

Alt

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **38**
- SRM **11.6**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.03 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **19.9 liter(s)**

Steps

- Temp **73 C**, Time **1 min**
- Temp **66 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **15 liter(s)** of strike water to **73.6C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **1 min** at **73C**
- Keep mash **5 min** at **78C**
- Sparge using **16.5 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|----------------|-------|-----|
| Grain | Pilzneński | 3 kg (60.6%) | 81 % | 4 |
| Grain | Strzegom Monachijski typ I | 1.5 kg (30.3%) | 79 % | 16 |
| Grain | Strzegom Karmel 150 | 0.4 kg (8.1%) | 75 % | 150 |
| Grain | Barwiący | 0.05 kg (1%) | 55 % | 985 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|-------|--------|--------|------------|
| Boil | Perle | 40 g | 60 min | 7 % |
| Boil | Perle | 20 g | 15 min | 7 % |
| Aroma (end of boil) | Perle | 5 g | 1 min | 7 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------------------|------|--------|--------|-------------|
| Wyeast - Thames Valley Ale | Ale | Liquid | 125 ml | Wyeast Labs |