

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **46**
- SRM **4.6**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

### Steps

- Temp **60 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **0 min**

### Mash step by step

- Heat up **15 liter(s)** of strike water to **66.7C**
- Add grains
- Keep mash **30 min** at **60C**
- Keep mash **30 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **15.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

| Type  | Name        | Amount      | Yield | EBC |
|-------|-------------|-------------|-------|-----|
| Grain | MARIS OTTER | 5 kg (100%) | 80 %  | 6   |

### Hops

| Use for             | Name       | Amount | Time   | Alpha acid |
|---------------------|------------|--------|--------|------------|
| Boil                | Citra      | 5 g    | 30 min | 13 %       |
| Boil                | Centennial | 20 g   | 20 min | 10.5 %     |
| Aroma (end of boil) | Cascade    | 7 g    | 20 min | 6 %        |
| Boil                | citra      | 28 g   | 20 min | 13 %       |
| Boil                | Centennial | 7 g    | 0 min  | 10.5 %     |

### Yeasts

| Name  | Type | Form | Amount | Laboratory |
|-------|------|------|--------|------------|
| us 05 | Ale  | Dry  | 11 g   | ---        |