

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