

VARIANCE FEES

MGO \$50.00
COMM \$490.00
Priority - Double above

PETITION FOR VARIANCE APPLICATION

**City of Madison
Building Inspection
Division**
215 Martin Luther King Jr. Blvd.
Madison, WI 53703
(608) 266-4568

Amount Paid 50 \$/10/17 FMR

Name of Owner Jacob Klein	Project Description 5 story, 95 unit apartment building, with underground parking	Agent, architect, or engineering firm Knothe & Bruce Architects, LLC
Company (if applies) JT Klein Company, Inc.		No. & Street 7601 University Ave.; Ste 201
No. & Street 906 Bear Claw Way	Tenant name (if any) 8TWENTY PARK	City, State, Zip Code Middleton, WI 53562
City, State, Zip Code Madison, WI 53717	Building Address 903 Delaplaine Ct. (aka 820 Park St.)	Phone (608) 836-3690
Phone (608) 203-5326	Madison, WI	Name of Contact Person Greg Held
e-mail jacob@jtklein.com		e-mail gheld@knothebruce.com



- The rule being petitioned reads as follows: (Cite the specific rule number and language. Also, indicate the nonconforming conditions for your project.)
MGO 34.604 Emergency Standby Power Systems: (1) ...power shall be supplied by an on-premise generator with an onsite fuel supply source....
(2) IFC section 604.2.14.1.1, the exception for the use of pipeline natural gas as the fuel supply for the generator is not included as part of this code.
- The rule being petitioned cannot be entirely satisfied because:
The owner feels a natural gas powered generator has many advantages over diesel, including cost, noise, smell and physical size.
- The following alternatives and supporting information are proposed as a means of providing an equivalent degree of health, safety, and welfare as addressed by the rule:
The generator and the rest of the building would be provided with a separate gas laterals. There would be an independent shutoff valves for each separate gas service. These separate services would allow the building gas supply to be shut off while allowing the generator to remain in operation. The gas services and gas shut off valves would be in separate locations and conspicuously labeled as to their function. (see attached site plan and generator data sheets)

Note: Please attach any pictures, plans, or required position statements.

VERIFICATION BY OWNER – PETITION IS VALID ONLY IF NOTARIZED AND ACCOMPANIED BY A REVIEW FEE AND ANY REQUIRED POSITION STATEMENTS.

Note: Petitioner must be the owner of the building. Tenants, agents, contractors, attorneys, etc. may not sign the petition unless a Power of Attorney is submitted with the Petition for Variance Application.

Jacob Klein _____, being duly sworn, I state as petitioner that I have read the foregoing petition, that I believe it to be true, and I have significant ownership rights in the subject building or project.

Signature of owner 	Subscribed and sworn to before me this date: <u>April 20, 2017</u>
Notary public 	My commission expires: <u>March 26, 2021</u>

NOTE: ONLY VARIANCES FOR COMMERCIAL CODES ARE REQUIRED TO BE NOTARIZED.

JENNIFER L PIENTRA
Notary Public
State of Wisconsin

City of Madison Fire Department Position Statement

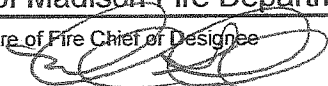
Owner: Jacob Klein JT Klein Company, Inc.	Project Name: 8Twenty Park Apartments	Contact: Greg Held Knothe & Bruce Architects
Address: 906 Bear Claw Way Madison, WI 53717	Building Location: 903 Delaplaine Ct Madison, WI	Address: 7601 University Ave Suite 201 Middleton, WI 53562
Owner Phone: 608-203-5326 Email: jacob@jtklein.com	Building Occupancy or Use: Group R-2 Residential Apartments	Phone: 608-836-3690 Email: gheld@knothebruce.com

