

# Lager karmelowy

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **31**
- SRM **6.3**
- Style **Standard American Lager**

## Batch size

- Expected quantity of finished beer **130 liter(s)**
- Trub loss **5 %**
- Size with trub loss **136.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **164.4 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **96 liter(s)**
- Total mash volume **128 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **78 C**, Time **15 min**

## Mash step by step

- Heat up **96 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **15 min** at **78C**
- Sparge using **100.4 liter(s)** of **76C** water or to achieve **164.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	20 kg (62.5%)	80 %	4
Grain	Karmelowy Jasny 30EBC	5 kg (15.6%)	75 %	30
Grain	Strzegom Monachijski typ I	7 kg (21.9%)	79 %	16

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	60 g	60 min	10 %
Aroma (end of boil)	Lublin (Lubelski)	30 g	3 min	4 %
Boil	Saaz (Czech Republic)	250 g	60 min	4.5 %
Aroma (end of boil)	Magnat	30 g	5 min	11.2 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Saflager W 34/70	Lager	Dry	70 g	Fermentis