

# Pilneński Karmel

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- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **23**
- SRM **12.7**

## Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.9 liter(s)**
- Total mash volume **21.2 liter(s)**

## Steps

- Temp **52 C**, Time **10 min**
- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **15.9 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **21.1 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	5 kg (89.3%)	80 %	4
Grain	Strzegom Karmel 600	0.3 kg (5.4%)	68 %	601
Adjunct	Płatki owsiane	0.3 kg (5.4%)	85 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Merkur	10 g	60 min	14 %
Boil	Merkur	10 g	20 min	14 %
Boil	Merkur	10 g	5 min	14 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safbrew S-33	Ale	Dry	11.5 g	Safbrew