

Wastewater Services Operational Shutdown Summary

Branch	Document #	Location of Shutdown	Date of Shutdown
Wastewater Services	Sample OSS 1	Lift Station Name	Proposed date and time

Section 1: Purpose
<i>Describe the purpose of the planned shutdown.</i>
* Temporary Station Shutdown for Temporary Power Service Connection (1 hour) *
Lift Station Name will be completely offline while the Electrician makes a connection inside 600V cabinet.
Contractor name, subcontractor name and Collections Crew to remain on site for the duration of the shutdown.

Section 2: Stakeholders			
<i>List all relevant stakeholders that will be involved or at a minimum, must be kept informed, of the shutdown and related activities.</i>			
Note: changes to this list by any stakeholder should be communicated to the team 24hrs in advance			
Owner: City of Winnipeg	Role	Phone #	Cell #
Wastewater Control	McPhillips Control Centre	Number	
City Name	Superintendent of WW Collection		Number
City Name	Project Coordinator		Number
City Name	Supervisor of Regional WW Collection		Number
City Name	D&C Inspector		Number
City Name	City Project Manager		Number
Contract Administrator:	Role	Phone #	Cell #
Consultant Name			
Contract Admin Name	Contract Administrator		Number
Contract Admin Rep Name	Discipline Representative		Number
* Call order as listed below (response time +/- 45 min. after call is acknowledged)			
** Modeled time to overflow = 2.75 hrs with temporary 300mm weir in place.			
Contractor: Name	Role	Phone #	Cell #
Contractor Name	Construction Site Supervisor		Number
Contractor Name	Project Manager		Number
subContractor: Name	Role	Phone #	Cell #
subcontractor Name	Electrical Site Supervisor		Number
subcontractor Name	Electrical Project Manager		Number

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Section 3: Risks and Contingency Planning	
<i>List all potential risks associated with the planned shutdown. Develop contingency plans to address risks. Hit tab in lowest right cell to add additional lines.</i>	
Risk	Contingency Plan
<p><u>Overflow to the Environment Risk</u> Under normal dry weather flow, typical pump OFF time is approximately 1 hour.</p> <p>Hydro work could take > 1hour</p>	<p>Service cable swap inside the building is expected to take <30 minutes. Once complete, the station can be operated on Contractor Name generator.</p> <p>Contractor Name has raised the weir by 300mm to add more storage, and the City shall close the slide gate as a precaution</p> <p>Contractor Name will be responsible for cleaning the outfall chamber between the weir and the slide gate prior to opening the slide gate, if water happens to overflow the weir</p>
<p><u>Generator not working as intended</u></p>	<p>Manitoba Hydro shall not permanently disconnect the existing service cables until the station is confirmed to be operating properly under generator power. If required, utility cabling inside the building can be reinstated in <30 minutes.</p> <p>Work by Manitoba Hydro, Coordinated with Contractor Name</p>

Section 4: Shutdown Plan
<i>Outline the shutdown plan. Include all related tasks, timelines, communication planning, etc.</i>
<p>* 600V Generator to be installed and ready for service prior to shutdown [Contractor Name]</p> <ol style="list-style-type: none"> Contractor Name has installed a 300mm high weir in Metcalfe Outfall Chamber as per Appendix A. [Contractor Name] <ul style="list-style-type: none"> Weir should allow for 2hr 45min time to overflow, as modeled by City Contractor Name, City, Contract Admin to review incoming flow rates and predicted weather forecast prior to proceeding with the shutdown [Contractor Name, City, Contract Admin Name] Collections crew to manually draw down wetwell as far as possible [City] City to close slide gate as a precaution [City] MB Hydro to disconnect power to the building but leave service cabling intact [Hydro] subContractor Name disconnect utility cabling in station, connect new temporary cabling [subContractor Name]

7. Connect Station to generator power through the manual transfer switch [subContractor Name]
8. Collections to confirm station operation [City]
9. Once #6 is confirmed, MB Hydro to swing utility power over to temporary service [Hydro]

10. subContractor Name to switch Station back to utility power using manual transfer switch [subContractor Name]
11. Collections to confirm station operation [City]
12. If required, pump out and clean the outfall chamber between the weir and the slide gate [Contractor Name]
13. City to open slide gate [City]

*** Contractor Name, subContractor Name, and Collections Crew to remain on site for the duration of the shutdown.

Section 5: Monitoring

Describe any monitoring required leading up to, during, and following the shutdown.