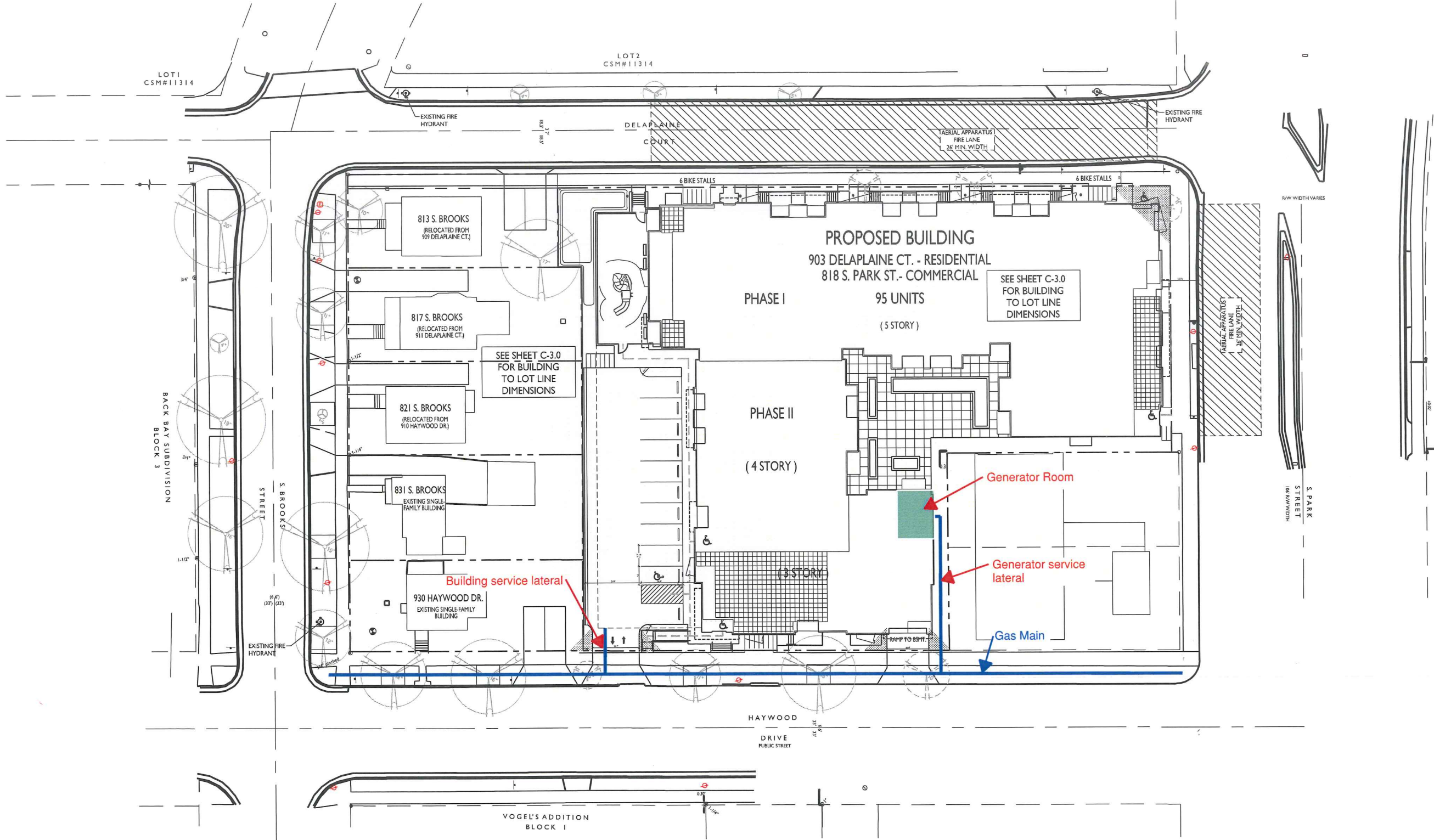
Rule Being Petitioned: MGO 34.604 Emergency Standby Power fuel source

I have read the application for variance and recommend: (check appropriate box)

Approval
 Conditional Approval
 Denial
 No Comment

- MGO 34.604 was intended to be applied to high-rise buildings and at the time the ordinance was created, only high-rise buildings were required to have an emergency power source.
- This building is not a high-rise building
- MFD supports the approval based on a dedicated supply line serving the emergency generator only.
- Permanent, all-weather signage shall be provided indicating that the supply line serves only the emergency generator.
- Gas piping serving the generator inside the building shall be labeled as an emergency supply line only and shall not be used to serve any other equipment. Labeling shall be every 10-ft or each piece of pipe whichever is greater.

