

Bitter

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **30**
- SRM **8.1**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **27 liter(s)**
- Trub loss **5 %**
- Size with trub loss **28.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **32.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.2 liter(s)**
- Total mash volume **22.9 liter(s)**

Steps

- Temp **55 C**, Time **1 min**
- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **17.2 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **1 min** at **55C**
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **21.2 liter(s)** of **76C** water or to achieve **32.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	5 kg (87.3%)	85 %	6
Grain	Weyermann pszeniczny jasny	0.2 kg (3.5%)	80 %	4
Grain	Caramunich® typ I	0.5 kg (8.7%)	73 %	90
Grain	Weyermann - Carafa I	0.03 kg (0.5%)	70 %	900

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Challenger	30 g	70 min	5.8 %
Boil	East Kent Goldings	30 g	30 min	5.4 %
Boil	East Kent Goldings	15 g	15 min	5.4 %
Dry Hop	Challenger	20 g	7 day(s)	5.8 %

Yeasts

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