1. Monitor wastewater level in the wetwell using existing level sensor. RTU has battery backup for periods with no power. [Contractor Name & City]

2. If level sensor not available, monitor wastewater level in first upstream manhole of station (just outside station). [Contractor Name & City]

* See section 6: Key Data for relevant monitoring information

Section 6: Key Data

Describe data required for shutdown planning and monitoring purposes.

System Storage	2.75 Hours (estimated/modeled)
Normal Pump ON	220.777 (3.25 ft Local)
High Level	223.030 (4.14 ft Local)
Overflow Weir	223.630 (8.12 ft Local) ** temporary modified height

Monitoring MH located just outside the door of the station

Monitoring MH Rim	231.51 m
Monitoring MH Inv	221.99 m

Monitoring MH Measurements – Rim to top of water

High Level	8.48 m (27.8 ft)
Overflow to Environment	7.88 m (25.85 ft)

STORAGE CALCULATION TIME

(Info provided by the City based on their latest InfoWorks Hydraulic Model)

After reviewing the **Lift Station Name** catchment in the model, there is an area in St. Boniface, just west of the Seine River that is not accurately represented in the model network. Reviewing GIS and record drawings, it looks like a significant portion of this area drains to **Lift Station Name**. The City has made internal updates to try and account for the missing population in the model simulations ran, based on our best population estimates. Please be aware that the information below is based on an incomplete model representation of the catchment area:

Description/Condition	Existing Weir	Weir + 300	Weir + 900
Time to Overflow (positive gate open):	45 min	2.75 hrs	17 hrs
Time to Basement flooding (positive gate closed):	>48 hours	>48 hours	>48 hours
Weir Elevation (mASL):	223.330	223.630	224.230

Critical Asset MH#: **S-MH50002376**

Critical Asset Location: **Des Meurons @ Eugenie**

Critical Asset Basement Flooding elevation: **226.70 mASL**

Monitoring MH: **S-MH50003713 (in front of flood pumping station)**

Monitoring MH Chamber Floor elevation: **221.99 mASL**

Monitoring MH Rim Elevation: **231.51 mASL**

* **Contractor Name will be using the Weir + 300 configuration (see Appendix A)**



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Section 7: Lessons Learned	
<i>Once shutdown is complete, meet with relevant stakeholders to review the shutdown. List what went well and what should be changed for future shutdowns.</i>	
What went well?	What should be changed for future shutdowns?

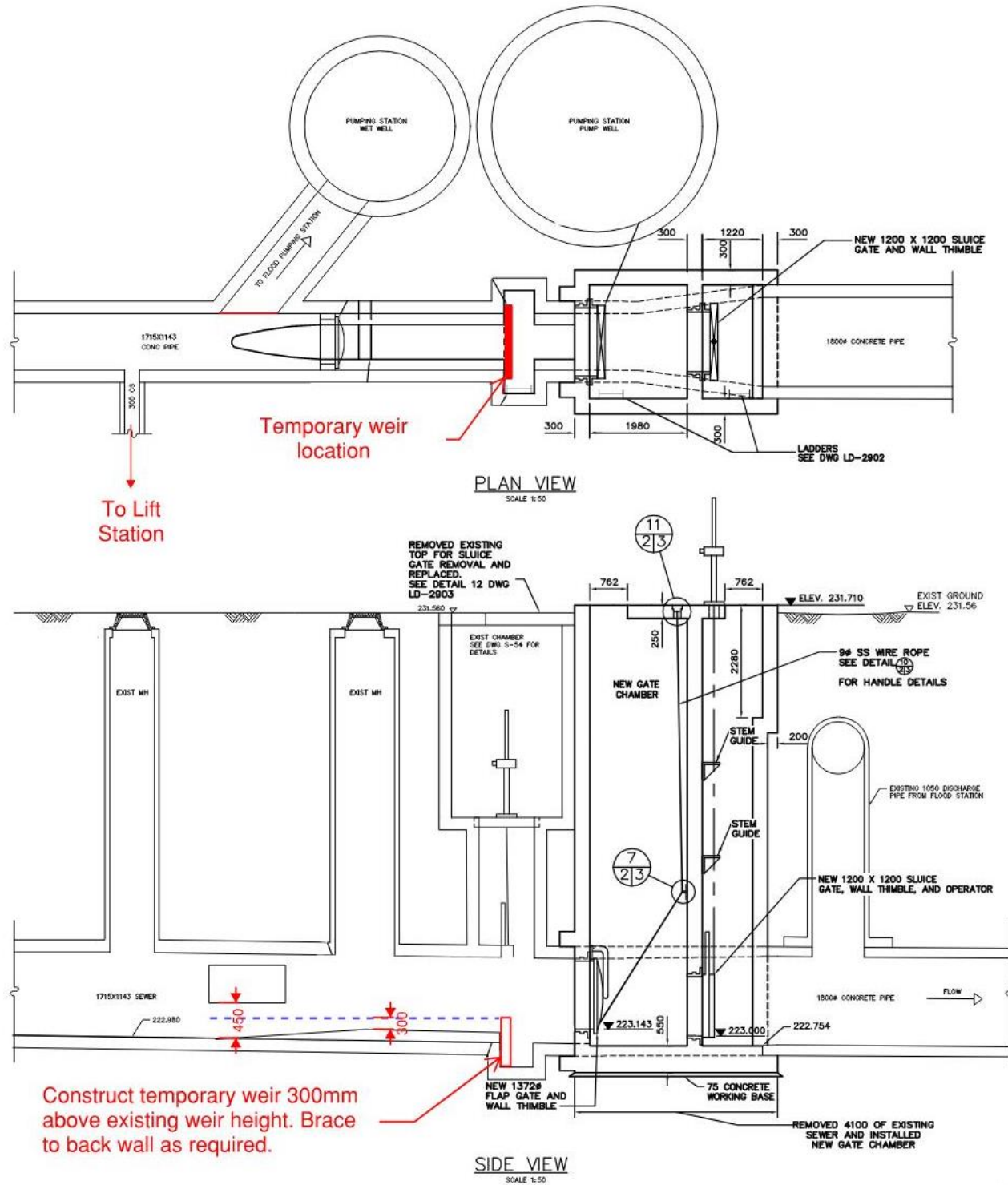
Section 8: Document Close	
Closed by:	Date:

