

# Mandaryna Pale Ale

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- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **127**
- SRM **4.9**
- 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 **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.9 liter(s)**
- Total mash volume **17.2 liter(s)**

## Steps

- Temp **68 C**, Time **70 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **12.9 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **70 min** at **68C**
- Keep mash **10 min** at **78C**
- Sparge using **16.7 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 (58.1%)	81 %	4
Grain	Viking Pale Ale malt	1.5 kg (34.9%)	80 %	5
Grain	Caramel/Crystal Malt - 30L	0.3 kg (7%)	75 %	59

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	10 g	60 min	13.5 %
Boil	Mandarina Bavaria	20 g	45 min	10 %
Boil	Mandarina Bavaria	40 g	50 min	10 %
Boil	Mandarina Bavaria	40 g	55 min	10 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M15 Empire Ale	Ale	Dry	11.5 g	Mangrove Jack's