

Koźlak

- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **37**
- SRM **9.5**
- Style **Traditional Bock**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **8 %**
- Size with trub loss **22.7 liter(s)**
- Boil time **60 min**
- Evaporation rate **12 %/h**
- Boil size **27.8 liter(s)**

Mash information

- Mash efficiency **76 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.3 liter(s)**
- Total mash volume **23 liter(s)**

Steps

- Temp **54 C**, Time **10 min**
- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **40 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **17.3 liter(s)** of strike water to **59.7C**
- Add grains
- Keep mash **10 min** at **54C**
- Keep mash **40 min** at **63C**
- Keep mash **40 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **16.3 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	2.75 kg (47.8%)	81 %	4
Grain	Viking Pale Ale malt	1 kg (17.4%)	80 %	5
Grain	Strzegom Wiedeński	1 kg (17.4%)	79 %	10
Grain	Strzegom Monachijski typ I	0.5 kg (8.7%)	79 %	16
Grain	Weyermann Caramunich 3	0.5 kg (8.7%)	76 %	150

Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Magnat	30 g	50 min	11.2 %
Boil	tetnager	10 g	20 min	4 %

Yeasts

Name	Type	Form	Amount	Laboratory
Saflager S-23	Lager	Dry	11 g	Fermentis Division of S.I.Lesaffre