Appendix A

Weir Layout



Temporary weir



NOTES:

1. Temporary weir shall be constructed with wood or cementitious material
2. Weir shall be adequately braced to prevent movement
3. Apply bituminous membrane to seal all edges and create a water tight seal
4. Weir to remain in place for the duration of bypass
5. Remove weir and all temporary components as soon as possible once bypass is complete

Construct temporary weir 300mm above existing weir height. Brace to back wall as required.

RECORD DRAWING
WATER AND WASTE DEPARTMENT

PROJECT COMPLETION DATE: 2005 03 01

B.M. 35-024 ELEV. 230.714	CITY OF WINNIPEG WATER AND WASTE ENGINEERING DIVISION		ENGINEER'S SEAL ORIGINAL MYLAR SIGNED BY K.R. ZUREK 06/01/31	THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT
	DESIGNED BY: JE	CHECKED BY: JE	TENDER NO.: 484-2003 FILENAME: LD-2901.dwg PLOT DATE: 2006 01 30	METCALFE GATE CHAMBER PLAN AND PROFILE
	DRAWN BY: WKT/BAW	APPROVED BY: KZ		
	SCALE: AS SHOWN	RELEASED FOR CONSTRUCTION		LD-2901
1.) REVISED TO RECORD DRAWING	06.01.30	WKT		
NO. REVISIONS	DATE	BY	DATE	
			2003.09.23	
			2003.09.25	

Appendix B

Generator


DCA125SSIU4F

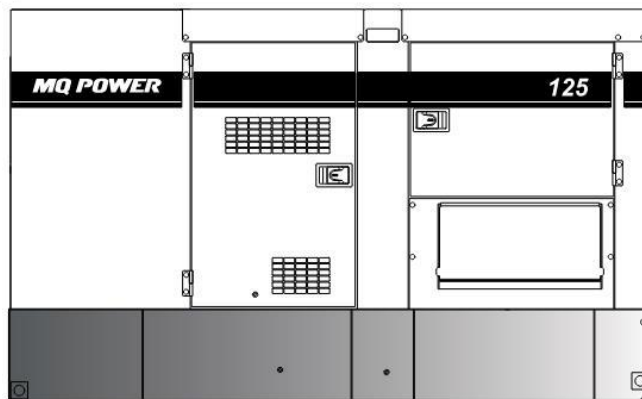
Generator

WhisperWatt™

Prime Rating — 100kW (125kVA)

Standby Rating — 110kW (137.5kVA)

