Peachpit
Essential books for the creative community

LightWave "Light" Reference Guide

Inside LightWave 8
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In *Inside LightWave 8* AGA Digital Studios President and best-selling author Dan Ablan walks you through LightWave's interfaces and explains workflow, modeling techniques, texturing, lighting, and rendering in language you can understand. In this brief excerpt, he includes two tables that are sure to shed some light on that particular property or specification that you swore you knew but just can't seem to remember.

Color Temperatures of Light

The color temperature of light is the temperature to which you would have to heat an object (a black body) to produce light of similar spectral characteristics. Low color temperatures produce warmer (yellow/red) light, whereas higher temperatures produce colder (bluer) light.

The color of light is measured in Kelvins. LightWave has a handy Kelvin scale on its color picker, which makes it easy to plug in these values when you want an accurate starting point. For example, if you want to light your gunfight scene from High Noon, you would select a starting temperature of 6000 to 6500 degrees Kelvin (noontime) for your skylight and adjust from there. The table below presents various temperatures and the type of light they represent.

Kelvin Temperatures for Various Light Sources

Temperature	Light Source
1400-1930	Candlelight
2000-2500	Sunrise
2680	40W incandescent lamp
2800-2850	100W household (tungsten) bulb
2950	500W tungsten lamp
2960-3200	Tungsten studio lamp
3000	Fluorescent light (warm white)
	200W incandescent lamp
	1000W tungsten lamp
3200	Halogen bulb, Nitraphot B
3400	Photoflood (floodlamp)
	Halogen bulb, Nitraphot A
3800-4000	Clear flashbulb
4000	Moonlight
4400	Sun two hours after rising
5000	Fluorescent light
5000-6000	Daylight sun at midday to noon
5500	Daylight (for photography)
	Electronic flash tube
5500-6000	Blue flashbulb
6000-7000	Electronic flash
6500	Daylight (sun and sky averaged)
7000	Overcast sky
8000	Cloudy sky, light shade
9000	Hazy sky, light shade
11000	Sky light without direct sun
13000	Blue sky, thin white clouds
16000	Average blue sky, medium shade
18000-19000	Clear blue sky, deep shade

Reflection Properties

This table presents a good mix of materials and their basic reflective properties. There are many factors that affect an item's reflectivity, so use these values as a starting point.

Percentage of Incident Light Reflected by Various Materials

Material	%	Material	%
Aluminum	45	Paper, Newsprint	61
Aluminum Foil	65	Paper, White	71
Asphalt	14	Pewter	20
Brass	40	Platinum	64
Brick	30	Porcelain, White	72
Bronze	10	Quartz	81
Chrome	70	Rubber	02
Copper	71	Silicon	28
Earth, Moist	08	Silver	90
Gold	84	Slate	06
Graphite	20	Stainless Steel	37
Green Leaf	21	Steel	55
Iron	15	Tin Can	40
Linen	81	Vinyl	15
Marble, White	53	Wood, Pine	40
Mercury	69		