

# Lager

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **23**
- SRM **3.6**
- Style **Munich Helles**

## Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.8 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **18.1 liter(s)**
- Total mash volume **23.2 liter(s)**

## Steps

- Temp **62 C**, Time **20 min**
- Temp **70 C**, Time **40 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **18.1 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **20 min** at **62C**
- Keep mash **40 min** at **70C**
- Keep mash **5 min** at **78C**
- Sparge using **14.9 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4.5 kg (87.2%)	81 %	4
Grain	Weyermann - Carapils	0.5 kg (9.7%)	78 %	4
Grain	Weyermann - Acidulated Malt	0.16 kg (3.1%)	80 %	6

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	20 g	60 min	10 %
Aroma (end of boil)	Sybilla	20 g	5 min	3.5 %
Whirlpool	Sybilla	20 g	5 min	3.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
WLP833 - German Bock Lager Yeast	Lager	Liquid	3000 ml	White Labs