

# Generator Fuel Runtime Calculator

Estimates generator fuel burn and runtime from rated output, average load, usable tank volume, and a documented fuel-rate basis.

Generated October 10, 2026

<https://www.elecatrix.com/solar-backup-power/generator-fuel-runtime-calculator/>

## Inputs

| Input                    | Value         | Unit    |
|--------------------------|---------------|---------|
| Generator or asset label | Generator G-1 |         |
| Generator rating         | 100           | kW      |
| Average load             | 50            | %       |
| Usable fuel in tank      | 50            | gal     |
| Fuel rate                | 0.08          | gal/kWh |
| Fuel-rate reference load | 50            | %       |

## Results

| Result               | Value | Unit  |
|----------------------|-------|-------|
| Average load         | 50    | kW    |
| Fuel burn            | 4     | gal/h |
| Estimated runtime    | 12.5  | h     |
| Fuel-rate basis load | 50    | %     |

## Status

| Status                 | Value                                | Unit |
|------------------------|--------------------------------------|------|
| Fuel-rate basis review | Fuel-rate basis matches entered load |      |

## Calculation details

| Detail            | Value                                                                                                                            | Unit |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------|------|
| Calculation basis | Fuel burn is estimated from the entered generator load and an entered fuel rate in gallons per kWh at the stated reference load. |      |

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Selection boundary

Runtime estimate only; no generator model, nonlinear fuel curve, altitude, temperature, emissions, transfer equipment, fuel-system, grounding, or code result is made.

## Formulas

$$P_{avg} = P_{rated} \times \frac{L_{avg}}{100}$$

$$r_{fuel} = P_{avg} \times e_{fuel}$$

$$t_{runtime} = \frac{G_{usable}}{r_{fuel}}$$

## Warnings and limitations

This is a fuel-rate estimate. Real fuel curves vary with load, generator model, fuel type, altitude, temperature, maintenance, and operating conditions. Verify the exact manufacturer data and fuel-system limits.