

## Bitter II

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- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **31**
- SRM **7.3**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

### 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 **12 %/h**
- Boil size **26.9 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **18.9 liter(s)**
- Total mash volume **24.3 liter(s)**

### Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**

### Mash step by step

- Heat up **18.9 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **13.4 liter(s)** of **76C** water or to achieve **26.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	4.5 kg (83.3%)	85 %	7
Grain	Carahell	0.3 kg (5.6%)	77 %	26
Grain	Weyermann - Carawheat	0.3 kg (5.6%)	77 %	97
Grain	Weyermann - Acidulated Malt	0.3 kg (5.6%)	80 %	6

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Challenger	30 g	60 min	5.8 %
Aroma (end of boil)	Challenger	30 g	25 min	5.8 %
Aroma (end of boil)	Challenger	40 g	0 min	5.8 %

### Yeasts

Name	Type	Form	Amount	Laboratory
WLP013 - London Ale Yeast	Ale	Liquid	1000 ml	White Labs

### Extras

Type	Name	Amount	Use for	Time
Fining	whirflock	1 g	Boil	5 min