

FES I

- Gravity **16.8 BLG**
- ABV **7.1 %**
- IBU **42**
- SRM **39.2**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **26 liter(s)**
- Trub loss **5 %**
- Size with trub loss **27.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **32.9 liter(s)**

Mash information

- Mash efficiency **81 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **29.6 liter(s)**
- Total mash volume **38 liter(s)**

Steps

- Temp **64 C**, Time **60 min**
- Temp **72 C**, Time **30 min**

Mash step by step

- Heat up **29.6 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **11.8 liter(s)** of **76C** water or to achieve **32.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3 kg (35.5%)	80 %	5
Grain	Viking Pilsner malt	3 kg (35.5%)	82 %	4
Grain	Jęczmień niestodowany	1 kg (11.8%)	75 %	2
Grain	Płatki owsiane	0.2 kg (2.4%)	60 %	3
Grain	Weyermann Specjal W	0.25 kg (3%)	68 %	300
Grain	Jęczmień palony	0.5 kg (5.9%)	55 %	985
Grain	Weyermann - Dehusked Carafa III	0.5 kg (5.9%)	70 %	1024

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Challenger	50 g	60 min	7 %
Aroma (end of boil)	East Kent Goldings	50 g	15 min	5.1 %
Aroma (end of boil)	Fuggles	50 g	15 min	4.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	1 g	Fermentis