Name of Fire Chief or Designee (type or print) Bill Sullivan, Fire Protection Engineer	
City of Madison Fire Department	Telephone Number 608-261-9658
Signature of Fire Chief or Designee 	Date Signed May 5, 2017



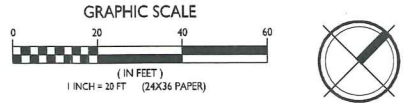
ISSUED
Conditional Use/Re-zoning - October 7, 2015
UDC & Revised CU - November 11, 2015
Site Plan Review Submittal - April 29, 2016
Progress Set - May 9th, 2016
Revised for Fire Dept. May 12, 2016
Issued - June 1st, 2016
Progress Set 95% - June 16, 2016
Issued for Site Plan Supplement - June 23, 2016
Issued - July 27, 2016
Issued for Construction - January 06, 2017
VARIANCE SUBMITTAL
4-21-2017

PROJECT TITLE
8TWENTY PARK

903 Delaplaine Ct. &
818 S. Park St.
Madison, WI
SHEET TITLE
Fire Access
Plan

SHEET NUMBER
C-1.3
PROJECT NO. 1524
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1
C-1.4
AERIAL FIRE APPARATUS ACCESS
1" = 20'-0"



1. = 26' WIDE AERIAL APPARATUS FIRE LANE PARALLEL TO ONE ENTIRE SIDE OF A BUILDING AND WITHIN 30'.
2. REQUIRED LENGTH OF AERIAL FIRE APPARATUS ACCESS ROAD SHOULD NOT BE LESS THAN 25% OF THE BUILDING PERIMETER. TOTAL BUILDING PERIMETER IS APPROXIMATELY 1,120 FEET. TOTAL REQUIRED LENGTH OF AERIAL FIRE APPARATUS ACCESS ROAD IS 380 FEET. PROVIDED LENGTH OF AERIAL FIRE APPARATUS ACCESS ROAD IS 548 FEET.

Spark-ignited generator set

30–60 kW standby
EPA emissions



Description

Cummins Power Generation generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby applications.

Features

Gas engine - Rugged 4-cycle Cummins QSJ2.4 spark-ignited engine delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Control system - The PowerCommand® 1.1 electronic control is standard equipment and provides total generator set system integration including automatic remote starting/stopping,

precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50 °C (122 °F) ambient temperature.

Enclosures - The aesthetically appealing enclosure incorporates special designs that deliver one of the quietest generators of its kind. Aluminum material plus durable powder coat paint provides the best anti-corrosion performance. The genset enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. The intelligent design has removable panels and service doors to provide easy access for service and maintenance.

NFPA - The generator set accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor and dealer network.

Model	Natural Gas		Propane		Data sheets 60 Hz
	Standby 60 Hz		Standby 60 Hz		
	kW	kVA	kW	kVA	
C30 N6H	30	38	30	38	NAD-5699-EN
C36 N6H	36	45	36	45	NAD-5700-EN
C40 N6H	40	50	40	50	NAD-5701-EN
C45 N6H	45	56	45	56	NAD-5702-EN
C50 N6H	50	63	50	63	NAD-5703-EN
C60 N6H	60	75	60	75	NAD-5704-EN

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Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.25% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated or turbo charged (varies by generator set model)
Bore	86.5 mm (3.4 in)
Stroke	100.0 mm (3.94 in)
Displacement	2.4 liters (143.5 in ³)
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	550 amps at ambient temperature of 0 °F to 32 °F (-18 °C to 0 °C)
Battery charging alternator	55 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on with relief valve
Standard cooling system	50 °C (122 °F) ambient cooling system
Rated speed	3600 rpm

Alternator specifications

Design	Brushless, 2 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	120 °C (248 °F) standby
Exciter type	Torque match (shunt)
Alternator cooling	Direct drive centrifugal blower
AC waveform total harmonic distortion	< 5% no load to full linear load, < 3% for any single harmonic
Telephone influence factor (TIF)	< 50 per NEMA MG1-22.43
Telephone harmonic factor (THF)	3%

