

## #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  |