

## ira 2019

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- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **35**
- SRM **13**

### Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **10 %**
- Size with trub loss **26.4 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **32.2 liter(s)**

### Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.4 liter(s)**
- Total mash volume **23.2 liter(s)**

### Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **17.4 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **20.6 liter(s)** of **76C** water or to achieve **32.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	2.5 kg (43.1%)	80 %	4
Grain	Strzegom Monachijski typ II	1 kg (17.2%)	79 %	22
Grain	Viking Pale Ale	0.5 kg (8.6%)	80 %	6
Grain	Karmelowy Czerwony	1 kg (17.2%)	75 %	50
Grain	red crystal	0.3 kg (5.2%)	80 %	400
Grain	Bestmalz Carmel Pils	0.5 kg (8.6%)	75 %	5

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	sybilla szyszka uniwersalny	30 g	60 min	6.5 %
Boil	sybilla szyszka uniwersalny	17 g	30 min	6.5 %
Boil	Marynka	10 g	30 min	9 %
Boil	perle uniwersalny	20 g	10 min	7 %

### Yeasts

<b>Name</b>	<b>Type</b>	<b>Form</b>	<b>Amount</b>	<b>Laboratory</b>
fermentis US-5	Ale	Slant	100 ml	---