

Pilzneńskie karmelowe

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **20**
- SRM **3.7**
- Style **German Pilsner (Pils)**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.5 liter(s)**
- Total mash volume **22 liter(s)**

Steps

- Temp **65 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **0 min**
- Temp **100 C**, Time **60 min**

Mash step by step

- Heat up **16.5 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **40 min** at **65C**
- Keep mash **20 min** at **72C**
- Keep mash **0 min** at **76C**
- Keep mash **60 min** at **100C**
- Sparge using **20.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pilsner Malt	5 kg (90.9%)	81 %	5
Grain	Weyermann - Carapils	0.5 kg (9.1%)	78 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	20 g	60 min	8.7 %
Aroma (end of boil)	Lublin (Lubelski)	20 g	15 min	4.6 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	7.5 g	Safale