

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