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