

## cascade PL bitter

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **37**
- SRM **8.2**
- Style **Special/Best/Premium Bitter**

### 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 **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

### Steps

- Temp **55 C**, Time **10 min**
- Temp **62 C**, Time **35 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **17.5 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **35 min** at **62C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **15.3 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 (90%)	81 %	4
Grain	Weyermann - Melanoiden Malt	0.2 kg (4%)	81 %	53
Grain	Strzegom Karmel 300	0.2 kg (4%)	70 %	300
Grain	Pszeniczny	0.1 kg (2%)	85 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Admiral	15 g	60 min	14.3 %
Boil	Tradition	30 g	30 min	5.5 %
Boil	Cascade PL	25 g	5 min	5.2 %
Boil	Cascade PL	25 g	0 min	5.2 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale

## Extras

Type	Name	Amount	Use for	Time
Fining	mech irlandzki	5 g	Boil	10 min