

## xmas beer

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **31**
- SRM **30.6**
- Style **Schwarzbier**

### 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 **62 C**, Time **30 min**
- Temp **73 C**, Time **30 min**
- Temp **76 C**, Time **10 min**

### Mash step by step

- Heat up **7.5 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **30 min** at **62C**
- Keep mash **30 min** at **73C**
- Keep mash **10 min** at **76C**
- 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	1.1 kg (44.2%)	80 %	5
Grain	Barley, Flaked	0.5 kg (20.1%)	70 %	4
Grain	Płatki owsiane	0.4 kg (16.1%)	85 %	3
Grain	Castle Cafe	0.25 kg (10%)	75.5 %	500
Grain	castle Malting biscuit malt	0.1 kg (4%)	79 %	50
Grain	Carafa II	0.09 kg (3.6%)	70 %	1100
Grain	Jęczmień palony weyermann	0.05 kg (2%)	55 %	1200

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Izabella	15 g	60 min	5.8 %
Boil	East Kent Goldings	15 g	40 min	4.1 %

### Yeasts

Name	Type	Form	Amount	Laboratory
b46	Wheat	Dry	11 g	---