

What is Light?

What is LIGHT?

- **LIGHT** What is it?

What do we want to know about it?

What is its significance?

- *It has different significance for different people,
depending on their perspective*

- *how they relate to it and how they intend to use it.*

LIGHT is – *To The Poetic*

For the poet, it might be a metaphor ...

- QUOTATION: *Not every light is a true light;
To the wise the light of truth is light itself.*

Tiruvalluvar (c. 5th century A.D.), Tamil sage, poet.

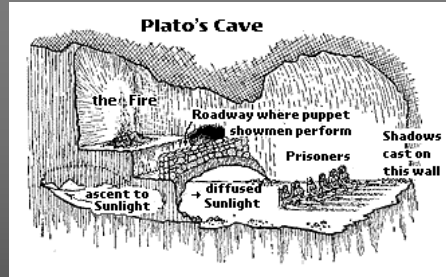
or a connotation of mood ...

- QUOTATION: *A sudden light transfigures a trivial thing, a weather-vane, a wind-mill, a winnowing flail, the dust in the barn door; a moment,—and the thing has vanished, because it was pure effect; but it leaves a relish behind it, a longing that the accident may happen again.*

Walter Pater (1839–1894), British writer, educator.

What is Light?

LIGHT is – *To The Philosopher*



- Plato realizes that the general run of humankind can think, and speak, etc., without (so far as they acknowledge) any awareness of his realm of Forms.
- The allegory of the cave is supposed to explain this.
- In the allegory, Plato likens people untutored in the Theory of Forms to prisoners chained in a cave, unable to turn their heads. All they can see is the wall of the cave. Behind them burns a fire. Between the fire and the prisoners there is a parapet, along which puppeteers can walk. The puppeteers, who are behind the prisoners, hold up puppets that cast shadows on the wall of the cave. The prisoners are unable to see these puppets, the real objects, that pass behind them. What the prisoners see and hear are shadows and echoes cast by objects that they do not see.
- The prisoners may learn what a book is by their experience with shadows of books. But they would be mistaken if they thought that the word "book" refers to something that any of them has ever seen. Likewise, we may acquire concepts by our perceptual experience of physical objects. But we would be mistaken if we thought that the concepts that we grasp were on the same level as the things we perceive.

LIGHT is – *To The Spiritual*



What is Light?

LIGHT is – To The Spiritual

LIGHT AND THE BIBLE

There are more than 200 references to the word 'light' in the Bible. About 75 of these occur in the new testament. The book of Job contains the most references (over 25) and the book of Psalms has about 25 references to light. In the new testament, the Gospel of John has the most references (about 16),

Light was the first of God's creations, according to the book of Genesis. "And God said, let there be light, and there was light". (Old Testament, Genesis, 1,3.)

God saw that the light was good, and he separated the light from the darkness. (Old Testament, Genesis, 1,4.)

"Speak to Aaron and say to him 'When you set up the seven lamps, they are to light the area in front of the lampstand'". (Old Testament, Numbers 8,2.)

The Bible, Numbers 4,9: "They are to take a blue cloth and cover the lampstand that is for light together with its lamps, its wick trimmers and trays, and all its jars for the oil used to supply it."

"to the land of deepest night, of deep shadow and disorder, where even the light is like darkness". Job 10,22.

"What is the way to the abode of light? And where does darkness reside?" Job 38,19.

"His snorting throws out flashes of light, his eyes are light the rays of dawn". Job 41,18

Light was identified throughout the New Testament with the nature of God, himself. "The word is light that the darkness cannot extinguish, and this light illuminates every man....We are the children of light, who have put aside the world of darkness."

LIGHT is - To The Painter

..... light is a vehicle of expression.

- **Edward Hopper**
Am. 1882 - 1967

Morning Sun 1952

His paintings embody in art a particular American 20th-century sensibility that is characterized by isolation, melancholy, and loneliness. The stark play of light and shadow convey an atmosphere of all-embracing loneliness and almost eerie solitude - the mood was the real subject of the work.



What is Light?

LIGHT is – To The Painter



- Claude Monet Fr. 1840 – 1926

Soliel Levant (Sunrise) 1872 & 1873

The Impressionist Artists dissolved forms into light. They painted blurry "impressions" of objects modified by changing light and atmospheric conditions—drifts of fog, shimmering sunlight on water, the glow of gas lamps on rainy streets. Their impressions were carried by, described by, and inherent in the rendering of light as cast on their subjects.

