

## #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  |