

flip-flap 27 l.

- Gravity **16.1 BLG**
- ABV **6.8 %**
- IBU **18**
- SRM **18.5**
- Style **Traditional Bock**

Batch size

- Expected quantity of finished beer **27 liter(s)**
- Trub loss **5 %**
- Size with trub loss **28.4 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **34.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **26.6 liter(s)**
- Total mash volume **35.4 liter(s)**

Steps

- Temp **63 C**, Time **10 min**
- Temp **72 C**, Time **15 min**
- Temp **72 C**, Time **40 min**

Mash step by step

- Heat up **26.6 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **10 min** at **63C**
- Keep mash **40 min** at **72C**
- Keep mash **15 min** at **72C**
- Sparge using **17 liter(s)** of **76C** water or to achieve **34.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Słód pilzneński	4 kg (45.2%)	--- %	4
Grain	słód monachijski jasny	2.5 kg (28.2%)	--- %	13
Grain	słód wiedeński	1.5 kg (16.9%)	--- %	10
Grain	biscuit	0.3 kg (3.4%)	--- %	50
Grain	Pszeniczny Czekoladowy	0.15 kg (1.7%)	73 %	1050
Grain	Caraaroma	0.4 kg (4.5%)	--- %	350

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Iunga PL 2018	20 g	60 min	11 %
Boil	Lubelski 2018 Polish Hops	40 g	10 min	2.4 %

Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M84 Bohemian Lager	Lager	Slant	89.99 ml	Mangrove Jack's

Extras

Type	Name	Amount	Use for	Time
Fining	whirfloe T	1.69 g	Boil	5 min