Available voltages

1-phase	3-phase
• 120/240	• 120/208
	• 120/240 delta
	• 277/480

Generator set options

Fuel system

- Single fuel - natural gas or propane vapor, field selectable
- Dual fuel - natural gas and propane vapor auto changeover
- Low fuel gas pressure warning

Engine

- Engine air cleaner - normal duty
- Shut down - low oil pressure
- Extension - oil drain

Alternator

- 120 °C (248 °F) temperature rise alternator
- 105 °C (221 °F) temperature rise alternator
- Shunt excitation system
- Alternator heater, 120V

Control

- AC output analog meters (bargraph)
- Stop switch - emergency
- Auxiliary output relays (2)
- Auxiliary configurable inputs (8) and relay outputs (8)

Electrical

- Single circuit breaker
- Dual circuit breakers
- 80% rated circuit breakers
- 100% rated circuit breakers

Enclosure

- Aluminum enclosure Sound Level 1 or Level 2, with muffler installed, sandstone or green color
- Open set

Cooling system

- Shutdown - low coolant level
- Warning - low coolant level
- Extension - coolant drain
- Cold weather options:
 - o < 4 °C (40 °F) - cold weather
 - o < -17 °C (0 °F) - extreme cold weather
- Exhaust system
- Exhaust connector NPT

Generator set application

- Base barrier - elevated generator set
- Battery rack, larger battery
- Radiator outlet duct adapter

Warranty

- Base warranty - 2 year, 400 hour, standby
- Standby, 3 year, 900 hour, parts
- Standby, 5 year, 1500 hour, parts
- Standby, 3 year, 900 hour, parts and labor
- Standby, 5 year, 1500 hour, parts and labor
- Standby, 3 year, 900 hour, parts, labor and travel
- Standby, 5 year, 1500 hour, parts, labor and travel

Note: Some options may not be available on all models - consult factory for availability.

Generator set accessories

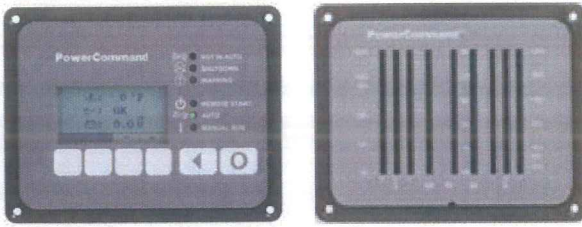
- Extreme cold weather kit
- Battery rack, larger battery
- Battery heater kit
- HMI211RS in-home display, including pre-configured 12" harness
- HMI211 remote display, including pre-configured 12" harness
- HMI220 remote display
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)
- Annunciator - RS485
- Remote monitoring device - PowerCommand 500
- Battery charger - stand-alone 12V
- Circuit breakers
- Enclosure Sound Level 1 to Sound Level 2 upgrade kit
- Enclosure paint touch up kit
- Base barrier - elevated generator set
- Mufflers - industrial, residential or critical
- Alternator shunt excitation system
- Alternator heater
- Maintenance and service kit
- Engine lift kit

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Control system PowerCommand 1.1



PowerCommand control is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:

- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating generator set running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -40 °C to +70 °C
- Bargraph display (optional)

AC protection

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

Engine protection

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown

Alternator data

- Line-to-line and Line-to-neutral AC volts
- 3-phase AC current
- Frequency
- Total kVa

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

Other data

- Generator set model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

Digital governing (optional)

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation

- Integrated digital electronic voltage regulator
- 2-phase line-to-line sensing
- Configurable torque matching

Control functions

- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Automatic transfer switch (ATS) control
- Generator set exercise, field adjustable

Options

- Auxiliary output relays (2)
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation
- PowerCommand 500/550 for remote monitoring and alarm notification (accessory)
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- Digital governing
- AC output analog meters (bargraph)
 - Color-coded graphical display of:
 - 3-phase AC voltage
 - 3-phase current
 - Frequency
 - kVa
- Remote operator panel

Ratings definitions

Emergency standby power (ESP):

Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-time running power (LTP):

