

## test

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **23**
- SRM **26.3**
- Style **Brown Porter**

### Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.2 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 **16.8 liter(s)**
- Total mash volume **22.4 liter(s)**

### Steps

- Temp **55 C**, Time **5 min**
- Temp **62 C**, Time **40 min**
- Temp **72 C**, Time **15 min**
- Temp **77 C**, Time **0 min**

### Mash step by step

- Heat up **16.8 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **5 min** at **55C**
- Keep mash **40 min** at **62C**
- Keep mash **15 min** at **72C**
- Keep mash **0 min** at **77C**
- Sparge using **17.8 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Bohemian Pilsner Malt	4.2 kg (75%)	81 %	4
Grain	Monachijski	0.8 kg (14.3%)	80 %	16
Grain	Strzegom Karmel 150	0.15 kg (2.7%)	75 %	150
Grain	Jęczmień palony	0.1 kg (1.8%)	55 %	985
Grain	Strzegom Czekoladowy ciemny	0.1 kg (1.8%)	68 %	1200
Grain	Carafa II	0.25 kg (4.5%)	70 %	1100

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	20 g	60 min	10 %
Boil	Lublin (Lubelski)	20 g	15 min	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
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US-05	Ale	Dry	11.5 g	---
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