

# IPA kooperacja

---

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **45**
- SRM **5.2**

## Batch size

- Expected quantity of finished beer **38 liter(s)**
- Trub loss **5 %**
- Size with trub loss **41.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **7 %/h**
- Boil size **47.6 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **33.3 liter(s)**
- Total mash volume **44.4 liter(s)**

## Steps

- Temp **67 C**, Time **60 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **33.3 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **25.4 liter(s)** of **76C** water or to achieve **47.6 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	11 kg (99.1%)	80 %	5
Grain	Strzegom Karmel 150	0.1 kg (0.9%)	75 %	150

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	80 g	60 min	10 %
Aroma (end of boil)	Lublin (Lubelski)	100 g	2 min	4 %
Aroma (end of boil)	Marynka	20 g	2 min	10 %