

# Measuring Temperature

## What is temperature

Temperature tells you how hot or cold objects, liquids or gasses are and is expressed in degree Celsius (°C) or in degree Fahrenheit (°F).

## Why is measuring temperature important

Temperature measurements are important in the rice postproduction management. Examples for temperature measurements are:

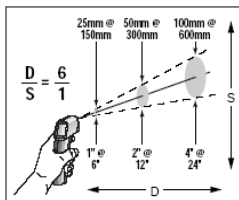
- Monitoring grain temperature in grain bulks
- Monitoring grain temperature (sun drying) or air temperature (mechanical dryers)
- Temperatures of the milled rice in rice mills for optimum rice mill performance
- Measuring temperature (and relative humidity) in storage facilities

## How to measure temperature

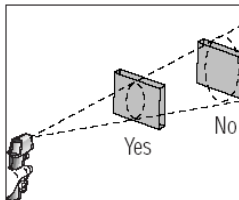
### Infrared thermometer



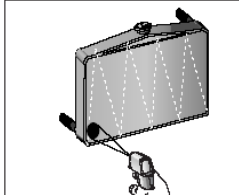
For non-contact measurements. Some are equipped with a laser for aiming purpose. Easy to use but for accurate readings consider the following:



The area measured is larger than the laser spot. The Distance / Spot ratio (D/S) can be used to estimate the measured area.



The measured area increases with distance. Make sure that the area measured is smaller than the area you want to measure.



To measure large areas scan the area that you want to measure and then take average readings.

- Cover reflective areas with black tape before measuring
- Don't measure through glass.
- Dust, smoke and steam can affect readings.
- Don't point the laser at someone's eye.

Some critical temperatures in postproduction of rice

Purpose	Temperature, °C
Drying of seeds	< 43
Drying of grain, flat bed dryer	< 43
Drying of grain, recirculating dryer	< 55
Long term storage in cold room	8

### Glass thermometer



These are sensitive instruments, treat with care. Avoid tapping against hard surfaces and

extreme temperature changes.

### Dial thermometer



For better readability and more rugged design use a dial thermometer.

## Calibration

Calibrate the thermometers against known temperatures, for example:

0°C = ice point of water

100°C = steam point of water

## Conversions

Form °F to °C	Form °C to °F
$t[°C] = (t[°F] - 32) \cdot \frac{5}{9}$	$t[°F] = t[°C] \cdot \frac{9}{5} + 32$

### For more information contact

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