LIGHT is – To The Painter



What is Light?

LIGHT is – *To The Painter*

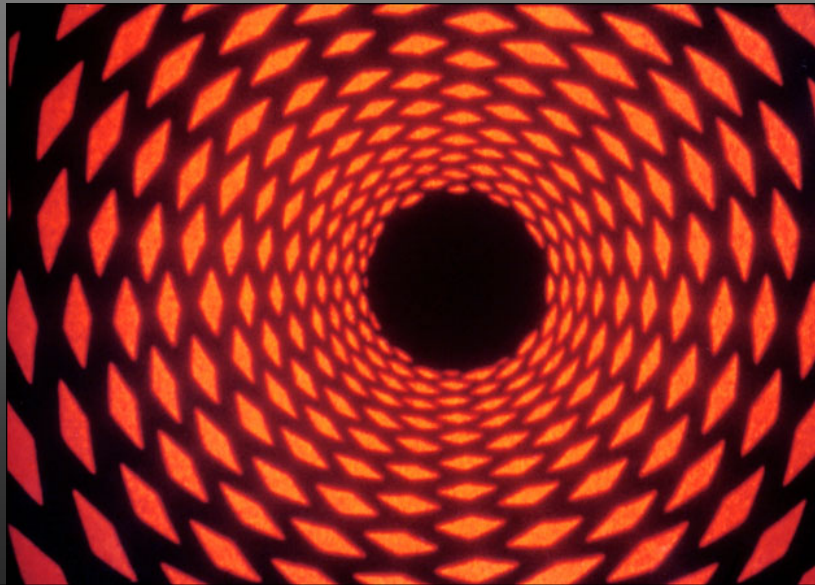
- Johannes Vermeer
Dutch (1632 – 1675)

Young Woman with a Water Pitcher c. 1662

Soft light subtly portrays the tranquility of domestic life. Conveys a sense of well-being.

