



## Recommended Generator Report - C30 D6

Project - Sioux Falls Scalehouse

Comments -

### Project Requirements

<b>Frequency, Hz</b>	: 60.0	<b>Generators Running in Parallel</b>	: 1
<b>Duty</b>	: Standby	<b>Site Altitude, ft(m)</b>	: 361(110)
<b>Voltage</b>	: 120/208, Parallel Wye	<b>Site Temperature, °C</b>	: 25
<b>Phase</b>	: 3	<b>Max. Altr Temp Rise, °C</b>	: 125
<b>Fuel</b>	: Diesel	<b>Project Voltage Distortion Limit, %</b>	: 10
<b>Emissions</b>	: No Preference		

### Calculated Individual Generator Set Load Running and Peak Requirements

<b>Running kW</b>	: 25.1	<b>Max. Step kW</b>	: 45.1 In Step 1	<b>Cumulative Step kW</b>	: 45.1
<b>Running kVA</b>	: 30.9	<b>Max. Step kVA</b>	: 55.6 In Step 1	<b>Cumulative Step kVA</b>	: 55.6
<b>Running PF</b>	: 0.81	<b>Peak kW</b>	: 12.7	<b>Cumulative Peak kW</b>	: 35.8
<b>Running NLL kVA</b>	: 0.6	<b>Peak kVA</b>	: 15.9	<b>Cumulative Peak kVA</b>	: 44.0
<b>Alternator kW</b>	: 25.38			<b>Pct Rated Capacity</b>	: 83.3

### Generator Set Configuration

<b>Alternator</b>	: CA115-S14	<b>Engine</b>	: 4BT3.3-G5
<b>BCode</b>	: BB93	<b>Fuel</b>	: Diesel
<b>Excitation</b>	: EBS	<b>Displacement, cu in. (Litre)</b>	: 199.0(3.3)
<b>Voltage Range</b>	: 208/120V	<b>Cylinders</b>	: 4
<b>Number of Leads</b>	: 12	<b>Altitude Knee, ft(m)</b>	: 10000(3048)
<b>Reconnectable</b>	: Yes	<b>Altitude Slope, % per 985ft(300.2m)</b>	: 3
<b>Full Single Phase Output</b>	: No	<b>Temperature Knee, °F(°C)</b>	: 122(50)
<b>Increased Motor Starting</b>	: No	<b>Temperature Slope, % per 18°F(10.0°C)</b>	: 6
<b>Extended Stack</b>	: No	<b>Emissions</b>	: Tier 3
		<b>Cooling Package</b>	: High Ambient

### Set Performance

### Load Requirements

<b>Running At</b>	: 83.3% Rated Capacity		
<b>Max. Step Voltage Dip, %</b>	: 28	<b>Max. Allowed Step Voltage Dip</b>	: 35 In Step 1
<b>Max. Step Frequency Dip, %</b>	: 8	<b>Max. Allowed Step Frequency Dip</b>	: 10 In Step 1
<b>Peak Voltage Dip, %</b>	: 9	<b>Peak Voltage Dip Limit %</b>	: 35.0
<b>Peak Frequency Dip, %</b>	: 3	<b>Peak Frequency Dip Limit %</b>	: 10
<b>Site Rated Standby kW/kVA</b>	: 30 / 38	<b>Running kW</b>	: 25.1
		<b>Running kVA</b>	: 30.9
<b>Site Rated Max. SkW</b>	: 40	<b>Effective Step kW</b>	: 36.5
<b>Max. SkVA</b>	: 135	<b>Effective Step kVA</b>	: 55.6
<b>Temp Rise at Full Load, °C</b>	: 105	<b>Percent Non-Linear Load</b>	: 2.0
<b>Voltage Distortion</b>	: 0.2	<b>Voltage Distortion Limit</b>	: 10
<b>Site Rated Max Step kW Limit</b>	:	<b>Max Step kW</b>	:

\*Note: Higher temperature rise at full rated load.

\*Note: All generator set power derates are based on open generator sets.



