

This document explains the term “nominal capacity” in terms of nominal battery capacity, Ah (Amps · Hour).

## Definitions:

### FIM rule:

2.7.9.5 Battery: The Battery may be replaced. If replaced, its nominal capacity must be equal to or higher than the Homologated type.

### Ah:

An amp hour (Ah) is a rating usually found on deep cycle batteries. If a battery is rated at 6 amp hours it should deliver 1 amps for 6 hours, 2 amps for 3 hours, 6 amps for 1 hour etc.

### Nominal capacity:

The nominal capacity of a battery is rated as: How many amps do you need to discharge the battery to its maximum discharge voltage in exactly one hour.

As explained in the definitions a battery with a nominal capacity of 6 Ah should deliver at least 6 amps for one hour.

The confusion starts as lead/Acid battery manufacturers uses 20 hour ratings on their label and not the nominal capacity. This means that for example a 6 Ah battery can be discharged with a load of 0,3 amps for 20 hour. So the 20 hour capacity is  $20(\text{hour}) * 0,3 (\text{amps}) = 6 \text{ Ah}$ .

If you discharge the same 6 Ah battery with 2 Amps you can only discharge it for about 40 minutes:  
 $\text{capacity (Ah)} = (40 \text{ min.} / 60 \text{ min.}) * 2 \text{ Amps} = 1.33 \text{ Ah}$

Nominal capacity Yuasa YTZ7S battery: (discharge time at 6 Amps discharge current = 11 minutes)  
 $\text{capacity (Ah)} = (11 \text{ min.} / 60 \text{ min.}) * 6 \text{ Amps} = 1,1 \text{ Ah}$

### Battery used for testing:

Brand: Yuasa

Type: YTZ7S

Capacity: 6

Test conditions:

Minimum discharge Voltage: 12 Volt

Maximum charge current: 0.6 Amps

Maximum charge voltage: 13.8 Volt

Ambient temperature: 20 °C