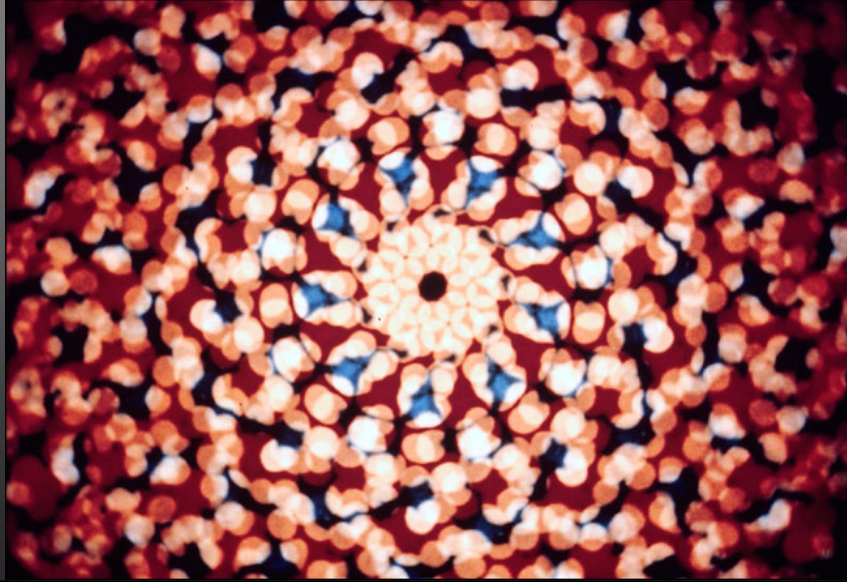


LIGHT is - *To The Artist*



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Rufus Knightwebb

LIGHT is - *To The Artist*



Night Passage 1987

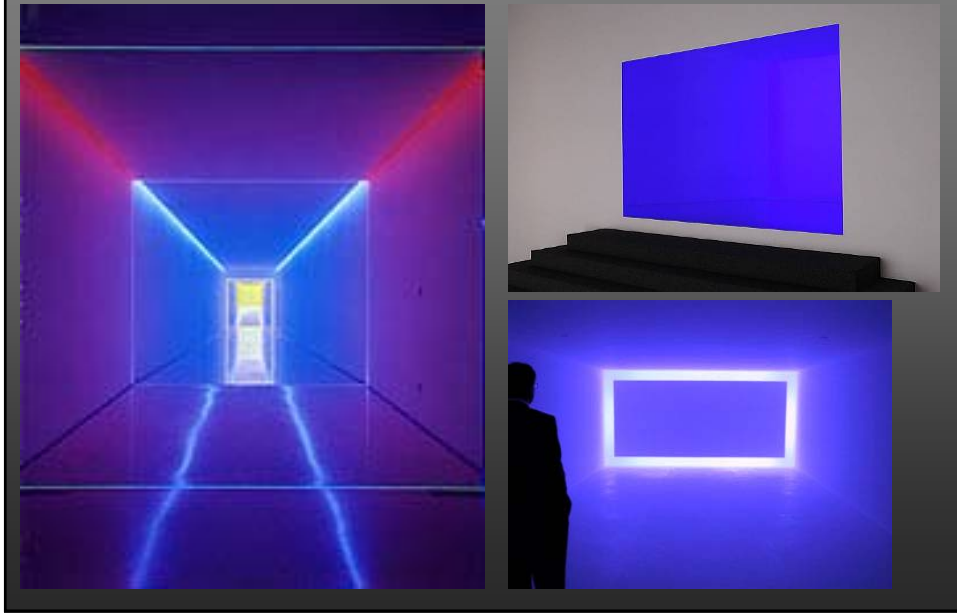


Excursus: Homage to the Square 3 2000

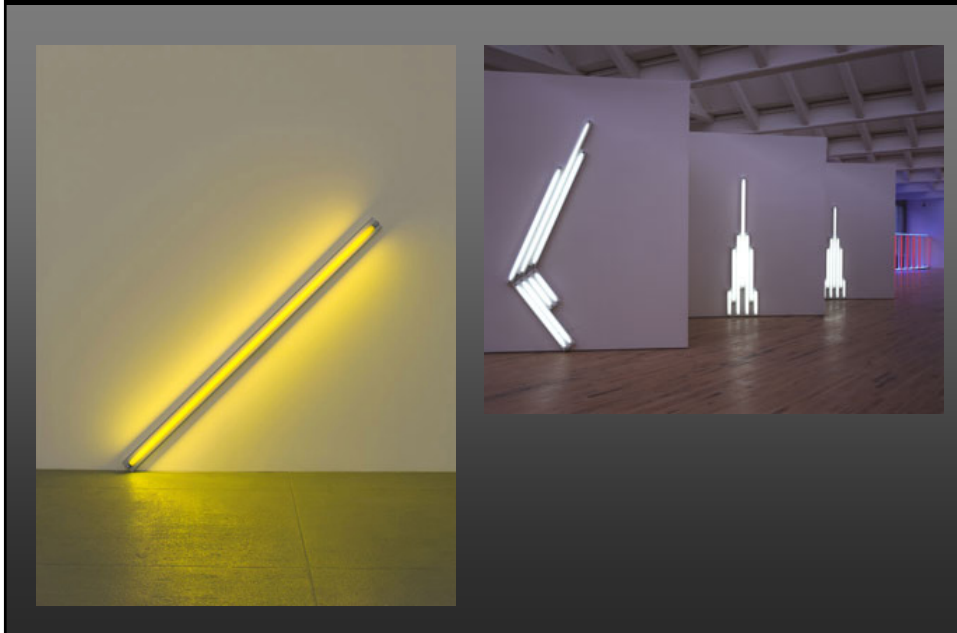
- Other artists, such as James Turrell (left) and Robert Irwin (right) are among the artists who use light as a medium in a more formal sense, to influence spatial & psychological perception. They endeavor to produce sensations that are essentially prelingual, to create a transformative experience of wordless thought. Neither object nor image, the works give form to perception - activating a heightened sensory awareness that promotes discovery

What is Light?