## Loads Summary Report

Project - Sioux Falls Scalehouse

Comments -

### Project Requirements

<b>Frequency, Hz</b>	: 60.0	<b>Generators Running in Parallel</b>	: 1
<b>Duty</b>	: Standby	<b>Site Altitude, ft(m)</b>	: 361(110)
<b>Voltage</b>	: 120/208, Parallel Wye	<b>Site Temperature, °C</b>	: 25
<b>Phase</b>	: 3	<b>Max. Altr Temp Rise, °C</b>	: 125
<b>Fuel</b>	: Diesel	<b>Project Voltage Distortion Limit, %</b>	: 10
<b>Emissions</b>	: No Preference		

## Loads Summary List

\*Note: Detailed Loads and Step Report available below

Step No.	Load Name	Quantity	Running		Starting		Peak		Dip Limits, %		VTHD% Limit
			kW	kVA	kW	kVA	kW	kVA	Vdip	Fdip	
Step01	HVAC	1	5.74	7.17	15.0	18.75	None	None	35.0	10.0	0.0
Step01	Receptacle Loads	1	4.64	5.16	4.64	5.16	None	None	35.0	10.0	0.0
Step01	Scale Loads	1	5.45	6.81	5.45	6.81	None	None	35.0	10.0	0.0
Step01	Lighting	1	0.52	0.55	0.52	0.55	None	None	35.0	10.0	10.0
Step01	Vehicle Barriers	3	0.67	0.92	4.24	5.3	4.24	5.3	35.0	10.0	0.0
Step01	Scale Hut 3	1	6.76	8.45	6.76	8.45	None	None	35.0	10.0	0.0
Step Summary			25.0	31.0	45.0	56.0	12.7	15.9	35.0	10.0	10.0
Project Summary			Running		Max Starting		Cumulative Step		Cumulative Peak		Project VTHD% Limit
			kW	kVA	kW	kVA	kW	kVA	kW	kVA	
			25.1	30.9	45.1	55.6	45.1	55.6	35.8	44.0	

\*Note: Detailed Loads and Step Report available below



## Loads and Steps Detail Report

Project - Sioux Falls Scalehouse

Comments -

### Project Requirements

<b>Frequency, Hz</b>	: 60.0	<b>Generators Running in Parallel</b>	: 1
<b>Duty</b>	: Standby	<b>Site Altitude, ft(m)</b>	: 361(110)
<b>Voltage</b>	: 120/208, Parallel Wye	<b>Site Temperature, °C</b>	: 25
<b>Phase</b>	: 3	<b>Max. Altr Temp Rise, °C</b>	: 125
<b>Fuel</b>	: Diesel	<b>Project Voltage Distortion Limit, %</b>	: 10
<b>Emissions</b>	: No Preference		

### Calculated Individual Generator Set Load Running and Peak Requirements

<b>Running kW</b>	: 25.1	<b>Max. Step kW</b>	: 45.1 In Step 1	<b>Cumulative Step kW</b>	: 45.1
<b>Running kVA</b>	: 30.9	<b>Max. Step kVA</b>	: 55.6 In Step 1	<b>Cumulative Step kVA</b>	: 55.6
<b>Running PF</b>	: 0.81	<b>Peak kW</b>	: 12.7	<b>Cumulative Peak kW</b>	: 35.8
<b>Running NLL kVA</b>	: 0.6	<b>Peak kVA</b>	: 15.9	<b>Cumulative Peak kVA</b>	: 44.0
<b>Alternator kW</b>	: 25.38				

### Step1

#### Calculated Individual Generator Set Step Load Requirements

<b>Running kW</b>	: 25.0	<b>Starting kW</b>	: 45.0	<b>Cumulative Step kW</b>	: 45.0
<b>Running kVA</b>	: 31.0	<b>Starting kVA</b>	: 56.0	<b>Cumulative Step kVA</b>	: 56.0
<b>Running Amps</b>	: 86.0	<b>Starting Non-linear kVA</b>	: 1.0		
<b>Running Non-linear kVA</b>	: 1.0				
<b>Alternator kW</b>	: 25.38				
<b>Voltage Distortion Limit for step</b>	: 10				

