

## #32 Bitter

- Gravity **13.8 BLG**
- ABV **5.7 %**
- IBU **18**
- SRM **8.2**

### 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 **30.3 liter(s)**

### Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **23 liter(s)**
- Total mash volume **30.6 liter(s)**

### Steps

- Temp **65 C**, Time **50 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **23 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **50 min** at **65C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **15 liter(s)** of **76C** water or to achieve **30.3 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	6.5 kg (85%)	80 %	5
Grain	Caramunich® typ I	0.75 kg (9.8%)	73 %	80
Grain	Weyermann - Carapils	0.4 kg (5.2%)	78 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Willamette	20 g	60 min	6 %
Boil	Willamette	30 g	15 min	6 %
Boil	Willamette	50 g	0 min	6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
London Ale	Ale	Slant	170 ml	---

### Notes

- Data:  
OG:

uwagi:  
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