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Header 3

List View

- General Information
- Contact
- Default Values
- Discount
- Document Information
- Clarification Request

Procurement Folder: 1299222

Procurement Type: Central Master Agreement

Vendor ID: 000000184243

Legal Name: FASTENAL COMPANY

Alias/DBA:

Total Bid: \$544,444.40

Response Date: 11/27/2023

Response Time: 10:03

Responded By User ID: jbonner

First Name: Joseph

Last Name: Bonner

Email: jbonner@fastenal.com

Phone: 3048424025

SO Doc Code: CRFQ

SO Dept: 0803

SO Doc ID: DOT2400000042

Published Date: 11/28/23

Close Date: 11/29/23

Close Time: 13:30

Status: Closed

Solicitation Description: ADDENDUM NO\_3 Portable Traffic Lights, Trailer Mounted

Total of Header Attachments: 3

Total of All Attachments: 3



Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**State of West Virginia  
 Solicitation Response**

**Proc Folder:** 1299222  
**Solicitation Description:** ADDENDUM NO\_3 Portable Traffic Lights, Trailer Mounted  
**Proc Type:** Central Master Agreement

Solicitation Closes	Solicitation Response	Version
2023-11-29 13:30	SR 0803 ESR11272300000002486	1

**VENDOR**  
 000000184243  
 FASTENAL COMPANY

**Solicitation Number:** CRFQ 0803 DOT2400000042  
**Total Bid:** 544444.4000000000232830643653 **Response Date:** 2023-11-27 **Response Time:** 10:03:24  
**Comments:**

**FOR INFORMATION CONTACT THE BUYER**

John W Estep  
 304-558-2566  
 john.w.estep@wv.gov

**Vendor Signature X** **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Trailer Mounted Portable Traffic Lights	10.00000	EA	54444.440000	544444.40

Comm Code	Manufacturer	Specification	Model #
46161504			

**Commodity Line Comments:** VER-MAC TLD-3612 (20 units as 10 sets)  
Vendor listed exceptions/equivalents  
Exceptions:  
3.1.2.1 we are 100% autonomous with 8 Batteries so that s what were going with vs the 16  
3.1.2.2 3 x 85 watt solar panels = 225 we are 100% autonomous in WV with this solar set up. Vs the 400  
Solar specifications will be attached.

**Extended Description:**

Trailer Mounted Portable Traffic Lights

# PVsyst - Simulation report

## Standalone system

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Project: Ver-Mac-Standard Product

Variant: Calculs Génériques

Standalone with back-up generator

System power: 255 Wp

Clarksburg - United States

**Stephane Roy**  
Ver-Mac Inc. (Canada)



**VER-MAC**<sup>®</sup>



# Project: Ver-Mac-Standard Product

## Variant: Calculs Génériques

Ver-Mac Inc. (Canada)

### PVsyst V7.4.2

VCO, Simulation date:  
11/17/23 09:10  
with v7.4.2

### Project summary

<b>Geographical Site</b>		<b>Situation</b>		<b>Project settings</b>	
<b>Clarksburg</b>		Latitude	39.28 °N	Albedo	0.20
United States		Longitude	-80.34 °W		
		Altitude	309 m		
		Time zone	UTC-5		
<b>Meteo data</b>					
Clarksburg					
Meteonorm 8.1 (1991-2005), Sat=35% - Synthetic					

### System summary

<b>Standalone system</b>		<b>Standalone with back-up generator</b>			
<b>PV Field Orientation</b>		<b>User's needs</b>			
Fixed plane		Daily profile			
Tilt/Azimuth	30 / 0 °	Constant over the year			
		Average		0.4 kWh/Day	
<b>System information</b>					
<b>PV Array</b>		<b>Battery pack</b>			
Nb. of modules	3 units	Technology	Lead-acid, sealed, plates		
Pnom total	255 Wp	Nb. of units	8 units		
		Voltage	12 V		
		Capacity	840 Ah		

### Results summary

Useful energy from solar	143.91 kWh/year	Specific production	564 kWh/kWp/year	Perf. Ratio PR	36.72 %
Missing Energy	0.11 kWh/year	Available solar energy	302.92 kWh/year	Solar Fraction SF	99.93 %
Excess (unused)	113.29 kWh/year				

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**General parameters**

**Standalone system**

**PV Field Orientation**

**Orientation**

Fixed plane  
Tilt/Azimuth 30 / 0 °

**User's needs**

Daily profile  
Constant over the year  
Average 0.4 kWh/Day

**Standalone with back-up generator**

**Sheds configuration**

No 3D scene defined

**Models used**

Transposition Perez  
Diffuse Perez, Meteonorm  
Circumsolar separate

Hourly load	0 h	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	11 h	
	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	W
	12 h	13 h	14 h	15 h	16 h	17 h	18 h	19 h	20 h	21 h	22 h	23 h	
	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	W

**PV Array Characteristics**

**PV module**

Manufacturer SOLARLAND CORPORATION  
Model SLP85-12\_Q3451\_2019  
(Custom parameters definition)  
Unit Nom. Power 85 Wp  
Number of PV modules 3 units  
Nominal (STC) 255 Wp  
Modules 3 Strings x 1 In series

**At operating cond. (50°C)**

Pmpp 223 Wp  
U mpp 16 V  
I mpp 14 A

**Controller**

Manufacturer VER-MAC  
Model REG-2009-STD DEFAULT v5  
Technology MPPT converter  
Temp coeff. -5.0 mV/°C/Elem.

**Converter**

Maxi and EURO efficiencies 95.0 / 91.5 %

**Back-up genset**

Manufacturer Back-up generator  
Model 1.5 kW  
Nominal power 1.5 kW  
Effective power 0.2 kW

**Total PV power**

Nominal (STC) 0.255 kWp  
Total 3 modules  
Module area 1.7 m²

**Battery**

Manufacturer Motoma  
Model DSE-SLA-6v210TMF  
Technology Lead-acid, sealed, plates  
Nb. of units 4 in parallel x 2 in series  
Discharging min. SOC 7.1 %  
Stored energy 9.7 kWh

**Battery Pack Characteristics**

Voltage 12 V  
Nominal Capacity 840 Ah (C10)  
Temperature External ambient temperature

**Battery Management control**

Threshold commands as SOC calculation  
Charging SOC = 0.97 / 0.25  
approx. 14.3 / 12.0 V  
Discharging SOC = 0.07 / 0.80  
approx. 11.1 / 12.6 V  
Back-Up Genset Command SOC = 0.07/0.95  
approx. 11.1 / 13.7 V



**PVsyst V7.4.2**

VC0, Simulation date:  
11/17/23 09:10  
with v7.4.2

**Array losses**

<b>Thermal Loss factor</b>		<b>DC wiring losses</b>		<b>Serie Diode Loss</b>	
Module temperature according to irradiance		Global array res.	20 mΩ	Voltage drop	0.7 V
Uc (const)	20.0 W/m²K	Loss Fraction	1.5 % at STC	Loss Fraction	3.8 % at STC
Uv (wind)	0.0 W/m²K/m/s				
<b>Module Quality Loss</b>		<b>Module mismatch losses</b>		<b>Strings Mismatch loss</b>	
Loss Fraction	2.5 %	Loss Fraction	1.0 % at MPP	Loss Fraction	0.1 %
<b>IAM loss factor</b>					
ASHRAE Param.: IAM = 1 - bo (1/cosi -1)					
bo Param.	0.05				





