

full aroma

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **24**
- SRM **4.3**

Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **22.8 liter(s)**

Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3.33 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **19.5 liter(s)**

Steps

- Temp **62 C**, Time **15 min**
- Temp **72 C**, Time **45 min**
- Temp **77 C**, Time **10 min**

Mash step by step

- Heat up **15 liter(s)** of strike water to **68.3C**
- Add grains
- Keep mash **15 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **77C**
- Sparge using **12.3 liter(s)** of **76C** water or to achieve **22.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4 kg (88.9%)	81 %	4
Grain	Monachijski	0.5 kg (11.1%)	80 %	16

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Saaz (Czech Republic)	30 g	60 min	4.5 %
Boil	Lublin (Lubelski)	20 g	20 min	4 %

Yeasts

Name	Type	Form	Amount	Laboratory
us-05	Ale	Dry	11.9 g	---