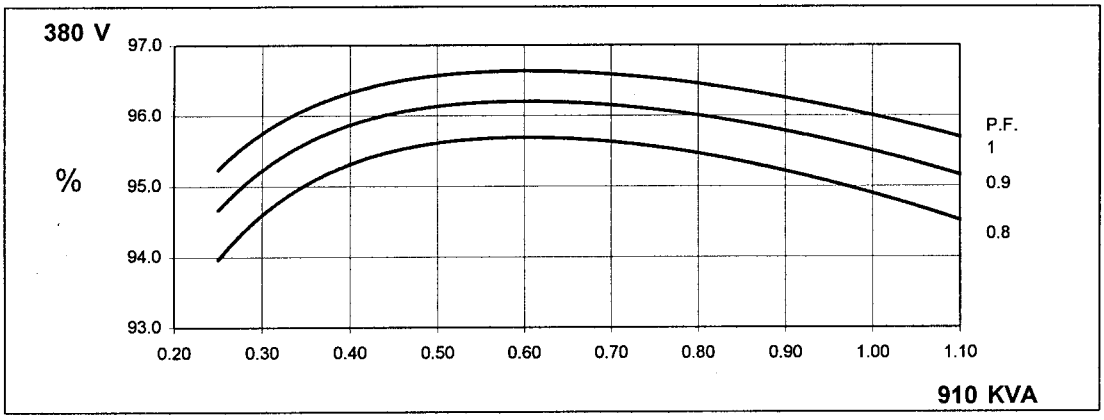


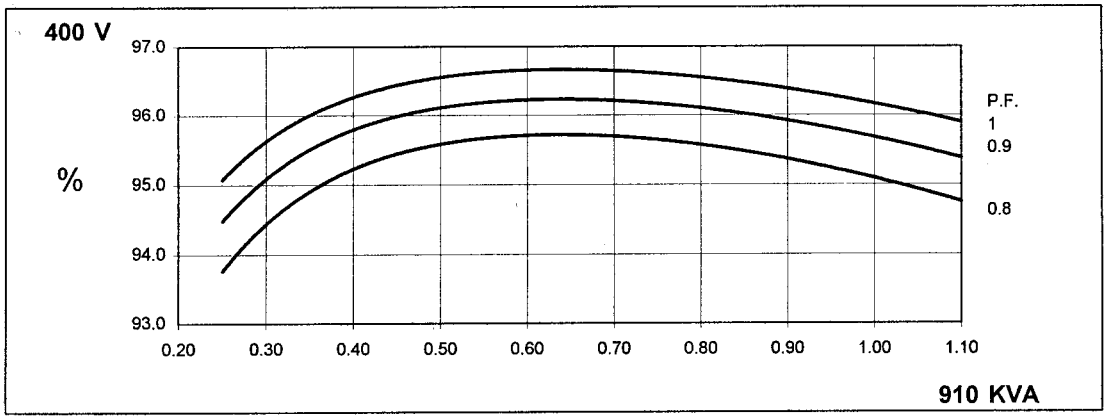
FRAME HC634H 60 Hz

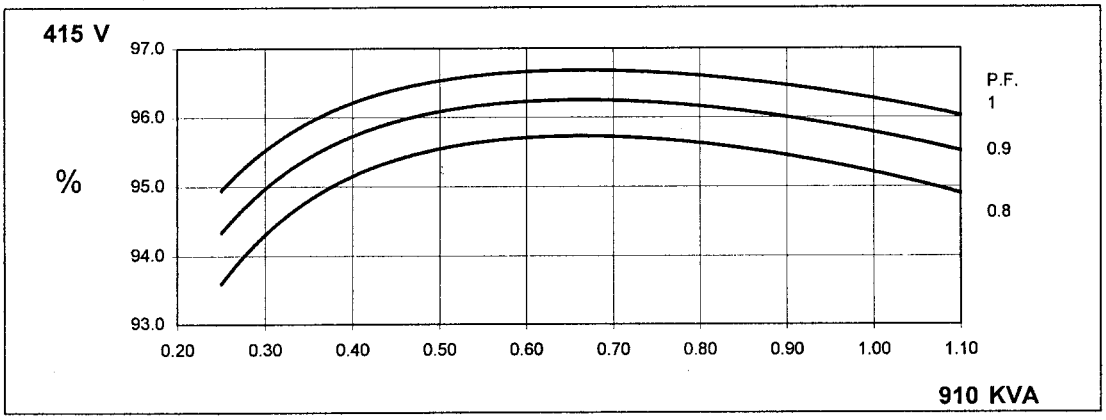
SERIES 3 WINDING 311/312
LOCKED ROTOR MOTOR STARTING CURVE

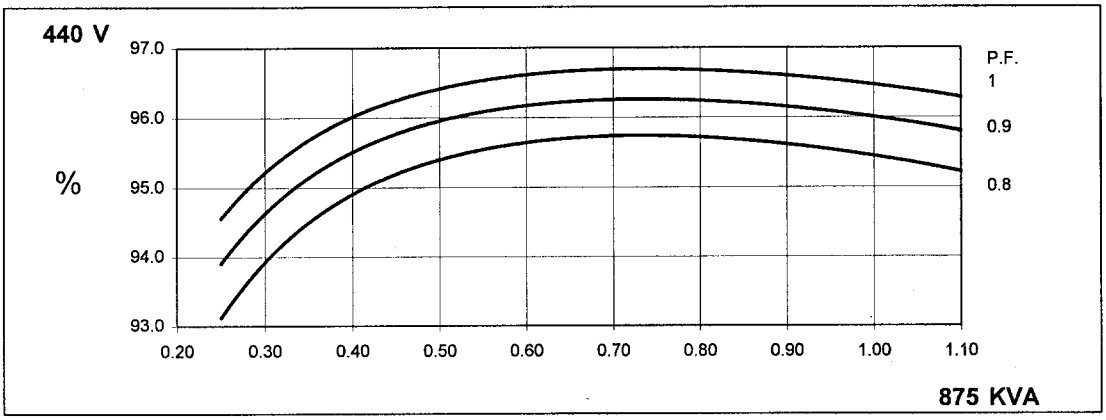


THREE PHASE EFFICIENCY CURVES

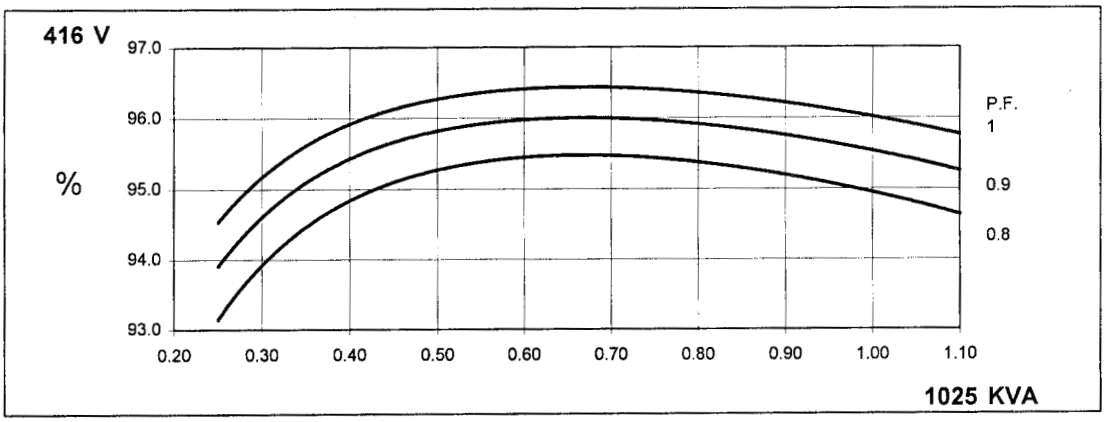


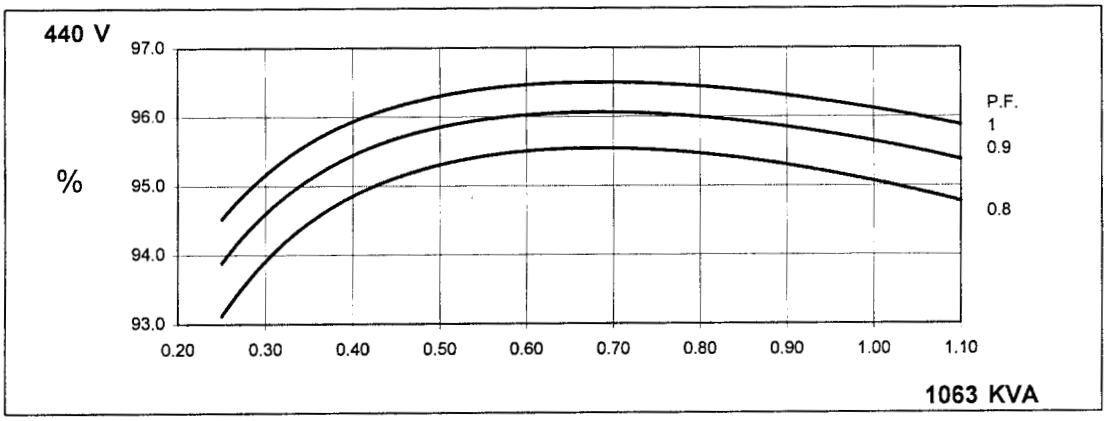


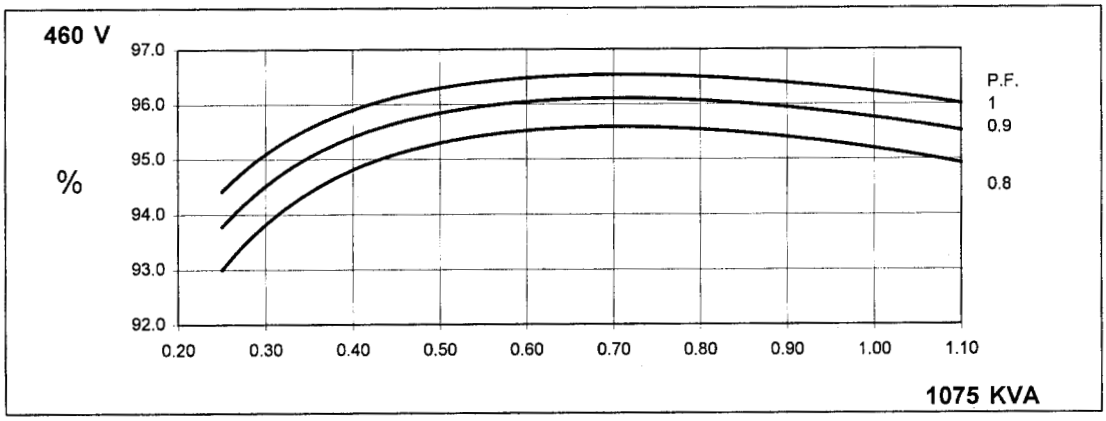


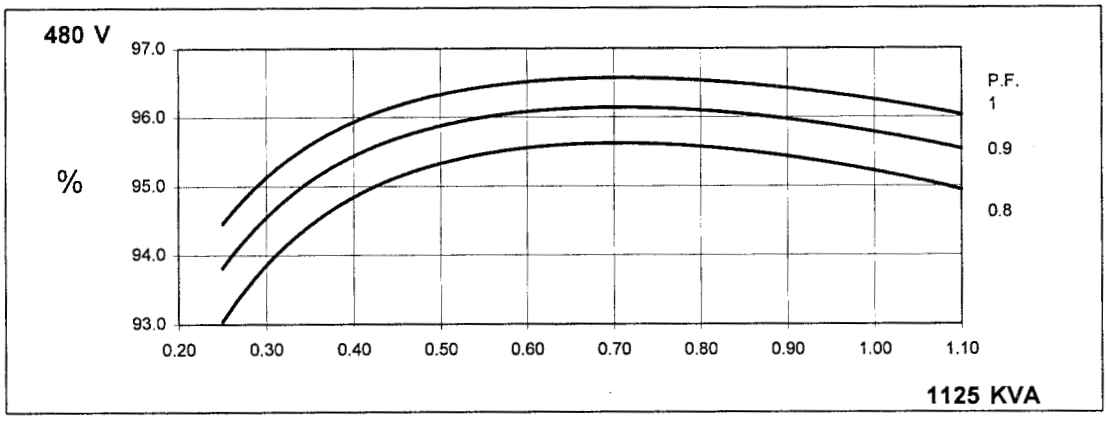


THREE PHASE EFFICIENCY CURVES





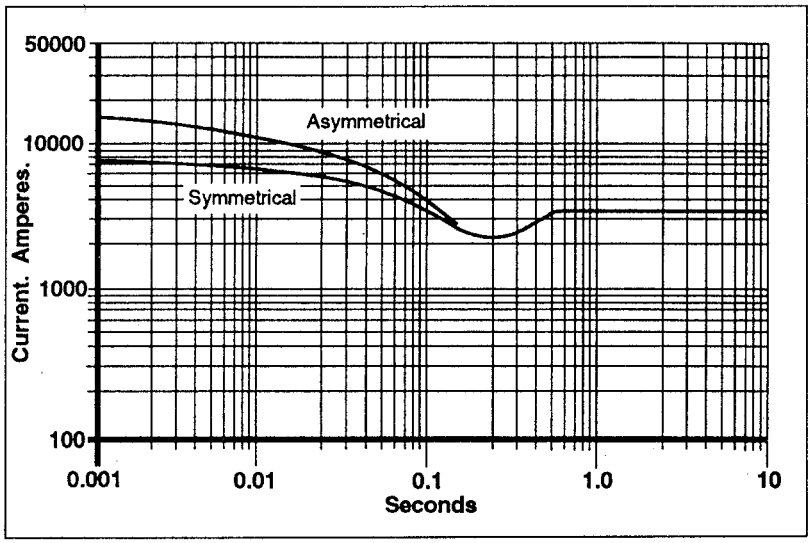




FRAME HC634H 50 Hz

SERIES THREE
Three Phase Short Circuit Decrement Curve
No-load Excitation at Rated Speed

Based on series star (wye) connection



Note 1

