

Bitter -> Better

- Gravity **13.1 BLG**
- ABV ---
- IBU **44**
- SRM **11**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **7 %/h**
- Boil size **27.1 liter(s)**

Mash information

- Mash efficiency **66 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.9 liter(s)**
- Total mash volume **25.6 liter(s)**

Steps

- Temp **64 C**, Time **40 min**
- Temp **74 C**, Time **20 min**
- Temp **76 C**, Time **5 min**

Mash step by step

- Heat up **19.9 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **74C**
- Keep mash **5 min** at **76C**
- Sparge using **12.9 liter(s)** of **76C** water or to achieve **27.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	5 kg (87.7%)	85 %	7
Grain	Strzegom Karmel 30	0.3 kg (5.3%)	75 %	30
Grain	Strzegom Karmel 150	0.2 kg (3.5%)	75 %	150
Grain	Strzegom Bursztynowy	0.2 kg (3.5%)	70 %	49

Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Marynka	30 g	70 min	10 %
Boil	East Kent Goldings	15 g	30 min	5.1 %
Boil	Lublin (Lubelski)	15 g	15 min	4 %
Boil	East Kent Goldings	15 g	5 min	5.1 %
Whirlpool	East Kent Goldings	30 g	0 min	5.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
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Safale S-04	Ale	Dry	11.5 g	---
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