

FES

- Gravity **14.5 BLG**
- ABV **6 %**
- IBU **40**
- SRM **32.7**
- 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 **65 min**
- Evaporation rate **10 %/h**
- Boil size **25.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.8 liter(s)**
- Total mash volume **23.8 liter(s)**

Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **0 min**

Mash step by step

- Heat up **17.8 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **13.7 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|----------------|-------|------|
| Grain | Strzegom Pilzneński | 5 kg (84%) | 80 % | 4 |
| Grain | Karmelowy Jasny 30EBC | 0.3 kg (5%) | 75 % | 30 |
| Grain | Jęczmień palony | 0.2 kg (3.4%) | 55 % | 1400 |
| Grain | Weyermann - Carafa II | 0.1 kg (1.7%) | 70 % | 837 |
| Grain | Strzegom Barwiący | 0.2 kg (3.4%) | 68 % | 1300 |
| Grain | Weyermann pszeniczny jasny | 0.1 kg (1.7%) | 80 % | 6 |
| Grain | Jęczmień niestodowany | 0.05 kg (0.8%) | 75 % | 2 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-----------------|--------|--------|------------|
| Boil | Styrian Golding | 45 g | 10 min | 3.6 % |
| Boil | Marynka | 35 g | 50 min | 10 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

| | | | | |
|---------------------|-----|--------|--------|-------------|
| Wyeast - London Ale | Ale | Liquid | 200 ml | Wyeast Labs |
|---------------------|-----|--------|--------|-------------|