

# 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  |