

Dunkles

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **23**
- SRM **15**
- Style **Munich Dunkel**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **120 min**
- Evaporation rate **12 %/h**
- Boil size **32.7 liter(s)**

Mash information

- Mash efficiency **76 %**
- Liquor-to-grist ratio **5.3 liter(s) / kg**
- Mash size **30.7 liter(s)**
- Total mash volume **36.5 liter(s)**

Steps

- Temp **50 C**, Time **10 min**
- Temp **62 C**, Time **60 min**
- Temp **70 C**, Time **60 min**
- Temp **77 C**, Time **10 min**

Mash step by step

- Heat up **30.7 liter(s)** of strike water to **52.8C**
- Add grains
- Keep mash **10 min** at **50C**
- Keep mash **60 min** at **62C**
- Keep mash **60 min** at **70C**
- Keep mash **10 min** at **77C**
- Sparge using **7.8 liter(s)** of **76C** water or to achieve **32.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Monachijski typ I	5.5 kg (94.8%)	79 %	16
Grain	Caraaroma	0.1 kg (1.7%)	78 %	400
Grain	Viking melanoidynowy	0.1 kg (1.7%)	75 %	60
Grain	Weyermann - Dehusked Carafo III	0.1 kg (1.7%)	70 %	1024

Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Sybilla	20 g	90 min	7 %
Boil	Sybilla	15 g	30 min	7 %

Yeasts

Name	Type	Form	Amount	Laboratory
WLP830 - German Lager Yeast	Lager	Liquid	150 ml	White Labs