

## BITTER 3

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- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **42**
- SRM **7.3**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

### Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **28.1 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.9 liter(s)**
- Total mash volume **22.6 liter(s)**

### Steps

- Temp **64 C**, Time **60 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **16.9 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **5 min** at **76C**
- Sparge using **16.9 liter(s)** of **76C** water or to achieve **28.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Castle Malting-Maris Otter	5 kg (88.5%)	80 %	6
Grain	Simpsons - Amber Malt	0.3 kg (5.3%)	69 %	65
Grain	Castle Malting - Biscuit malt	0.25 kg (4.4%)	77 %	45
Grain	Simpsons - Crystal Light	0.1 kg (1.8%)	69 %	105

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	East Kent Goldings (UK)	40 g	60 min	6.3 %
Boil	East Kent Goldings (UK)	30 g	20 min	6.3 %
Boil	East Kent Goldings (UK)	30 g	7 min	6.3 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Lallemand-LalBrew Windsor Ale	Ale	Dry	11 g	---

FERMENTACJA START 19°C BEZ CIŚNIENIA 2 DNI POTEM DO 23°C- 5 PSI

### Extras

Type	Name	Amount	Use for	Time
Fining	whirlfloc tabletki	1.5 g	Boil	10 min
Other	pożywka Servomyces Lallemand	0.2 g	Boil	10 min
Flavor	trawa cytrynowa	15 g	Boil	10 min

### Notes

- Woda RO modyfikowana do wartości w PPM  
Ca-100  
Mg-20  
Na-30  
Cl-85  
S04-215  
HCO3-60  
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