

# FES

---

- Gravity **17.5 BLG**
- ABV **7.5 %**
- IBU **48**
- SRM **40.1**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **10 %**
- Size with trub loss **11 liter(s)**
- Boil time **80 min**
- Evaporation rate **10 %/h**
- Boil size **13.6 liter(s)**

## Mash information

- Mash efficiency **73 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16 liter(s)**

## Steps

- Temp **63 C**, Time **60 min**
- Temp **78 C**, Time **1 min**

## Mash step by step

- Heat up **12 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **60 min** at **63C**
- Keep mash **1 min** at **78C**
- Sparge using **5.6 liter(s)** of **76C** water or to achieve **13.6 liter(s)** of wort

## Fermentables

| Type  | Name                      | Amount       | Yield | EBC |
|-------|---------------------------|--------------|-------|-----|
| Grain | Viking Pale Ale malt      | 2.8 kg (70%) | 80 %  | 3   |
| Grain | Oats, Flaked              | 0.4 kg (10%) | 80 %  | 2   |
| Grain | Fawcett - Pale Chocolate  | 0.4 kg (10%) | 71 %  | 600 |
| Grain | Weyermann - Chocolate Rye | 0.2 kg (5%)  | 20 %  | 650 |
| Grain | Caraaroma                 | 0.2 kg (5%)  | 78 %  | 400 |

## Hops

| Use for | Name  | Amount | Time   | Alpha acid |
|---------|-------|--------|--------|------------|
| Boil    | lunga | 25 g   | 60 min | 11 %       |

## Yeasts

| Name                  | Type | Form   | Amount | Laboratory  |
|-----------------------|------|--------|--------|-------------|
| Wyeast - American Ale | Ale  | Liquid | 100 ml | Wyeast Labs |