

# Munich Dunkel v1

- Gravity **11.9 BLG**
- ABV ---
- IBU **29**
- SRM **15**
- Style **Munich Dunkel**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **15 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **6 %/h**
- Boil size **26.7 liter(s)**

## Mash information

- Mash efficiency **67 %**
- Liquor-to-grist ratio **3.73 liter(s) / kg**
- Mash size **20 liter(s)**
- Total mash volume **25.4 liter(s)**

## Steps

- Temp **62 C**, Time **10 min**
- Temp **68 C**, Time **40 min**

## Mash step by step

- Heat up **20 liter(s)** of strike water to **67.6C**
- Add grains
- Keep mash **10 min** at **62C**
- Keep mash **40 min** at **68C**
- Sparge using **12.1 liter(s)** of **76C** water or to achieve **26.7 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Monachijski Optima	2.14 kg (39.9%)	78.9 %	18
Grain	Pilzneński jasny Optima	1.7 kg (31.7%)	80 %	4
Grain	Pszeniczny jasny Optima	0.78 kg (14.5%)	82.3 %	3
Grain	Karmelowy jasny Optima 20-30 EBC	0.5 kg (9.3%)	75.9 %	30
Grain	Karmelowy ciemny Caraaroma Weyermann	0.15 kg (2.8%)	73.6 %	350
Grain	Carafa Special I Weyermann 900EBC	0.1 kg (1.9%)	77.9 %	900

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Iunga	16 g	40 min	11 %
Boil	Lublin (Lubelski)	30 g	10 min	4 %
Boil	Cascade	50 g	5 min	6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
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Saflager S-23	Lager	Slant	500 ml	Fermentis
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