

# american pale ale z PK 3.0

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **58**
- SRM **7.8**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **4 %**
- Size with trub loss **23.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **12 %/h**
- Boil size **28.6 liter(s)**

## Mash information

- Mash efficiency **78 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18.3 liter(s)**
- Total mash volume **24.4 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **18.3 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **16.4 liter(s)** of **76C** water or to achieve **28.6 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	1 kg (16.4%)	85 %	7
Grain	Viking Pale Ale malt	4 kg (65.6%)	80 %	5
Grain	Strzegom Monachijski typ I	0.8 kg (13.1%)	79 %	16
Grain	Karmelowy Czerwony	0.2 kg (3.3%)	75 %	59
Grain	Strzegom Karmel 300	0.1 kg (1.6%)	70 %	299

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	20 g	60 min	15.5 %
Boil	Columbus/Tomahawk/Zeus	20 g	30 min	15.5 %
Aroma (end of boil)	Centennial	20 g	10 min	10.5 %
Aroma (end of boil)	Centennial	30 g	0 min	10.5 %
Dry Hop	Centennial	50 g	0 day(s)	10.5 %

## Yeasts

<b>Name</b>	<b>Type</b>	<b>Form</b>	<b>Amount</b>	<b>Laboratory</b>
Safale US-05	Ale	Dry	23 g	Fermentis