

ciemne

- Gravity **14 BLG**
- ABV **5.8 %**
- IBU **28**
- SRM **24.9**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **19 liter(s)**
- Total mash volume **23.8 liter(s)**

Steps

- Temp **69 C**, Time **60 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **19 liter(s)** of strike water to **75.1C**
- Add grains
- Keep mash **60 min** at **69C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **12.3 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Munich Malt	2 kg (34.8%)	78 %	18
Grain	Viking Pilsner malt	2 kg (34.8%)	82 %	4
Grain	Strzegom Karmel 150	0.5 kg (8.7%)	75 %	150
Grain	Strzegom Czekoladowy ciemny	0.25 kg (4.3%)	68 %	1200
Adjunct	Miód Gryczany (Buckwheat Honey)	1 kg (17.4%)	70 %	40

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	25 g	60 min	10 %
Boil	Lublin (Lubelski)	20 g	10 min	4 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Fermentis