

## #191 Mandaryna powraca 2023

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **22**
- SRM **3**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **17.7 liter(s)**
- Trub loss **6 %**
- Size with trub loss **19.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **6 %/h**
- Boil size **21.4 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **12.3 liter(s)**
- Total mash volume **15.8 liter(s)**

### Steps

- Temp **52 C**, Time **10 min**
- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **12.3 liter(s)** of strike water to **56.6C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **45 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **12.6 liter(s)** of **76C** water or to achieve **21.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale Maris Otter Extra Crisp	3 kg (85.7%)	82 %	3.5
Grain	Pszeniczny Steinbach	0.5 kg (14.3%)	81 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Mandarina Bavaria DE 2022	5 g	60 min	7.8 %
Aroma (end of boil)	Mandarina Bavaria DE 2022	45 g	10 min	7.8 %
Dry Hop	Mandarina Bavaria DE 2022	50 g	7 day(s)	7.8 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM53 Voss kveik	Ale	Slant	50 ml	Fermentum Mobile