3-Phase, 60 Hertz, 0.8 PF



STANDARD FEATURES

- Heavy duty, 4-cycle, direct injection, heated crankcase vent, turbocharged, charge air cooled, 1000W block heater, diesel engine provides maximum reliability.
- EPA emissions certified - Tier 4 Final emissions compliant.
- Microprocessor engine control system maintains frequency to $\pm 0.25\%$.
- Full load acceptance of standby nameplate rating in a single step.
- Fuel/water separator removes condensation from fuel for extended engine life. Panel mounted alarm light included.
- Sound attenuated, weather resistant, steel housing provides operation at 66 dB(A) at 23 feet. Fully lockable enclosure allows safe unattended operation.
- E-coat and powder coat paint provides durability and weather protection.
- Internal fuel tank with direct reading fuel gauge.
- Spill Containment - Bunded design protects environment by capturing up to 128% of engine fluids.
- Brushless alternator reduces service and maintenance requirements and meets temperature rise standards for Class F insulation systems.
 - Open delta alternator design provides virtually unlimited excitation for maximum motor starting capability.
 - Automatic voltage regulator (AVR) provides precise regulation.
- Fully covered power panel. Three-phase terminals and single phase receptacles allow fast and convenient hookup for most applications including temporary power boxes, tools and lighting equipment. All are NEMA standard.
- ECU845 microprocessor-based digital generator controller.
 - Remote 2-wire start/stop control.
 - High visibility LCD display with heated screen and alphanumeric readout.
 - Operational temperature range of -40° to 85° C.
 - AC monitoring along with fuel and DEF level indicators.
- Digital engine gauges including oil pressure, water temperature, battery volts, engine speed, engine load, fuel level and DEF level.
- Analog generator instrumentation including AC ammeter, AC voltmeter, frequency meter, ammeter phase selector switch, voltmeter phase selector switch, and voltage regulator adjustment potentiometer.
- Automatic safety shutdown system monitors the water temperature, engine oil pressure, low DEF, overspeed and overcrank. Warning lights indicate abnormal conditions.
- Voltage selector switch offers the operator a wide range of voltages that are manually selectable. Fine tuning of the output voltage can be accomplished by adjusting the voltage regulator control knob to obtain the desired voltage.
- Emergency Stop Switch — when manually activated, shuts down generator in the event of an emergency.

DCA125SSIU4F — MQ POWER GENERATOR — REV. #8 (06/01/22)



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DCA125SSIU4F Generator

* Canadian version provides 600V, 3P output

SPECIFICATIONS

Generator Specifications	
Design	Revolving field, self-ventilated Drip-proof, single bearing
Armature Connection	Star with Neutral Zig Zag
Phase	3 Single
Standby Output	110KW (137.5 KVA) 79 KW
Prime Output	100 KW (125 KVA) 72 KW
3Ø Voltage (L-L/L-N) Voltage Selector Switch at 3Ø 240/139	208Y/120, 220Y/127, 240Y/139 N/A
3Ø Voltage (L-L/L-N) Voltage Selector Switch at 3Ø 480/277	416Y/240, 440Y/254, 480Y/277 N/A
1Ø Voltage (L-L/L-N) Voltage Selector Switch at 1Ø 240/120	N/A 240/120
Power Factor	0.8 1.0
Voltage Regulation (No load to full load)	±0.5%
Generator RPM	1800
Frequency	60 Hz
Winding Pitch	2/3
No. of Poles	4
Excitation	Brushless with AVR
Frequency Regulation: No Load to Full Load	Isochronous under varying loads from no load to 100% rated load
Frequency Regulation: Steady State	±0.25% of mean value for constant loads from no load to full load.
Insulation	Class F
Sound Level dB(A) Full load at 23 feet	66

Engine Specifications	
Make / Model	Isuzu / BR-4HK1X
Emissions	EPA Tier 4 Final Certified
Starting System	Electric
Design	4-cycle, water cooled, direct injection, turbocharged. Charged Air Cooled EGR, DOC and SCR.
Displacement	317 in ³ (5193 cc)
No. cylinders	4
Bore x Stroke	4.52 x 4.92 in. (115 x 125 mm)
Gross Engine Power Output	170.8 hp (127.4 kW)
BMEP	211 psi (1458 kPa)
Piston Speed	1476 ft/min (7.5 m/s)
Compression Ratio	16.5:1
Engine Speed	1800 rpm
Overspeed Limit	2070 rpm
Oil Capacity	6.05 gallons (22.9 liters)
Battery	12V 150Ah x 1

Fuel System	
Recommended Fuel	ASTM-D975-No.1 & No.2-D*
Maximum Fuel Flow (per hour)	19 gallons (71.9 liters)
Maximum Inlet Restriction (Hg)	2.9 in (73.6 mm)
Fuel Tank Capacity	169 gallons (640 liters)
Fuel Consumption	gph lph
At full load	7.1 26.9
At 3/4 load	5.6 21.2
At 1/2 load	4.1 15.5
At 1/4 load	2.6 10.0
DEF Tank Capacity	7.4 gallons (28 liters)

* - Use ultra-low sulfur diesel fuel.

