

Ustoutkowy

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **21**
- SRM **30.6**
- Style **Dry Stout**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.4 liter(s)**
- Total mash volume **20.6 liter(s)**

Steps

- Temp **55 C**, Time **19 min**
- Temp **67 C**, Time **90 min**
- Temp **72 C**, Time **10 min**
- Temp **77 C**, Time **1 min**

Mash step by step

- Heat up **15.4 liter(s)** of strike water to **60.9C**
- Add grains
- Keep mash **19 min** at **55C**
- Keep mash **90 min** at **67C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **77C**
- Sparge using **18.8 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3.5 kg (68%)	80 %	5
Grain	Fawcett - Czekoladowy	0.35 kg (6.8%)	73 %	1001
Grain	Viking Munich Malt	1 kg (19.4%)	78 %	18
Grain	Jęczmień palony	0.3 kg (5.8%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	East Kent Goldings	15 g	60 min	5.1 %
Boil	Fuggles	15 g	60 min	4.5 %
Boil	East Kent Goldings	15 g	15 min	5.1 %
Boil	Fuggles	15 g	15 min	4.5 %

Extras

Type	Name	Amount	Use for	Time
Flavor	jęczmień palony i na mash out	300 g	Mash	10 min