

## koźlak 3 #81

- Gravity **17.5 BLG**
- ABV **7.5 %**
- IBU **18**
- SRM **14**
- Style **Traditional Bock**

### Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.2 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.8 liter(s)**
- Total mash volume **18.4 liter(s)**

### Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **1 min**

### Mash step by step

- Heat up **13.8 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **6 liter(s)** of **76C** water or to achieve **15.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Monachijski	2 kg (43.5%)	80 %	16
Grain	Strzegom Wiedeński	1.5 kg (32.6%)	79 %	10
Grain	monachijski ciemny	1 kg (21.7%)	--- %	22
Grain	Strzegom Czekoladowy jasny	0.1 kg (2.2%)	68 %	400

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Tradition	22 g	60 min	5.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
w34/70	Lager	Dry	22 g	---