

## #15 porter angielski

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- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **33**
- SRM **21.8**
- Style **Brown Porter**

### Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **10.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **12.7 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **7.5 liter(s)**
- Total mash volume **10 liter(s)**

### Steps

- Temp **68 C**, Time **60 min**
- Temp **78 C**, Time **10 min**
- Temp **100 C**, Time **60 min**

### Mash step by step

- Heat up **7.5 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **78C**
- Keep mash **60 min** at **100C**
- Sparge using **7.7 liter(s)** of **76C** water or to achieve **12.7 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	2.2 kg (88%)	80 %	5
Grain	Strzegom Karmel 300	0.2 kg (8%)	70 %	299
Grain	Black Barley (Roast Barley)	0.05 kg (2%)	55 %	985
Grain	Strzegom Czekoladowy ciemny	0.05 kg (2%)	68 %	1200

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	10 g	60 min	13.5 %
Boil	Fuggles	15 g	5 min	4.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale