

# BITTER BULLDOG v4

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- Gravity **13.6 BLG**
- ABV ---
- IBU **32**
- SRM **5.6**
- Style **Special/Best/Premium Bitter**

## Batch size

- Expected quantity of finished beer **26 liter(s)**
- Trub loss **5 %**
- Size with trub loss **27.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **32.9 liter(s)**

## Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **20.5 liter(s)**
- Total mash volume **26.7 liter(s)**

## Steps

- Temp **64 C**, Time **50 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **3 min**

## Mash step by step

- Heat up **20.5 liter(s)** of strike water to **70.7C**
- Add grains
- Keep mash **50 min** at **64C**
- Keep mash **15 min** at **72C**
- Keep mash **3 min** at **78C**
- Sparge using **18.6 liter(s)** of **76C** water or to achieve **32.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	4 kg (64.5%)	80 %	4
Grain	Strzegom Pszeniczny	1 kg (16.1%)	81 %	6
Grain	Strzegom Karmel 150	0.2 kg (3.2%)	75 %	150
Grain	Viking Pale Ale malt	1 kg (16.1%)	80 %	5

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	15 g	60 min	13.5 %
Boil	East Kent Goldings	15 g	60 min	5.1 %
Boil	East Kent Goldings	20 g	40 min	5.1 %
Boil	East Kent Goldings	15 g	10 min	5.1 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM10 O czym szumią wierzby	Ale	Slant	150 ml	Fermentum Mobile