**PVsyst V7.4.2**

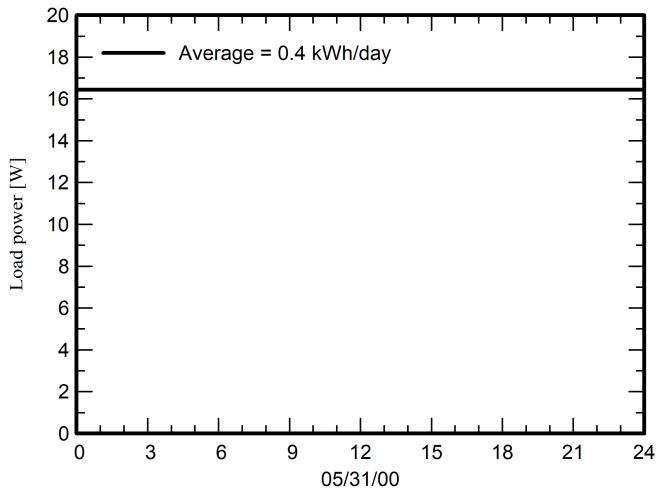
VCO, Simulation date:  
11/17/23 09:10  
with v7.4.2

**Detailed User's needs**

Daily profile, Constant over the year, average = 0.4 kWh/day

Hourly load	0 h	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	11 h	W
	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	W
	12 h	13 h	14 h	15 h	16 h	17 h	18 h	19 h	20 h	21 h	22 h	23 h	W
	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	16.44	W

**Daily profile**





# Project: Ver-Mac-Standard Product

Variant: Calculs Génériques

## PVsyst V7.4.2

VCO, Simulation date:  
11/17/23 09:10  
with v7.4.2

Ver-Mac Inc. (Canada)

### Main results

#### System Production

Useful energy from solar 143.91 kWh/year  
Available solar energy 302.92 kWh/year  
Excess (unused) 113.29 kWh/year

Perf. Ratio PR 36.72 %  
Solar Fraction SF 99.93 %

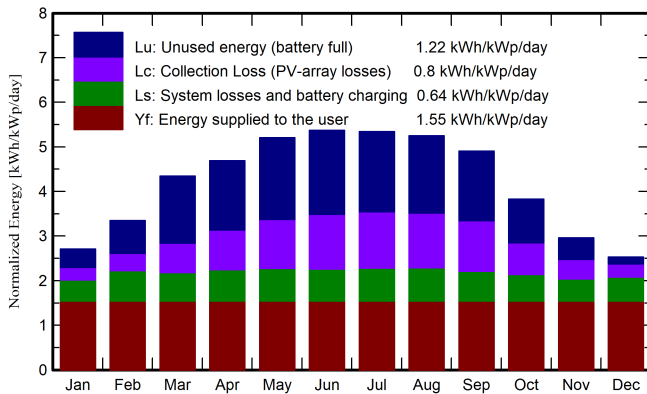
#### Back-Up energy from generator

Back-Up energy 0.00 kWh/year  
Fuel Consumption 0 liter/year

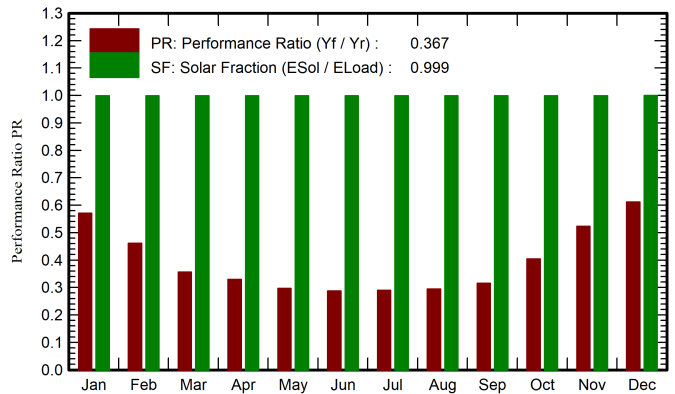
#### Battery aging (State of Wear)

Cycles SOW 95.6 %  
Static SOW 80.1 %

Normalized productions (per installed kWp)