<b>HVAC</b>		Three Phase	Quantity	: 1 In this Step
Category	: User Defined			

<b>Running kW</b>	: 5.74	<b>Starting kW</b>	: 15.0	<b>Peak kW</b>	: None
<b>Running kVA</b>	: 7.17	<b>Starting kVA</b>	: 18.75	<b>Peak kVA</b>	: None
<b>Running PF</b>	: 0.8	<b>Starting PF</b>	: 0.8	<b>Cyclic</b>	: No
<b>Running Amps</b>	: 19.94	<b>Max. % Voltage Dip</b>	: 35.0	<b>Max. % Frequency Dip</b>	: 10.0
<b>Alternator kW</b>	: 5.74			<b>Voltage</b>	: 208

<b>Receptacle Loads</b>		Three Phase	Quantity	: 1 In this Step
Category	: General Receptacle			

<b>Running kW</b>	: 4.64	<b>Starting kW</b>	: 4.64	<b>Peak kW</b>	: None
<b>Running kVA</b>	: 5.16	<b>Starting kVA</b>	: 5.16	<b>Peak kVA</b>	: None
<b>Running PF</b>	: 0.9	<b>Starting PF</b>	: 0.9	<b>Cyclic</b>	: No





## Steps and Dips Details Report

Project - Sioux Falls Scalehouse

### Project Requirements

<b>Frequency, Hz</b>	: 60.0	<b>Generators Running in Parallel</b>	: 1
<b>Duty</b>	: Standby	<b>Site Altitude, ft(m)</b>	: 361(110)
<b>Voltage</b>	: 120/208, Parallel Wye	<b>Site Temperature, °C</b>	: 25
<b>Phase</b>	: 3	<b>Max. Altr Temp Rise, °C</b>	: 125
<b>Fuel</b>	: Diesel	<b>Project Voltage Distortion Limit, %</b>	: 10
<b>Emissions</b>	: No Preference		

### Calculated Individual Generator Set Load Running and Peak Requirements

<b>Running kW</b>	: 25.1	<b>Max. Step kW</b>	: 45.1 In Step 1	<b>Cumulative Step kW</b>	: 45.1
<b>Running kVA</b>	: 30.9	<b>Max. Step kVA</b>	: 55.6 In Step 1	<b>Cumulative Step kVA</b>	: 55.6
<b>Running PF</b>	: 0.81	<b>Peak kW</b>	: 12.7	<b>Cumulative Peak kW</b>	: 35.8
<b>Running NLL kVA</b>	: 0.6	<b>Peak kVA</b>	: 15.9	<b>Cumulative Peak kVA</b>	: 44.0
<b>Alternator kW</b>	: 25.38				

### Generator Set Configuration

<b>Model</b>	: C30 D6	<b>Alternator</b>	: CA115-S14
<b>Engine Model</b>	: 4BT3.3-G5	<b>Excitation</b>	: EBS
<b>Fuel</b>	: Diesel		High Ambient

### Step Level Dips Summary

Step #	Voltage Dip Limit (%)	Expected Step Voltage Dip (%)	Voltage Recovery Time (s) **	Frequency Dip Limit (%)	Expected Frequency Dip (%)	Frequency recovery Time (s) **
1	35	28	3.1	10	8	2.6

Note: Please refer to the model Spec. sheet for bandwidths used to report recovery times. For products manufactured in the United Kingdom it may be assumed that recovery times are based on ISO8528-5 G2 class bandwidths. Voltage and frequency recovery times are estimates. Typically, allow five to ten seconds between application of load steps when designing your system.

\*\*Please note that in some cases the voltage and frequency recovery time estimates are not shown in list. This is a result of "dummy" data points temporarily being used to fill data gaps in the GenSize database. Please disregard these blank results.

### Peak Dips Summary

	Limit, %	Expected, %
Peak Voltage Dip	35	9
Peak Frequency Dip	10	3

Peak Dips consider the voltage and frequency dips for cyclic loads

