

FES #2

- 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 |