

## Kozioł do kwadratu #2

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- Gravity **22.7 BLG**
- ABV **10.3 %**
- IBU **27**
- SRM **11.8**
- Style **Doppelbock**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **22 liter(s)**
- Total mash volume **30.8 liter(s)**

### Steps

- Temp **50 C**, Time **1 min**
- Temp **62 C**, Time **30 min**
- Temp **72 C**, Time **45 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **22 liter(s)** of strike water to **56C**
- Add grains
- Keep mash **1 min** at **50C**
- Keep mash **30 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **13.2 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Wiedeński	4 kg (45.5%)	79 %	10
Grain	IREKS Pilzneński	2 kg (22.7%)	80.5 %	4
Grain	Monachijski	2.5 kg (28.4%)	80 %	16
Grain	Biscuit Malt	0.2 kg (2.3%)	79 %	45
Grain	Special B Castle	0.1 kg (1.1%)	70 %	400

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	25 g	60 min	13.5 %
Aroma (end of boil)	Lubelski Polish Hops 2018	50 g	5 min	2.6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
34/70	Lager	Slant	350 ml	Fermentis

### Extras

Type	Name	Amount	Use for	Time
Fining	Mech irlandzki	5 g	Boil	15 min