

## porter

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **29**
- SRM **24**
- Style **Robust Porter**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

### Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **12.9 liter(s)**
- Total mash volume **18 liter(s)**

### Steps

- Temp **52 C**, Time **5 min**
- Temp **63 C**, Time **50 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **12.9 liter(s)** of strike water to **58.4C**
- Add grains
- Keep mash **5 min** at **52C**
- Keep mash **50 min** at **63C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **18.7 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	4 kg (77.7%)	85 %	7
Grain	Fawcett - Pale Chocolate	0.25 kg (4.9%)	71 %	600
Grain	Monachijski	0.4 kg (7.8%)	80 %	16
Grain	Briess - Chocolate Malt	0.25 kg (4.9%)	60 %	690
Grain	Weyermann Specjal W	0.25 kg (4.9%)	68 %	300

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Warrior	15 g	60 min	15.5 %
Boil	East Kent Goldings	20 g	10 min	5.1 %
Boil	East Kent Goldings	20 g	5 min	5.1 %

### Yeasts

Name	Type	Form	Amount	Laboratory
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FM13 Irlandzkie Ciemności	Ale	Slant	200 ml	Fermentum Mobile
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