

## #28 FES

- Gravity **18 BLG**
- ABV **7.7 %**
- IBU **64**
- SRM **49.6**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **2 %**
- Size with trub loss **20.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **12 %/h**
- Boil size **26 liter(s)**

### Mash information

- Mash efficiency **73.5 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **24.7 liter(s)**
- Total mash volume **32.9 liter(s)**

### Steps

- Temp **64 C**, Time **50 min**
- Temp **72 C**, Time **10 min**
- Temp **80 C**, Time **1 min**

### Mash step by step

- Heat up **24.7 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **50 min** at **64C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **80C**
- Sparge using **9.5 liter(s)** of **76C** water or to achieve **26 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	6.2 kg (75.4%)	85 %	7
Grain	Platki owsiane	0.68 kg (8.3%)	60 %	3
Grain	Caraaroma	0.42 kg (5.1%)	78 %	400
Grain	Simpsons - Roasted Barley	0.67 kg (8.2%)	1 %	1100
Grain	Weyermann - Chocolate Wheat	0.25 kg (3%)	1 %	1050

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	60 g	60 min	12 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Lallemand - LalBrew Verdant IPA	Ale	Slant	300 ml	Lallemand