

## 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