Performance Ratio PR



### Balances and main results

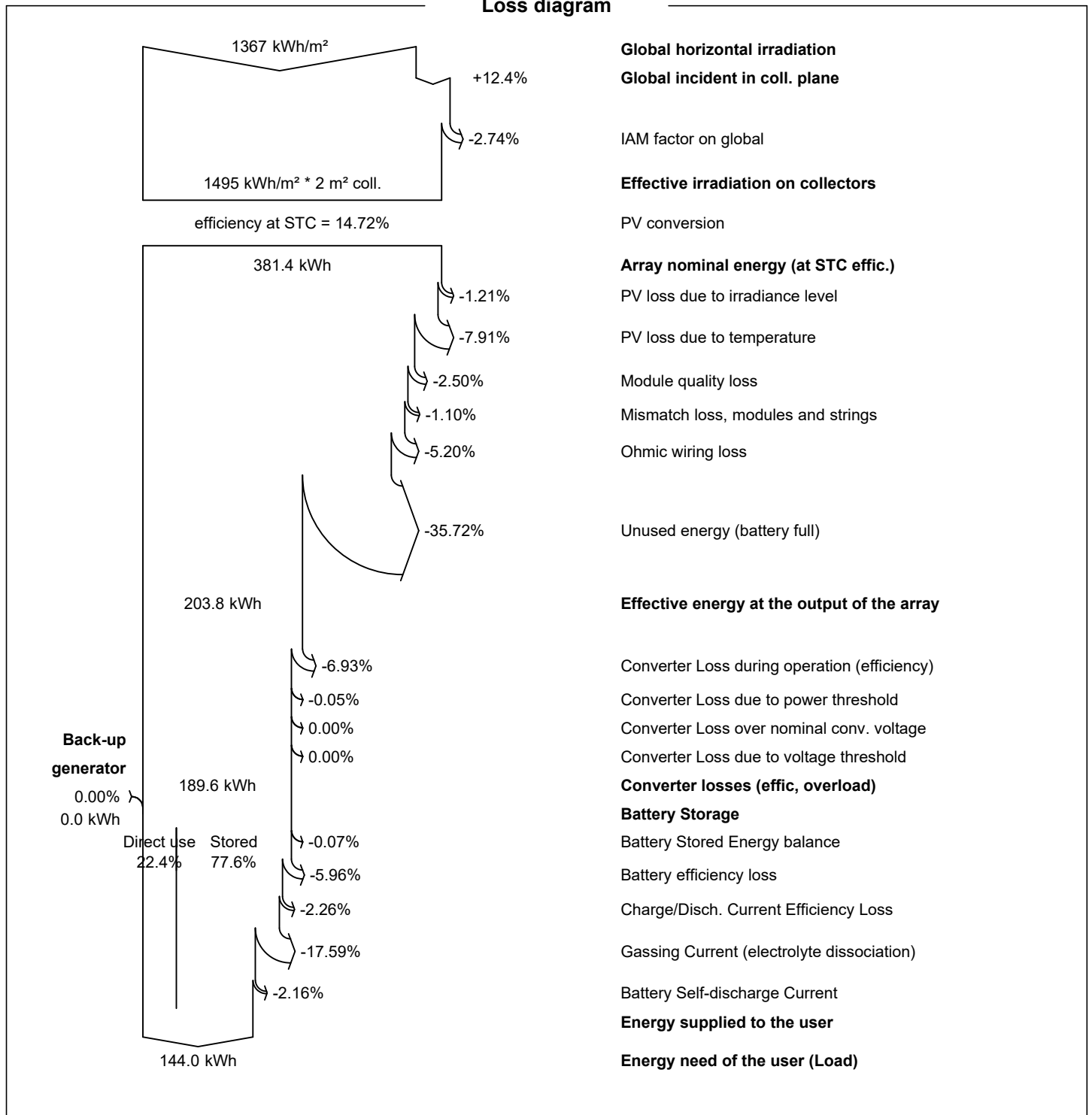
	GlobHor kWh/m <sup>2</sup>	GlobEff kWh/m <sup>2</sup>	E_Avail kWh	EUunused kWh	E_User kWh	E_Load kWh	SolFrac ratio
January	54.4	81.7	18.07	3.22	12.22	12.23	0.999
February	70.1	91.4	20.06	5.25	11.04	11.05	0.999
March	113.1	131.3	27.94	11.88	12.22	12.23	0.999
April	133.3	136.8	27.86	11.85	11.83	11.84	0.999
May	166.2	156.6	31.23	14.44	12.22	12.23	0.999
June	170.9	156.1	30.45	14.35	11.83	11.84	0.999
July	171.2	160.5	30.97	14.15	12.22	12.23	0.999
August	158.0	158.1	30.54	13.67	12.22	12.23	0.999
September	125.9	143.5	27.61	11.93	11.83	11.84	0.999
October	93.7	115.8	23.56	7.74	12.22	12.23	0.999
November	60.6	86.5	18.11	3.63	11.83	11.84	0.999
December	49.7	76.3	16.51	1.19	12.23	12.23	1.000
<b>Year</b>	<b>1367.1</b>	<b>1494.6</b>	<b>302.92</b>	<b>113.29</b>	<b>143.91</b>	<b>144.01</b>	<b>0.999</b>

