

Smoked FES

- Gravity **18.9 BLG**
- ABV **8.2 %**
- IBU **37**
- SRM **30.6**
- 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 **73 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **24 liter(s)**
- Total mash volume **32 liter(s)**

Steps

- Temp **66 C**, Time **40 min**
- Temp **69 C**, Time **30 min**
- Temp **72 C**, Time **1 min**

Mash step by step

- Heat up **24 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **40 min** at **66C**
- Keep mash **30 min** at **69C**
- Keep mash **1 min** at **72C**
- Sparge using **9.3 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 | 2.2 kg (27.5%) | 80 % | 5 |
| Grain | Słód Wędzony Steinbach | 3 kg (37.5%) | 80 % | 5 |
| Grain | Monachijski | 1 kg (12.5%) | 80 % | 16 |
| Grain | Caraaroma | 0.06 kg (0.7%) | 78 % | 400 |
| Grain | Jęczmień palony | 0.3 kg (3.7%) | 55 % | 985 |
| Grain | Carafa III | 0.1 kg (1.2%) | 70 % | 1034 |
| Grain | Żytni | 0.5 kg (6.2%) | 85 % | 8 |
| Grain | Simpsons - Maris Otter | 0.5 kg (6.2%) | 81 % | 6 |
| Grain | Weyermann Caramunich 3 | 0.15 kg (1.9%) | 76 % | 150 |
| Grain | Castle Cafe | 0.2 kg (2.5%) | 75.5 % | 480 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil | Marynka | 60 g | 50 min | 7.6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------------------|-------------|-------------|---------------|-------------------|
| FM11 Wichrowe Wzgórze | Ale | Slant | 300 ml | Fermentum Mobile |