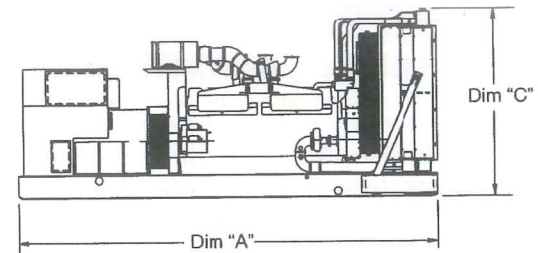
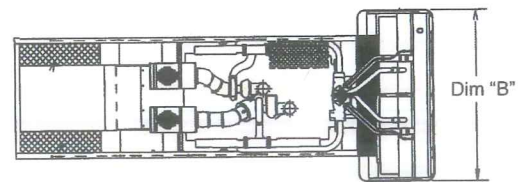
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

Prime power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base load (continuous) power (COP):

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.



This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.





Do not use for installation design

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight*dry kg (lbs)	Set Weight*wet kg (lbs)
Open Set					
C30 N6H	1669 (65.7)	864 (34)	1123 (44.2)	438 (966)	455 (1002)
C36 N6H	2225 (87.6)	864 (34)	1123 (44.2)	479 (1055)	495 (1091)
C40 N6H	2225 (87.6)	864 (34)	1123 (44.2)	499 (1101)	516 (1137)
C45 N6H	2225 (87.6)	864 (34)	1123 (44.2)	567 (1251)	584 (1287)
C50 N6H	2225 (87.6)	864 (34)	1123 (44.2)	567 (1251)	584 (1287)
C60 N6H	2225 (87.6)	864 (34)	1123 (44.2)	581 (1281)	597 (1317)
Sound Attenuated Enclosure Level 1					
C30 N6H	1829 (72)	864 (34)	1156 (45.5)	484 (1067)	500 (1103)
C36 N6H	2388 (94)	864 (34)	1156 (45.5)	529 (1167)	546 (1203)
C40 N6H	2388 (94)	864 (34)	1156 (45.5)	550 (1213)	567 (1249)
C45 N6H	2388 (94)	864 (34)	1156 (45.5)	618 (1363)	635 (1399)
C50 N6H	2388 (94)	864 (34)	1156 (45.5)	618 (1363)	635 (1399)
C60 N6H	2388 (94)	864 (34)	1156 (45.5)	632 (1393)	648 (1429)
Sound Attenuated Enclosure Level 2					
C30 N6H	2073 (81.6)	864 (34)	1156 (45.5)	489 (1078)	505 (1114)
C36 N6H	2626 (103.4)	864 (34)	1156 (45.5)	534 (1178)	551 (1214)
C40 N6H	2626 (103.4)	864 (34)	1156 (45.5)	555 (1224)	572 (1260)
C45 N6H	2626 (103.4)	864 (34)	1156 (45.5)	623 (1374)	640 (1410)
C50 N6H	2626 (103.4)	864 (34)	1156 (45.5)	623 (1374)	640 (1410)
C60 N6H	2626 (103.4)	864 (34)	1156 (45.5)	637 (1404)	653 (1440)

* Weights based on 1-phase generator set. Weights may vary with a different configuration.

Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

 <p>The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.</p>	 <p>This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.</p>
<p>International Building Code</p> <p>The generator set is certified to International Building Code (IBC) 2012.</p>	 <p>The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.</p>  <p>All low voltage models are CSA certified to product class 4215-01.</p> <p>U.S. EPA</p> <p>Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.</p>

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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Generator set data sheet



Model: C36 N6H
KW rating: 36.0 natural gas standby
 36.0 propane standby
Frequency: 60 Hz
Fuel type: Natural gas/propane
Emissions level: EPA emissions

Exhaust emission data sheet:	EDS-1172
Exhaust emission compliance sheet:	EPA-1242
Sound performance data sheet:	MSP-1168
Cooling performance data sheet:	MCP-256
Prototype test summary data sheet:	PTS-317

	Natural gas				Propane			
	Standby				Standby			
	kW (kVA)				kW (kVA)			
Ratings	36.0 (45.0)				36.0 (45.0)			
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
scfh	264.2	353.9	443.6	533.3	107.6	144.9	182.2	219.6
m ³ /hr	7.48	10.02	12.56	15.10	3.05	4.10	5.16	6.22

