

BITTER

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **27**
- SRM **9.3**
- Style **Standard/Ordinary Bitter**

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 **13.4 liter(s)**
- Total mash volume **17.8 liter(s)**

Steps

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

Mash step by step

- Heat up **13.4 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Sparge using **16.4 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|---------|----------------------|----------------|-------|-----|
| Grain | Viking Pale Ale malt | 4 kg (87.9%) | 80 % | 5 |
| Grain | Karmelowy 150 | 0.2 kg (4.4%) | 75 % | 150 |
| Grain | Jęczmień palony | 0.05 kg (1.1%) | 55 % | 985 |
| Grain | słód cokie | 0.2 kg (4.4%) | --- % | --- |
| Adjunct | owies | 0.1 kg (2.2%) | --- % | --- |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|------------|--------|--------|------------|
| Boil | Challenger | 30 g | 60 min | 7.4 % |
| Boil | Fuggles | 10 g | 5 min | 5.4 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|--------|--------|------------|
| fm | Ale | Liquid | 30 ml | --- |