

## Re: Halogen or fullspectrum? HELP!

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**From:** Uncle Al (*UncleAl0\_at\_hate.spam.net*)

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Evchen wrote:

>

> *Hello!*

> *I'm a swedish student working on a projekt which is creating moodlight*

> *for fairytailmoments for children and want a lamp that is bright*

> *enough to light up one person just like on a mini-stage, but my lamp*

> *will also have a function as cosy-light, I want to put filters around*

> *the light for colorchanges and maybe even make a possibility for gobos*

> *with shaped shadows.*

A kilowatt light produces heat. Filters do not like being hot. You need a transparent cooler in-between.

> *I've thought about halogenlamps, but the tend to get very varm, and*

> *need to be ventilated... so that's why I thought of*

> *fullspectrumlight, but they have a cold, bright and not-so-cosy*

> *light, but has good lightquality if you want to read in it.*

Your choices for very bright white light are somewhere around

1) Limelight. The Fire Marshall will shut you down.

2) Arc light. Messy and hot.

3) Tungsten halogen

4) Short arc

5) Lucalux

6) Rare earth iodide-doped electrodeless mercury lamp with microwave excitation

(6) has low heat and infrared emission for the visible light output.

It's expensive as all get out and still gets hot. All intense light sources get hot. (5) is very good for output and price, though I don't know how well it works for stage illumination. (4) Short arc is fantastic – tremendous output in a small volume and especially good for movie theatre projectors. (3) you know about.

Heat is the problem. That gives you three choices between the bulb and the filter:

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(0) Forced air ventilation. It's hard to see how you can get around that.

1) Infrared mirror (cold mirror). Light goes through, heat bounces back to the bulb to improve efficiency.

2) IR-opaque glass. You absolutely must cool the IR filter.

3) Circulating water IR filter, typically a little copper sulfate plus other stuff. Heavy on infrastructure and prone to failure.

Your best bet would be the cold mirror. Be careful! It has a front and a back and it only works oriented one way. I expect it must still be cooled by blowing air.

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Uncle Al

<http://www.mazepath.com/uncleal/>

(Toxic URL! Unsafe for children and most mammals)

<http://www.mazepath.com/uncleal/az.pdf>