	Natural gas		Propane	
	Standby rating		Standby rating	
Engine model	QSJ2.4			
Configuration	Cast iron, in-line 4 cylinder			
Aspiration	Naturally aspirated			
Gross engine power output, kWm (bhp)	65 (87.5)		65 (87.5)	
BMEP at rated load, kPa (psi)	903.94 (131.1)		925.09 (134.2)	
Bore, mm (in)	86.5 (3.4)			
Stroke, mm (in)	100.0 (3.94)			
Rated speed, rpm	3600			
Piston speed, m/s (ft/min)	12.0 (2354)			
Compression ratio	9.5:1			
Lube oil capacity, L (qt)	4 (4.54)			
Overspeed limit, rpm	4500 ± 9			

Fuel supply pressure

Minimum operating pressure, kPa (in H ₂ O)	1.5 (6.0)
Maximum operating pressure, kPa (in H ₂ O)	3.2 (13.0)

Air	Natural gas	Propane
	Standby rating	Standby rating
Combustion air, m ³ /min (scfm)	2.3 (81.9)	2.1 (75.0)
Maximum air cleaner restriction, kPa (in H ₂ O)	1.24 (5.0)	
Alternator cooling air, m ³ /min (scfm)	N/A	

Exhaust

Exhaust flow at rated load, m ³ /min (cfm)	9.9 (353.5)	8.9 (318.4)
Exhaust temperature, °C (°F)	746 (1374)	810 (1490)
Exhaust back pressure (maximum allowable at engine), kPa (in H ₂ O)	8.7 (35)	8.7 (35)
Exhaust back pressure (actual with factory fitted muffler), kPa (in H ₂ O)	2.72 (10.9)	

Standard set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)	
Fan load, kW (HP)	2.1 (2.8)	
Coolant capacity (with radiator), L (US gal)	10.2 (2.7)	
Coolant system air flow, m ³ /min (scfm)	131.6 (4700)	
Total heat rejection, MJ/min (Btu/min)	3.1 (2809)	3.1 (2809)
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)	

Weights²

Unit dry weight kgs (lbs)	529 (1168)
Unit wet weight kgs (lbs)	545 (1204)

Notes:

¹ For non-standard remote installations contact your local Cummins Power Generation representative.

² Weights represent a set with 1-phase with sound level 1 enclosure.

Alternator data

Standard alternators		Natural gas/ propane single phase table	Natural gas/propane three phase table		
Maximum temperature rise above 40 °C ambient		120 °C	120 °C	120 °C	120 °C
Feature code		B949-2	B986-2	B946-2	B943-2
Alternator data sheet number		ADS-575	ADS-572	ADS-572	ADS-572
Voltage ranges		120/240	120/240	120/208	277/480
Voltage feature code		R104-2	R106-2	R098-2	R002-2
Surge kW		52.3/53.6	52.3/53.6	52.3/53.6	52.3/53.6
Motor starting kVA (at 90% sustained voltage)		Shunt	68	86	86
		PMG	Not offered	Not offered	Not offered
Full load current amps at standby rating		150	108	125	54

Optional alternators for improved motor starting capability		Natural gas/ propane single phase table	Natural gas/propane three phase table		
Maximum temperature rise above 40 °C ambient		105 °C	105 °C	105 °C	105 °C
Feature code		BB96-2	BB94-2	BB93-2	BB95-2
Alternator data sheet number		ADS-578	ADS-573	ADS-573	ADS-573
Voltage ranges		120/240	120/240	120/208	277/480
Voltage feature code		R104-2	R106-2	R098-2	R002-2
Surge kW		52.3/53.6	52.7/54.0	52.7/54.0	52.7/54.0
Motor starting kVA (at 90% sustained voltage)		Shunt	76	95	95
		PMG	Not offered	Not offered	Not offered
Full load current amps at standby rating		150	108	125	54

Derating factors

Natural gas/propane

Standby	Engine power available up to 1005 m (3300 ft) at ambient temperatures up to 40 °C (104 °F). Above these elevations derate at 4% per 305m (1000ft) and 2% per 10 °C above 40 °C (104 °F).
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Ratings definitions

Emergency standby power (ESP):	Limited-time running power (LTP):	Prime power (PRP):	Base load (continuous) power (COP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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