LIGHT is - *To The Artist*

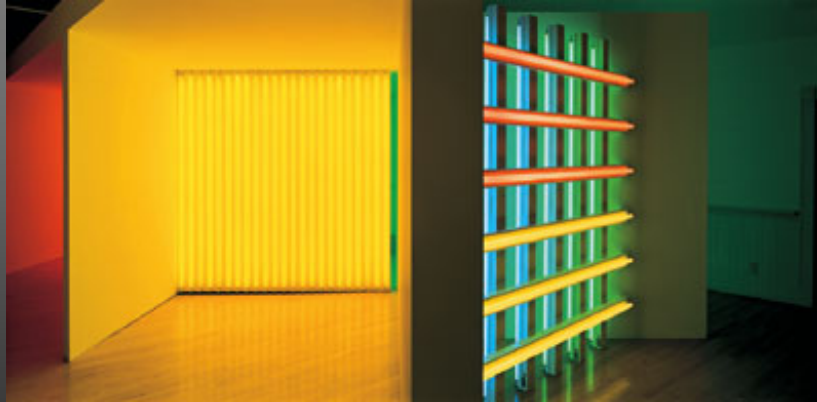


LIGHT is - *To The Artist*

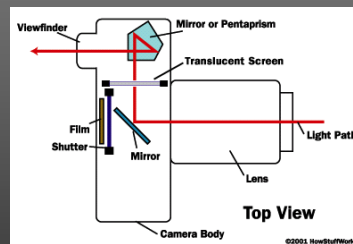
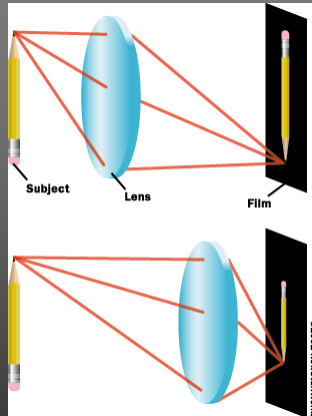


What is Light?

LIGHT is - *To The Artist*



LIGHT is – *To The Photographer*



What is Light?

LIGHT is – To The Photographer



Photographs prove Peary was close to the Pole

Shadows are clues in a technique – called photo-grammetric rectification – to find the sun's elevation when photographs were taken.

This elevation can be determined by correcting for perspective. The fact that nearer things seem larger and farther things smaller, even though both may be the same size, underlies the principle of perspective. In a drawing of three men of the same height standing in

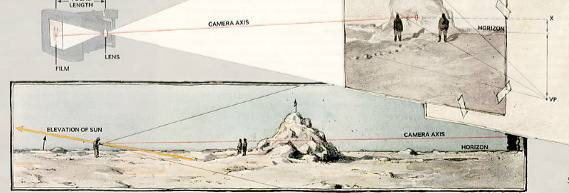
a line, the nearest will appear largest and cast the longest shadow (top right).

An artist determines the proper proportion of objects in a painting by drawing lines from the outside edges of the objects – a table, a person – back to vanishing points, which define the horizon. Objects of the same size placed so their outside edges are within the converging lines are said to be “in perspective.” Think of railroad tracks that vanish together on the horizon.

This only happens if the tracks are on level ground. Railroad tracks that run downhill will converge toward a vanishing point below the horizon. This is also characteristic of vanishing points defined by connecting similar objects with their shadows in photographs. The second diagram

and Peary's photograph near Camp Jesup illustrate this principle. The vanishing point (VP), found by drawing lines (orange) from the object to the shadow it casts, is below the horizon and outside the frame of the photograph.

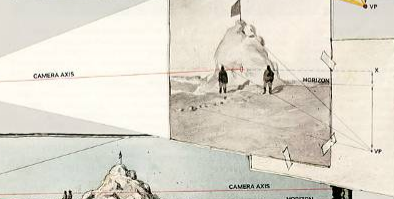
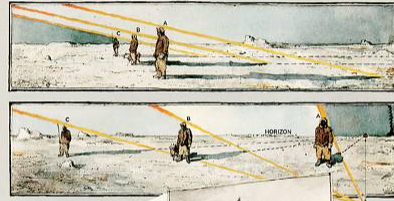
It next must be ascertained



how far the camera was tilted up or down: An exact center point is found by drawing diagonals from the corners of a complete negative or contact print. A line (X) drawn through that point parallel to the actual horizon provides the basis for finding the camera tilt. This was the vanishing point, horizon, and camera axis determined for Peary's “pinnacle picture,” which he took near Camp Jesup

(left and diagrams at bottom). Next the focal length of the lens must be known to find the angle between the sun and the camera axis, and between the sun and horizon. With the help of the Eastman Kodak Company, the Foundation determined that Peary used a Number 4 Folding Kodak with a focal length of 6.74 inches. The rest is mathematics. Five equations determine the relationships between these

angles and fix a final angle for the sun. For this photograph the angle of elevation of the sun is 6.8 degrees. The 1909 *Nautical Almanac* gives the elevation of the sun near the Pole on April 17, 1909, at 6.7 degrees. The average of five photographs indicates that Peary was close to his asserted position. The Foundation's conclusion: “The pictures were taken in the very close vicinity of the Pole.”

