

Ciemne

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **40**
- SRM **26**
- Style **Dark American Lager**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **27.8 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.4 liter(s) / kg**
- Mash size **19 liter(s)**
- Total mash volume **24.6 liter(s)**

Steps

- Temp **63 C**, Time **10 min**
- Temp **67 C**, Time **40 min**
- Temp **73 C**, Time **10 min**

Mash step by step

- Heat up **19 liter(s)** of strike water to **69.3C**
- Add grains
- Keep mash **10 min** at **63C**
- Keep mash **40 min** at **67C**
- Keep mash **10 min** at **73C**
- Sparge using **14.4 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale	4.5 kg (80.4%)	80 %	4
Grain	Pszeniczny	0.5 kg (8.9%)	85 %	4
Grain	zakwaszający	0.1 kg (1.8%)	80 %	4
Grain	Strzegom Karmel 600	0.2 kg (3.6%)	68 %	600
Grain	Special X Bestmalz	0.1 kg (1.8%)	--- %	300
Grain	Prażona pszenica IREKS	0.2 kg (3.6%)	--- %	1600

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Waimea	15 g	50 min	17 %
Aroma (end of boil)	Waimea	20 g	10 min	17 %
Aroma (end of boil)	Azacca	20 g	5 min	10.8 %

Yeasts

Name	Type	Form	Amount	Laboratory
Saflager S-23	Lager	Slant	300 ml	---

Extras

Type	Name	Amount	Use for	Time
Flavor	Skórka słodkiej pomarańczy	15 g	Boil	15 min
Fining	Whirlfloc T	1 g	Boil	10 min