

## #21 I

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **89**
- SRM **4.6**

### Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **13.2 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9 liter(s)**
- Total mash volume **12 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**

### Mash step by step

- Heat up **9 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **7.2 liter(s)** of **76C** water or to achieve **13.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	2.2 kg (73.3%)	80 %	5
Grain	Viking Wheat Malt	0.6 kg (20%)	83 %	5
Grain	Weyermann - Rye Malt	0.2 kg (6.7%)	85 %	7

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	25 g	55 min	12.1 %
Whirlpool	Amarillo	30 g	40 min	9.5 %
Whirlpool	Cascade	20 g	40 min	6 %
Dry Hop	Amarillo	25 g	2 day(s)	9.5 %
Dry Hop	Cascade	25 g	2 day(s)	6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	6 g	Fermentis