

## Express FES

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- Gravity **14 BLG**
- ABV **5.8 %**
- IBU **51**
- SRM **35.9**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **15.9 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **12.1 liter(s)**
- Total mash volume **15.5 liter(s)**

### Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **12.1 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **7.3 liter(s)** of **76C** water or to achieve **15.9 liter(s)** of wort

### Fermentables

| Type  | Name                 | Amount          | Yield  | EBC  |
|-------|----------------------|-----------------|--------|------|
| Grain | Viking Pale Ale malt | 2.35 kg (68.1%) | 80 %   | 5    |
| Grain | Platki owsiane       | 0.3 kg (8.7%)   | 85 %   | 3    |
| Grain | VM Pale Cookie       | 0.15 kg (4.3%)  | 70 %   | 30   |
| Grain | Special X Malt       | 0.15 kg (4.3%)  | 65.2 % | 315  |
| Grain | Carafa III Special   | 0.35 kg (10.1%) | 70 %   | 1034 |
| Grain | VM Caramel Sweet     | 0.15 kg (4.3%)  | 70 %   | 160  |

### Hops

| Use for | Name   | Amount | Time   | Alpha acid |
|---------|--------|--------|--------|------------|
| Boil    | Magnum | 22 g   | 60 min | 13.3 %     |

### Yeasts

| Name    | Type | Form   | Amount | Laboratory |
|---------|------|--------|--------|------------|
| OYL-057 | Ale  | Liquid | 1 ml   | Fermentis  |