

# mandaryna

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **38**
- SRM **4.2**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.6 liter(s)**
- Total mash volume **18.2 liter(s)**

## Steps

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

## Mash step by step

- Heat up **13.6 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **78C**
- Sparge using **16.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	2.5 kg (54.9%)	81 %	4
Grain	Viking Pale Ale malt	1.5 kg (33%)	80 %	5
Grain	Karmelowy Jasny 30EBC	0.3 kg (6.6%)	75 %	30
Grain	Oats, Flaked	0.25 kg (5.5%)	80 %	2

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	10 g	60 min	12.1 %
Boil	Mandarina Bavaria	20 g	15 min	8.9 %
Aroma (end of boil)	Mandarina Bavaria	40 g	10 min	8.9 %
Aroma (end of boil)	Mandarina Bavaria	40 g	0 min	8.9 %

## Yeasts

Name	Type	Form	Amount	Laboratory
us 05	Ale	Dry	11.5 g	fermentis