

Bitter

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **33**
- SRM **10.8**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **1 %**
- Size with trub loss **22.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **20 %/h**
- Boil size **29.3 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.7 liter(s) / kg**
- Mash size **15.9 liter(s)**
- Total mash volume **20.2 liter(s)**

Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **15 min**

Mash step by step

- Heat up **15.9 liter(s)** of strike water to **74.5C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **15 min** at **76C**
- Sparge using **17.7 liter(s)** of **76C** water or to achieve **29.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3.5 kg (81.4%)	80 %	5
Grain	Biscuit Malt	0.3 kg (7%)	79 %	50
Grain	Caraaroma	0.25 kg (5.8%)	78 %	400
Grain	Weyermann - Carapils	0.25 kg (5.8%)	78 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	30 g	60 min	10 %
Whirlpool	East Kent Goldings	100 g	---	5.1 %

Extras

Type	Name	Amount	Use for	Time
Water Agent	Gips	4 g	Mash	---
Water Agent	kwask mlekowy	4 g	Mash	---
Water Agent	kwask mlekowy	2 g	Mash	---