

## ABW

- Gravity **24 BLG**
- ABV **11 %**
- IBU **100**
- SRM **13**

### Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11.6 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **14.6 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **2.75 liter(s) / kg**
- Mash size **16.2 liter(s)**
- Total mash volume **22.1 liter(s)**

### Steps

- Temp **66 C**, Time **60 min**
- Temp **76 C**, Time **1 min**

### Mash step by step

- Heat up **16.2 liter(s)** of strike water to **74.4C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **1 min** at **76C**
- Sparge using **4.3 liter(s)** of **76C** water or to achieve **14.6 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pale Ale Malt	5 kg (84.7%)	80 %	7
Grain	Płatki owsiane	0.4 kg (6.8%)	85 %	3
Grain	Biscuit Malt	0.25 kg (4.2%)	79 %	45
Grain	Caramel/Crystal Malt - 40L	0.25 kg (4.2%)	74 %	155

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	30 g	60 min	15.5 %
Boil	Chinook	15 g	25 min	13 %
Boil	Zythos	15 g	25 min	11 %
Boil	Zythos	15 g	5 min	11 %
Boil	Chinook	15 g	5 min	13 %

### Yeasts

Name	Type	Form	Amount	Laboratory
us-05	Ale	Slant	1111 ml	---