

# Czarna Lilia PK

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **24**
- SRM **33.6**
- Style **Munich Dunkel**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **30.4 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18.5 liter(s)**
- Total mash volume **24.6 liter(s)**

## Steps

- Temp **64 C**, Time **60 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **18.5 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **18.1 liter(s)** of **76C** water or to achieve **30.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Münchner Malz	2.5 kg (40.7%)	78 %	20
Grain	Wiener Malz	2 kg (32.5%)	77.5 %	7
Grain	Platki owsiane	0.5 kg (8.1%)	85 %	3
Grain	Caramunich 2	0.4 kg (6.5%)	73 %	120
Grain	Caraaroma	0.15 kg (2.4%)	78 %	400
Grain	Pale Chocolate	0.2 kg (3.3%)	60 %	690
Grain	Carafa III	0.15 kg (2.4%)	70 %	1300
Grain	Carafa II	0.25 kg (4.1%)	70 %	1100

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Northern Brewer	10 g	80 min	7.7 %
Boil	Northern Brewer	10 g	60 min	7.7 %
Boil	Hallertau Spalt Select	10 g	30 min	4.8 %
Boil	Hallertau Spalt Select	10 g	15 min	4.8 %

Boil	Hallertau Spalt Select	10 g	10 min	4.8 %
Boil	Hallertau Spalt Select	10 g	5 min	4.8 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast - Bavarian Lager	Lager	Liquid	10.4 ml	Wyeast Labs

### Extras

Type	Name	Amount	Use for	Time
Fining	mech irlandzki	5 g	Boil	5 min