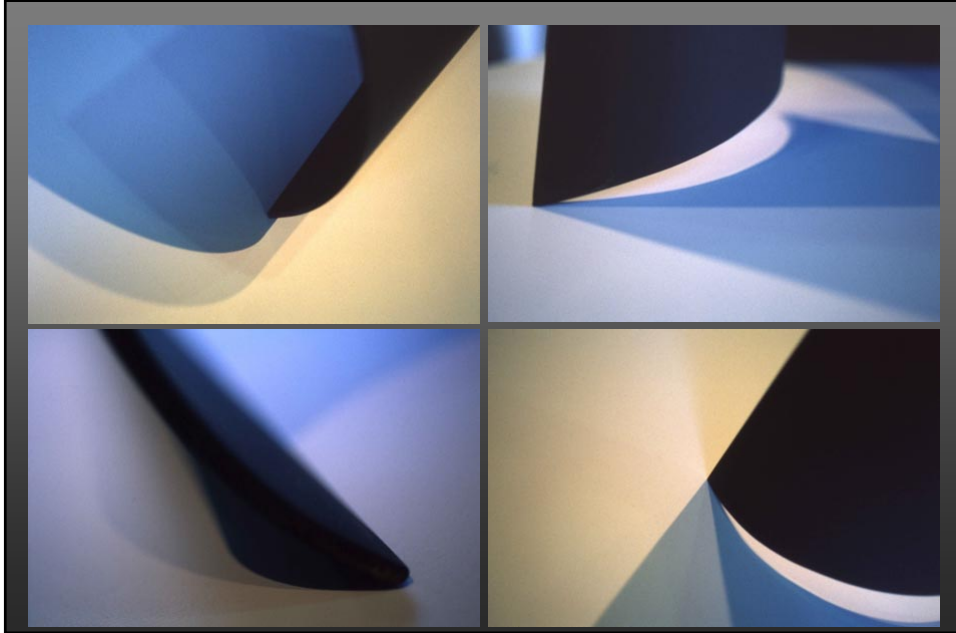


LIGHT is – To The Photographer



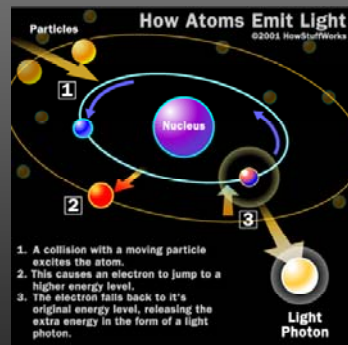
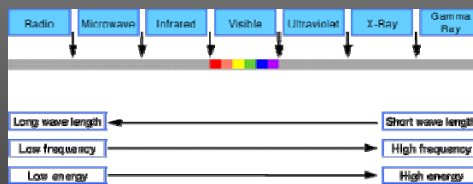
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LIGHT is – *To The Photographer*



LIGHT is - *To The Scientist*

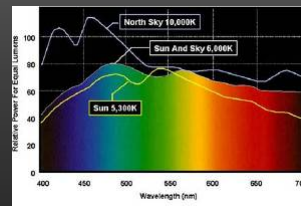
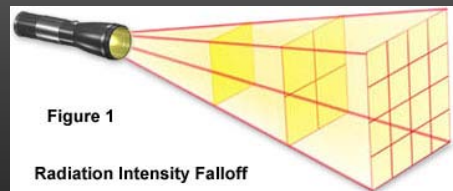
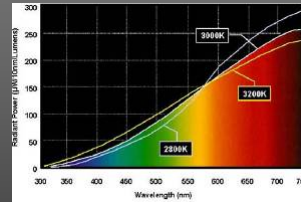
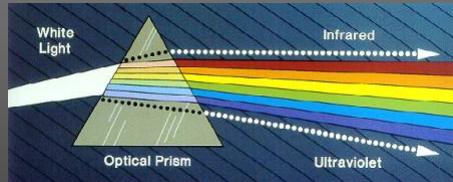
- For the Technician or Scientist, it is the **visible spectrum** – that part of the spectrum of electromagnetic energy that excites our neurological visual system that enables us to see.



