

## FES #2

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- Gravity **16.4 BLG**
- ABV **6.9 %**
- IBU **51**
- SRM **38.7**
- Style **Foreign Extra Stout**

### 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 **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **20.7 liter(s)**
- Total mash volume **27.6 liter(s)**

### Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **20 min**

### Mash step by step

- Heat up **20.7 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **20 min** at **72C**
- Sparge using **11.5 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

| Type  | Name                      | Amount        | Yield | EBC  |
|-------|---------------------------|---------------|-------|------|
| Grain | Weyermann - Pale Ale Malt | 6 kg (87%)    | 85 %  | 7    |
| Grain | Carafa                    | 0.3 kg (4.3%) | 70 %  | 664  |
| Grain | Jęczmień palony           | 0.3 kg (4.3%) | 55 %  | 985  |
| Grain | Strzegom pszenica prażona | 0.3 kg (4.3%) | 70 %  | 1000 |

### Hops

| Use for | Name       | Amount | Time   | Alpha acid |
|---------|------------|--------|--------|------------|
| Boil    | Challenger | 50 g   | 60 min | 6.1 %      |
| Boil    | Challenger | 50 g   | 30 min | 6.1 %      |

### Yeasts

| Name                      | Type | Form   | Amount | Laboratory       |
|---------------------------|------|--------|--------|------------------|
| FM13 Irlandzkie Ciemności | Ale  | Liquid | 30 ml  | Fermentum Mobile |