#### Legends

GlobHor Global horizontal irradiation  
 GlobEff Effective Global, corr. for IAM and shadings  
 E\_Avail Available Solar Energy  
 EUunused Unused energy (battery full)  
 E\_User Energy supplied to the user  
 E\_Load Energy need of the user (Load)  
 SolFrac Solar fraction (EUunused / ELoad)



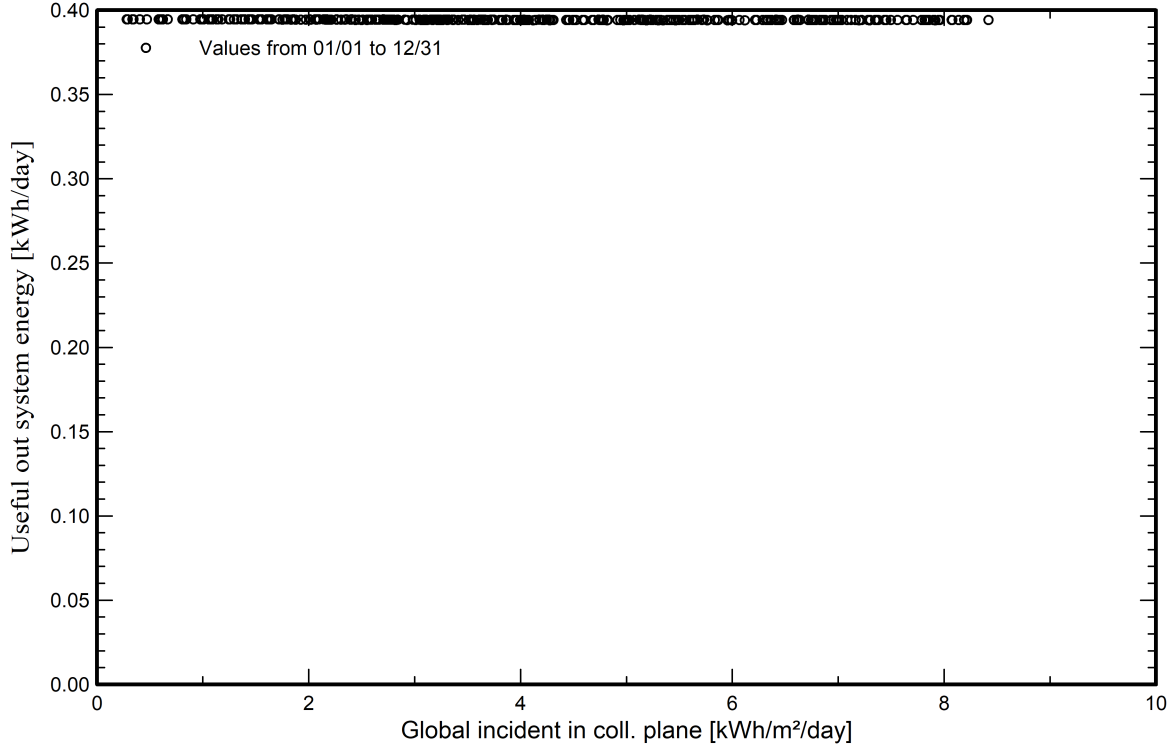
**Loss diagram**



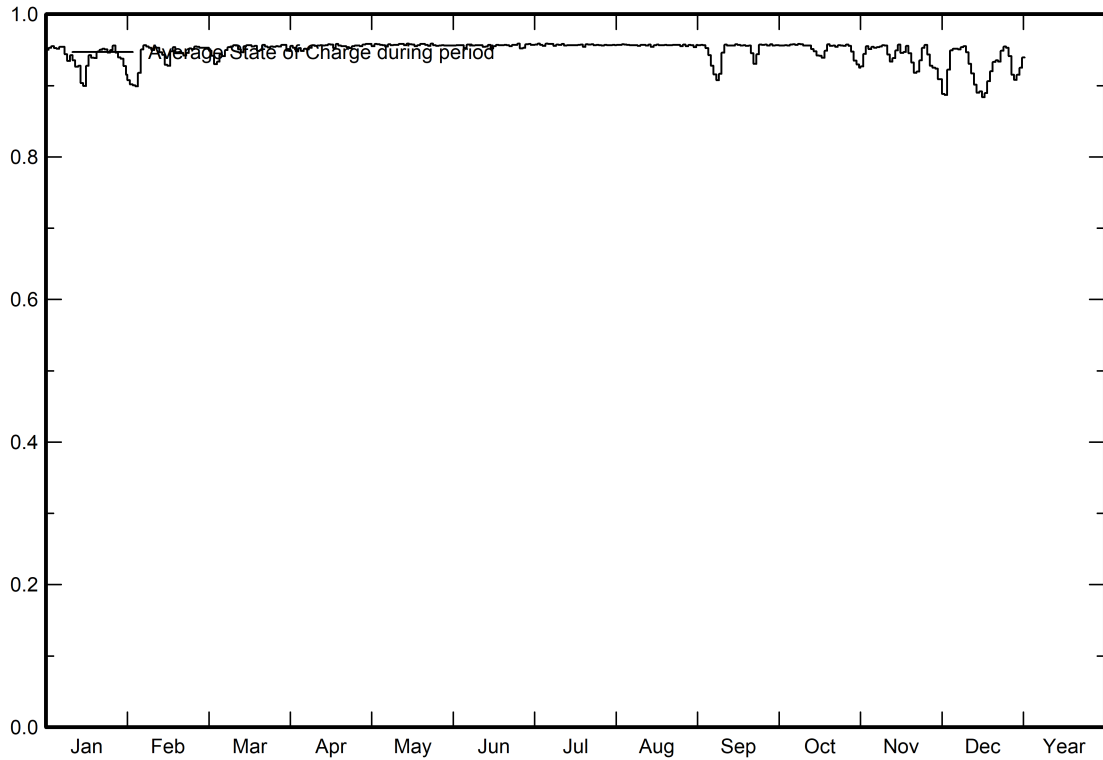


Predef. graphs

Daily Input/Output diagram



State of charge daily distribution



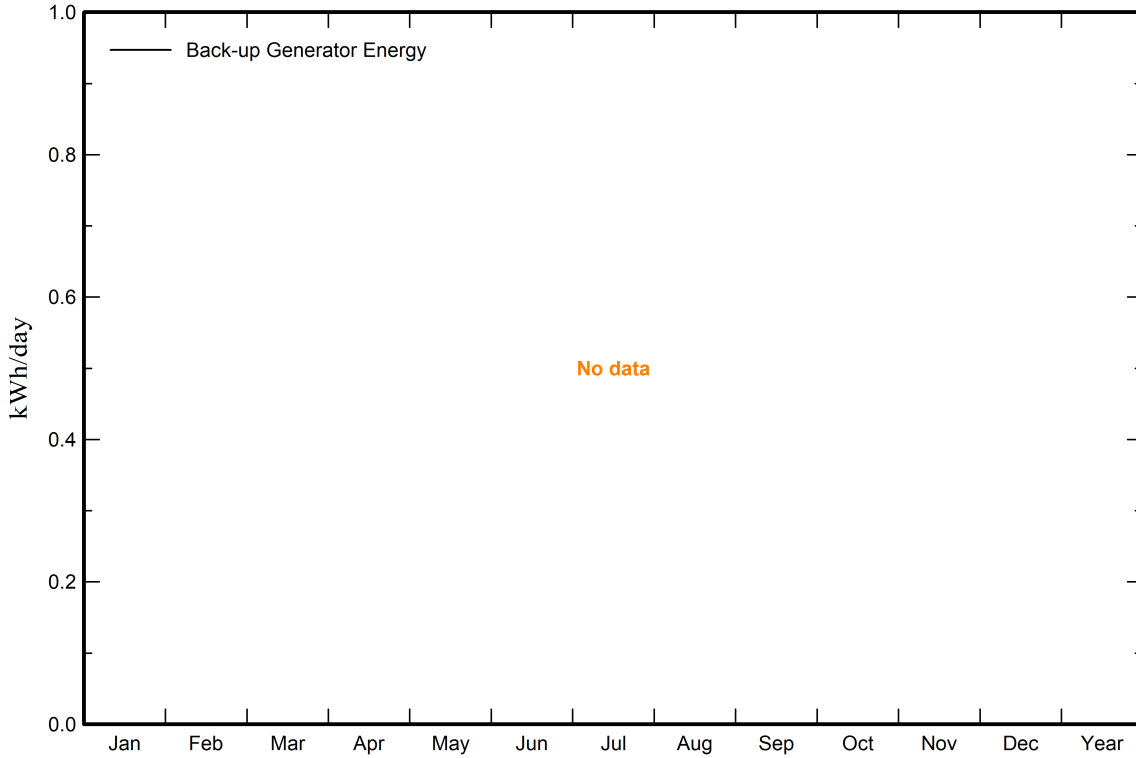


PVsyst V7.4.2

VCO, Simulation date:  
11/17/23 09:10  
with v7.4.2

Predef. graphs

Generator



**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CRFQ DOT240000042**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

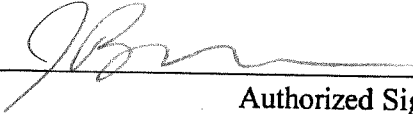