The following multiplication factors should be used to adjust the values from curve between time 0.001 seconds and the minimum current point in respect of nominal operating voltage :

VOLTAGE	FACTOR
380 V	X 1.0
400 V	X 1.07
415 V	X 1.12
440 V	X 1.18

The sustained current value is constant irrespective of voltage level.

Note 2

The following multiplication factors should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	3 PHASE	2 PHASE L-L	1 PHASE L-N
Instantaneous	X 1.00	X 0.87	X 1.30
Minimum	X 1.00	X 1.80	X 3.20
Sustained	X 1.00	X 1.50	X 2.50
Max. sustained duration	10 sec.	5 sec.	2 sec.

All other times are unchanged.

Note 3 Winding 311 Only

Curves are drawn for Series Star (Wye) connected machines. For other connections the following multipliers should be applied to current values shown :

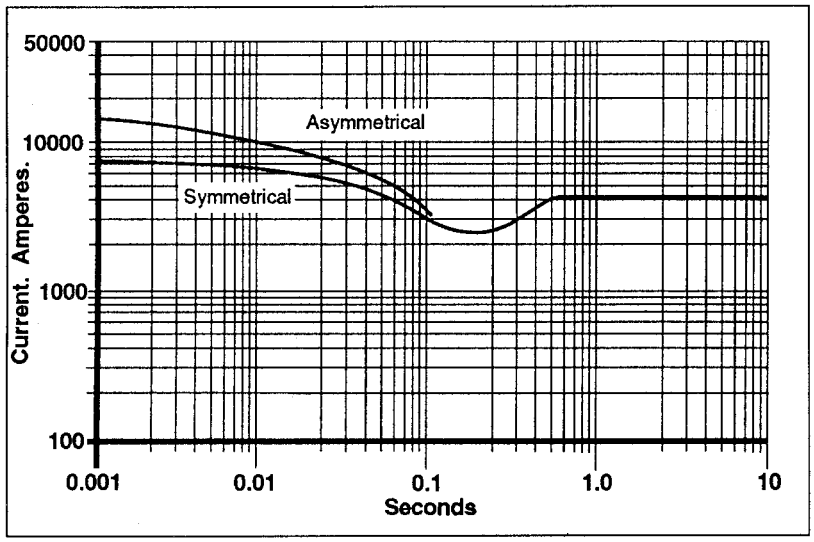
Parallel Star (Wye) Curve current value X 2
Series Delta (Δ) Curve current value X 1.732

Times are unchanged.

FRAME HC634H 60 Hz

SERIES THREE
Three Phase Short Circuit Decrement Curve
No-load Excitation at Rated Speed

Based on series star (wye) connection



Note 1

The following multiplication factors should be used to adjust the values from curve between time 0.001 seconds and the minimum current point in respect of nominal operating voltage :

VOLTAGE	FACTOR
416 V	X 1.0
440 V	X 1.06
460 V	X 1.12
480 V	X 1.17

The sustained current value is constant irrespective of voltage level.

Note 2

The following multiplication factors should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	3 PHASE	2 PHASE L-L	1 PHASE L-N
Instantaneous	X 1.00	X 0.87	X 1.30
Minimum	X 1.00	X 1.80	X 3.20
Sustained	X 1.00	X 1.50	X 2.50
Max. sustained duration	10 sec.	5 sec.	2 sec.

All other times are unchanged.

Note 3 Winding 311 Only

Curves are drawn for Series Star (Wye) connected machines. For other connections the following multipliers should be applied to current values shown :

Parallel Star (Wye) Curve current value X 2
Series Delta (Δ) Curve current value X 1.732

Times are unchanged.

NEWAGE
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