Cooling System	
Fan Load	6.57 hp (4.9 kW)
Coolant Capacity (with radiator)	10.3 gallons (39 liters)
Coolant Flow Rate (per minute)	60.8 gallons (230 liters)
Heat Rejection to Coolant (per minute)	4456 Btu (4.7 MJ)
Maximum Coolant Friction Head	1.1 psi (7.7 kPa)
Maximum Coolant Static Head	3.3 feet (1 meter)
Ambient Temperature Rating	104°F (40°C)

Air	
Combustion Air	244 cfm (6.9 m ³ /min)
Maximum Air Cleaner Restriction	25 in. H ₂ O (6.25 kPa)
Alternator Cooling Air	1352 cfm (38.3 m ³ /min)
Radiator Cooling Air	6005 cfm (170 m ³ /min)

Exhaust System	
Gas Flow (full load)	512 cfm (14.5 m ³ /min)
Gas Temperature	658°F (348°C)
Maximum Back Pressure	100 in. H ₂ O (25 kPa)

Amperage	
Rated Voltage	Maximum Amps
1Ø 120 Volt	300A x 2 (Zigzag)
1Ø 240 Volt	300 A (Zigzag)
3Ø 208 Volt	300 Amps
3Ø 240 Volt	300 Amps
3Ø 480 Volt	150 Amps
Main Line Circuit Breaker Rating	300 Amps
Over Current Relay Trip Set Point 480V Mode Only	152 Amps

WARRANTY*

Isuzu Engine**

12 months from date of purchase with unlimited hours or 36 months from date of purchase with 3000 hours (whichever occurs first).

Generator

24 months from date of purchase or 2000 hours (whichever occurs first).

Trailer

12 months excluding normal wear items.

*Refer to the express written, one-year limited warranty sheet for additional information.
**Refer to Isuzu Diesel Engine Limited Warranty for details.

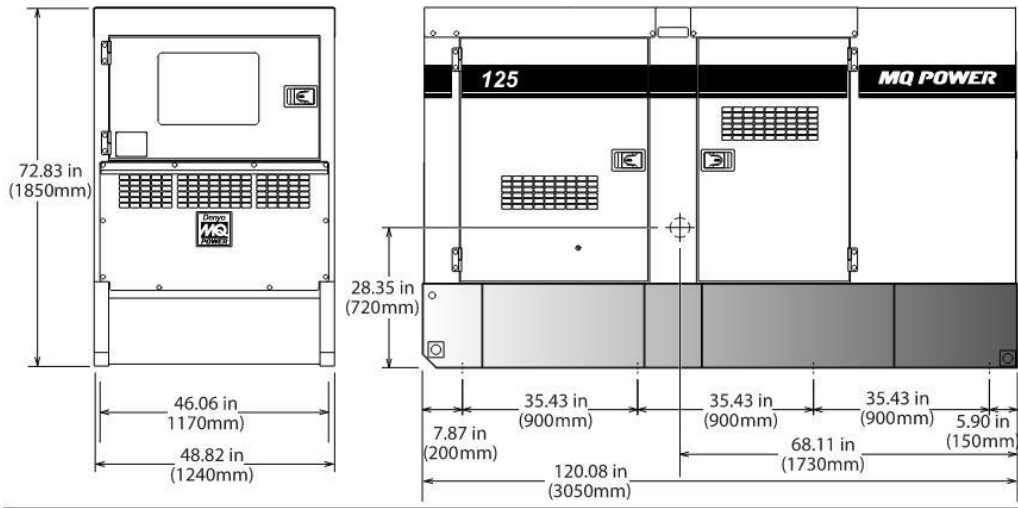
NOTICE

Specifications sheet is subject to change and is not intended for use in installation design.

