

# fes

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **37**
- SRM **44.3**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.1 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21 liter(s)**
- Total mash volume **28 liter(s)**

## Steps

- Temp **64 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **21 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **13.1 liter(s)** of **76C** water or to achieve **27.1 liter(s)** of wort

## Fermentables

| Type  | Name                        | Amount         | Yield | EBC  |
|-------|-----------------------------|----------------|-------|------|
| Grain | Viking Pale Ale malt        | 5 kg (71.4%)   | 80 %  | 5    |
| Grain | Płatki owsiane              | 0.5 kg (7.1%)  | 60 %  | 3    |
| Grain | Jęczmień palony             | 0.25 kg (3.6%) | 55 %  | 985  |
| Grain | Strzegom pszenica prażona   | 0.25 kg (3.6%) | 70 %  | 1000 |
| Grain | Strzegom Czekoladowy ciemny | 0.25 kg (3.6%) | 68 %  | 1200 |
| Grain | Carafa III                  | 0.25 kg (3.6%) | 70 %  | 1034 |
| Grain | Carahell                    | 0.5 kg (7.1%)  | 77 %  | 26   |

## Hops

| Use for | Name              | Amount | Time   | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil    | Lublin (Lubelski) | 100 g  | 60 min | 4 %        |

## Yeasts

| Name         | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safale US-05 | Ale  | Dry  | 11 g   | Fermentis  |