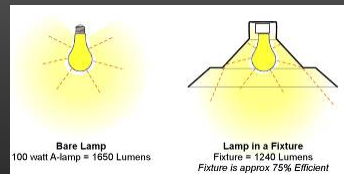
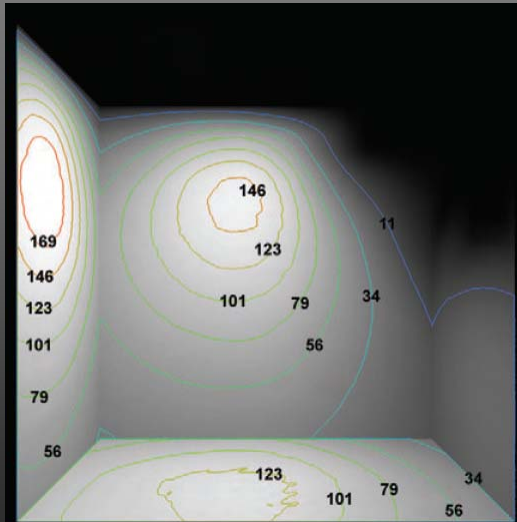
What is Light?

LIGHT is - To The Scientist

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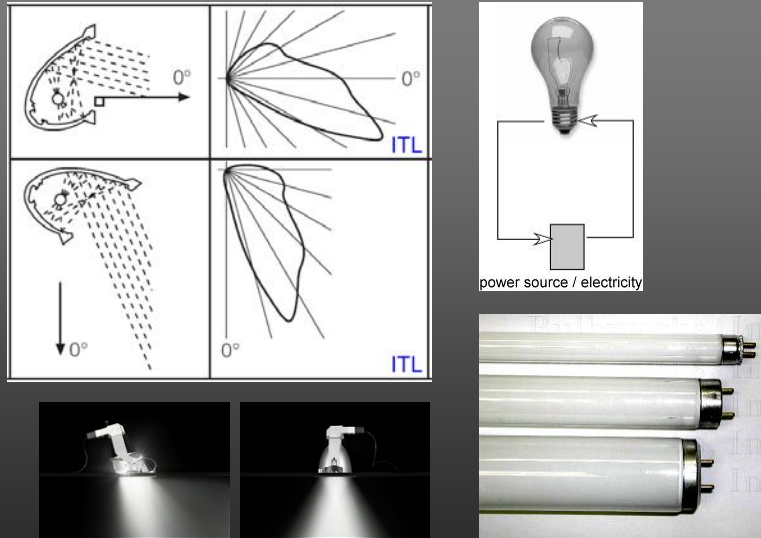


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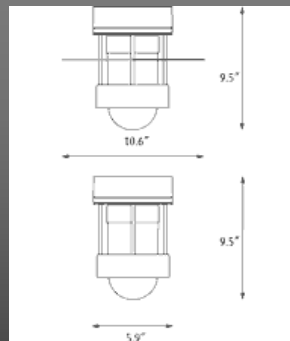


What is Light?

LIGHT is - *To The Industrial Designer*



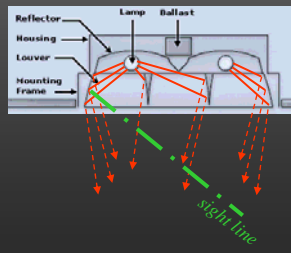
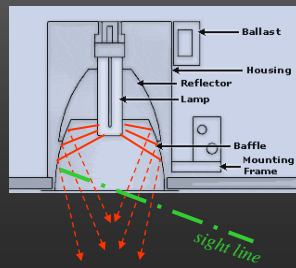
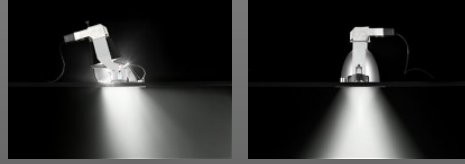
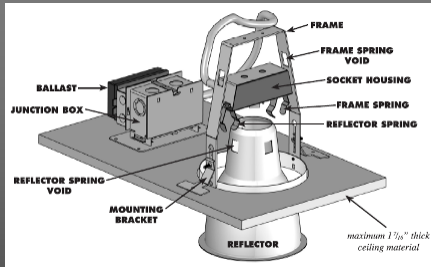
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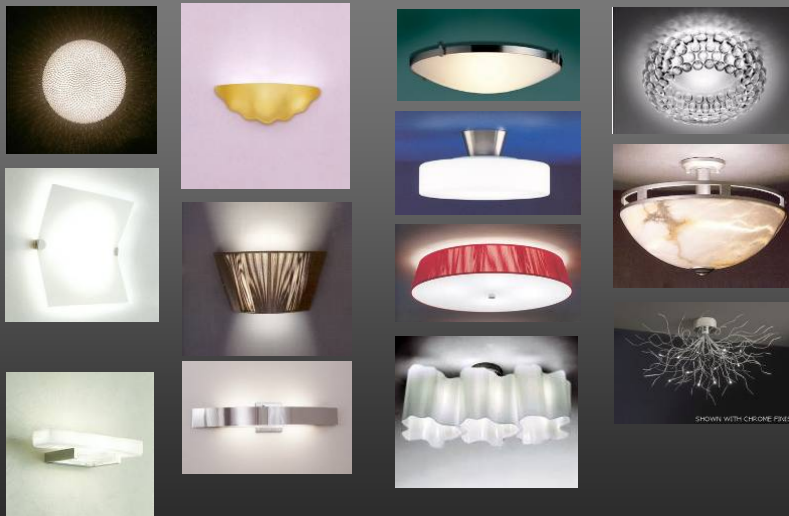
- The Industrial or Product Designer looks at light as a physical object, designed to satisfy a lighting need in a stylistically interesting package.

