

# Bitterek Puławski

- Gravity **10 BLG**
- ABV **4 %**
- IBU **20**
- SRM **14.5**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

## Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.4 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 **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

## Steps

- Temp **65 C**, Time **90 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **10 min**
- Temp **100 C**, Time **60 min**

## Mash step by step

- Heat up **17.5 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **90 min** at **65C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Keep mash **60 min** at **100C**
- Sparge using **19.2 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale Zero	3 kg (60%)	--- %	5
Grain	Pale Cookie Viking	1 kg (20%)	--- %	30
Grain	Caramel Aromatic Viking	1 kg (20%)	--- %	200

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Puławski	30 g	30 min	8.9 %
Dry Hop	Puławski	20 g	3 day(s)	8.9 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Danstar - Windsor Ale	Ale	Dry	10 g	Danstar