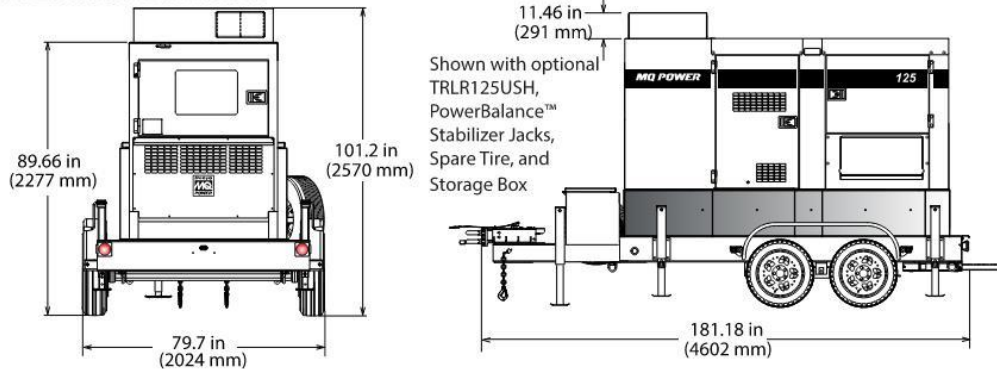


DCA125SSIU4F Generator

SKID-MOUNT DIMENSIONS



TRAILER-MOUNT DIMENSIONS



DCA125SSIU4F Weights*	
Dry Weight	5,291 lbs. (2,400 kg)
Wet Weight	6,702 lbs. (3,040 kg)
Max. Lifting Point Capacity	14,050 lb. (6,370 kg)

* Weights do not include options.

DCA125SSIU4F and TRLR125US Weights*	
Dry Weight (with TRLR125US)	7,013 lbs. (3,181 kg)
Wet Weight (with TRLR125US)	8,424 lbs. (3,821 kg)

Generator can be placed on MQ Trailer Models TRLR125US and TRLR180XF.

NOTICE

Features and Specifications are subject to change without notice.

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DCA125SSIU4F Rev. #8 (06/01/22)




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MQ POWER **DCA125SSIU4F**
Generator

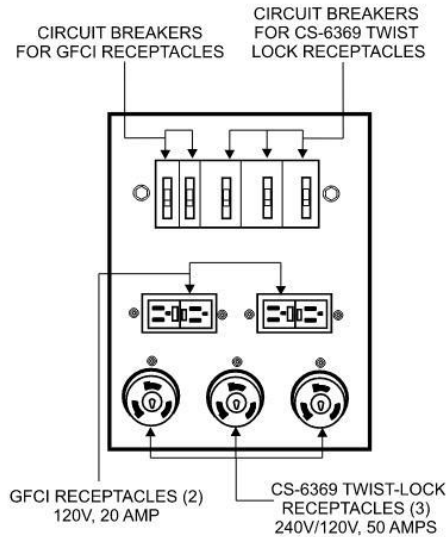
MQ POWER DECIBEL LEVELS

Our soundproof housing allows substantially lower operating noise levels than competitive designs. WhisperWatts are at home on construction sites, in residential neighborhoods, and at hospitals — just about anywhere.

- 90 — Subway / truck traffic
- 80 — Average city traffic
- 70 — Inside car at 60 mph
— WhisperWatt at 23 feet
- 60 — Air conditioner at 20 feet
- 50 — Normal conversation



GENERATOR OUTPUT PANEL



OPTIONAL GENERATOR FEATURES

- **Parallel Controls** — provides the ability to connect multiple generators together into a single power generation system.
- **PowerBalance™** — designed to assist generators when operating under low temperature and/or low load conditions to insure peak performance.
- **Battery Charger** — provides fully automatic and self-adjusting charging to the generator's battery system.
- **Trailer Mounted Package** — meets National Highway Traffic Safety Administration (NHTSA) regulations. Trailer is equipped with electronic or surge brakes with double axle configuration.

OPTIONAL CONTROL FEATURES

- **Audible Alarm** — alerts operator of abnormal conditions.

OPTIONAL FUEL CELL FEATURES

- **Sub-base Fuel Cells (double wall)** — additional fuel cell for extended runtime operation. Contains a leak sensor, low fuel level switch, and a secondary containment tank. UL142 listed.
- 12 hours of minimum run time.
- 24 hours of minimum run time.

OPTIONAL OUTPUT CONNECTIONS

- **Cam-Lok Connectors** — provides quick disconnect alternative to bolt-on connectors.
- **Pin and Sleeve Connectors** — provides industry standard connectors for all voltage requirements.
- **Output Cable** — available in any custom length and size configuration.