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LIGHT is - To The Industrial Designer

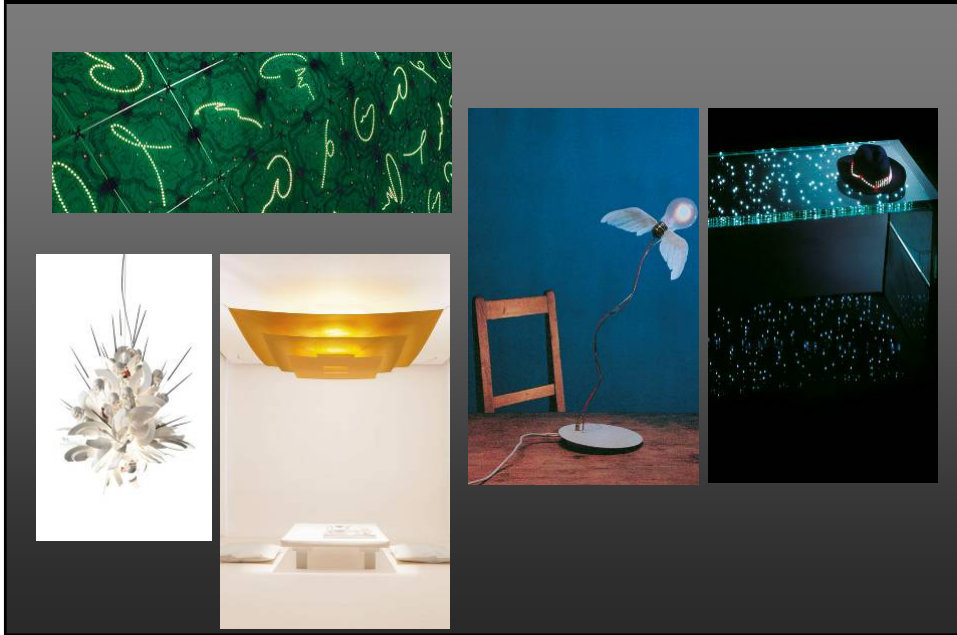


LIGHT is - To The Industrial Designer



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What is Light?

LIGHT is – *To The Environmental Designer*

The Architect and Interior Designer are interested in the environmental impact of **light**.

- - creating an atmosphere
- - creating a sense of space, both physically and experientially/psychologically
- -describing materials and surfaces
- -meeting the needs of use of the space



Designing with **Light**

While our primary point of view as Interior Designers is environmental, all other considerations:

- scientific,
- poetic,
- artistic,
- industrial design,

impact and inform our decisions as we develop a **Lighting Design**

What is Light?

Designing with Light



The majority of the information that we receive about the world around us comes through our eyes.

Light is not only an essential prerequisite, it is the medium by which we are able to see.

Through its intensity, the way it is distributed and through its properties, light creates specific conditions which can influence our perception. Lighting design is, in fact, the planning of our visual environment.

Good lighting design aims to create perceptual conditions which allow us to work effectively and orient ourselves safely while promoting a feeling of well-being in a particular environment.

LIGHT is – *To The Environmental Designer*



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