

alt

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **22**
- SRM **7.9**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **25.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.8 liter(s)**
- Total mash volume **21.6 liter(s)**

Steps

- Temp **50 C**, Time **20 min**
- Temp **64 C**, Time **30 min**
- Temp **70 C**, Time **30 min**
- Temp **77 C**, Time **5 min**

Mash step by step

- Heat up **16.8 liter(s)** of strike water to **54.3C**
- Add grains
- Keep mash **20 min** at **50C**
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **70C**
- Keep mash **5 min** at **77C**
- Sparge using **13.7 liter(s)** of **76C** water or to achieve **25.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------------------|----------------|-------|-----|
| Grain | Strzegom Monachijski typ I weyermann | 4.3 kg (89.6%) | 79 % | 16 |
| Grain | Monachijski | 0.5 kg (10.4%) | 80 % | 16 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|---------|--------|--------|------------|
| Boil | Liberty | 40 g | 60 min | 4.5 % |
| Aroma (end of boil) | Liberty | 20 g | 5 min | 4.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------|-------|------|--------|------------|
| Safbrew S-33 | Wheat | Dry | 11.5 g | --- |