Munich Dunkel

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **26**
- SRM **19.9**
- Style **Munich Dunkel**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **120 min**
- Evaporation rate **10 %/h**
- Boil size **27.6 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **15.4 liter(s)**
- Total mash volume **19.8 liter(s)**

Steps

- Temp **70 C**, Time **60 min**

Mash step by step

- Heat up **15.4 liter(s)** of strike water to **77.1C**
- Add grains
- Keep mash **60 min** at **70C**
- Sparge using **16.6 liter(s)** of **76C** water or to achieve **27.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	2 kg *(45.5%)*	81 %	4.5
Grain	Monachijski I - Viking Malt	1.6 kg *(36.4%)*	78 %	16
Grain	Special X Bestmaltz	0.8 kg *(18.2%)*	75 %	350

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Polaris (DE)	10 g	40 min	20.8 %
Boil	Opal (DE)!	10 g	20 min	8.4 %

Yeasts

Name	Type	Form	Amount	Laboratory
Saflager S-23	Lager	Dry	11.5 g	Fermentis