**Addendum Numbers Received:**

(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2            | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Fastenal  
Company

  
Authorized Signature

27 NOV 23  
Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CRFQ DOT240000042**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input type="checkbox"/> Addendum No. 1            | <input type="checkbox"/> Addendum No. 6  |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

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Fastenal  
Company

[Signature]  
Authorized Signature

27 NOV 23  
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

D.O.T. EQUIPMENT DIVISION  
83 Brushy Fork Crossing  
BUCKHANNON, WV 26201-0610 USA  
Phone: 304-473-5307  
Fax: 304-473-4204  
Contract #: CMA 0212 0212 MRO18-8497  
ATTN: John Estep

The store serving you is:  
Fastenal Company  
2851 Benedum Dr  
BRIDGEPORT, WV 26330 USA  
Email: WVG1@stores.fastenal.com

Account #: BHWV0068      PO #: Portable Traffic Lights  
Quote #: 23477      Job #:

Due Date:  
Expiration Date: 12/22/2023

<u>Part #</u>	<u>Customer Part #</u>	<u>Description</u>	<u>Quantity</u>	<u>Price/EA</u>	<u>Extended Price</u>
14871-02845		TLD-3612 set lights	10	\$54,444.4400	\$544,444.40
			<b>TOTAL (USD):</b>		<b>\$544,444.40</b>

Thank you!



\*Shipping & Handling charges are subject to change.