

FES

- Gravity **15.9 BLG**
- ABV **6.7 %**
- IBU **32**
- SRM **37**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.8 liter(s)**
- Total mash volume **26.4 liter(s)**

Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**

Mash step by step

- Heat up **19.8 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Sparge using **12.1 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|---------------|-------|------|
| Grain | Viking Pale Ale malt | 5 kg (75.8%) | 80 % | 6.25 |
| Grain | Caraaroma | 0.5 kg (7.6%) | 78 % | 400 |
| Grain | Carafa II | 0.2 kg (3%) | 70 % | 1100 |
| Grain | Black Barley (Roast Barley) | 0.3 kg (4.5%) | 55 % | 1100 |
| Grain | Barley, Flaked | 0.2 kg (3%) | 70 % | 4 |
| Grain | Wheat, Flaked | 0.2 kg (3%) | 77 % | 4 |
| Grain | Oats, Flaked | 0.2 kg (3%) | 80 % | 2 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|--------------------|--------|--------|------------|
| Boil | East Kent Goldings | 55 g | 60 min | 5.1 % |
| Aroma (end of boil) | East Kent Goldings | 20 g | 15 min | 5.1 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale | Dry | 11.5 g | Safale |