

## Lager karmelowy 3

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **22**
- SRM **6.2**
- 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 **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **105 liter(s)**
- Total mash volume **140 liter(s)**

### Steps

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

### Mash step by step

- Heat up **105 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **15 min** at **78C**
- Sparge using **94.4 liter(s)** of **76C** water or to achieve **164.4 liter(s)** of wort

### Fermentables

| Type  | Name                       | Amount        | Yield | EBC |
|-------|----------------------------|---------------|-------|-----|
| Grain | Strzegom Pilzneński        | 25 kg (71.4%) | 80 %  | 4   |
| Grain | Karmelowy Jasny 30EBC      | 5 kg (14.3%)  | 80 %  | 30  |
| Grain | Strzegom Monachijski typ I | 5 kg (14.3%)  | 79 %  | 16  |

### Hops

| Use for             | Name                  | Amount | Time   | Alpha acid |
|---------------------|-----------------------|--------|--------|------------|
| Boil                | Saaz (Czech Republic) | 450 g  | 60 min | 3.05 %     |
| Aroma (end of boil) | Saaz (Czech Republic) | 50 g   | 3 min  | 3.05 %     |

### Yeasts

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