

## FES

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- 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