

# Wędzona dwunastka

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **62**
- SRM **4.4**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **22.2 liter(s)**

## Steps

- Temp **64 C**, Time **60 min**
- Temp **68 C**, Time **10 min**
- Temp **73 C**, Time **10 min**

## Mash step by step

- Heat up **16.6 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **10 min** at **68C**
- Keep mash **10 min** at **73C**
- Sparge using **18 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Steinbach Karamel Pils	5 kg (90.1%)	79 %	6
Grain	cara clair	0.55 kg (9.9%)	80 %	5

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	30 g	60 min	15.5 %
Boil	Columbus/Tomahawk/Zeus	30 g	10 min	15.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
34/70	Lager	Slant	200 ml	fermentis