

LW

- Gravity **14.8 BLG**
- ABV ---
- IBU **23**
- SRM **15.1**
- Style **Vienna Lager**

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 **75 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **22.2 liter(s)**
- Total mash volume **27.8 liter(s)**

Steps

- Temp **62 C**, Time **15 min**
- Temp **71 C**, Time **45 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **22.2 liter(s)** of strike water to **67.3C**
- Add grains
- Keep mash **15 min** at **62C**
- Keep mash **45 min** at **71C**
- Keep mash **10 min** at **78C**
- Sparge using **8.7 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|------------------------|-----------------|-------|-----|
| Grain | Vienna Malt | 4.3 kg (77.5%) | 78 % | 8 |
| Grain | Monachijski | 0.75 kg (13.5%) | 80 % | 16 |
| Grain | Strzegom Karmel 150 | 0.5 kg (9%) | 75 % | 150 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-----------------------|--------|--------|------------|
| Boil | Brewers Gold | 20 g | 60 min | 7.6 % |
| Boil | Saaz (Czech Republic) | 20 g | 20 min | 4.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------------------------------------|-------|------|--------|------------|
| Mangroove jack California Lager | Lager | Dry | 10 g | mangroove |