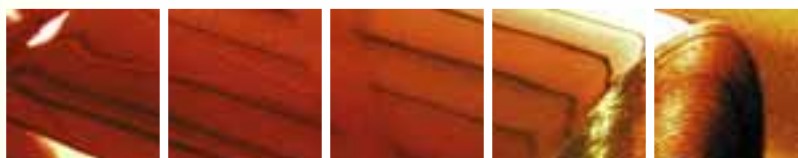
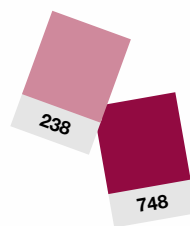


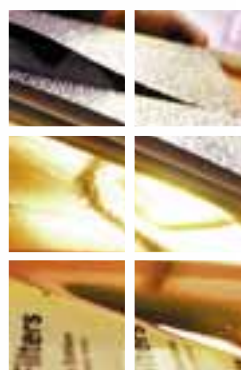
technical filters



The LEE range of technical filters has been developed to accurately convert and manipulate light sources with a high degree of accuracy for technical situations. A full range of daylight, tungsten and fluorescent conversions, neutral densities, diffusers, reflectors and scrims, are all available in a variety of sizes and materials to suit the required job.

■ *A touch of art, a lot of science.*

■ Conversion Chart	35
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■ Protection Media	39
■ Diffusion Media	40



■ *In addition to our broad range of lighting filter, we also produce the highest quality camera filters in both resin and polyester.*

conversion chart

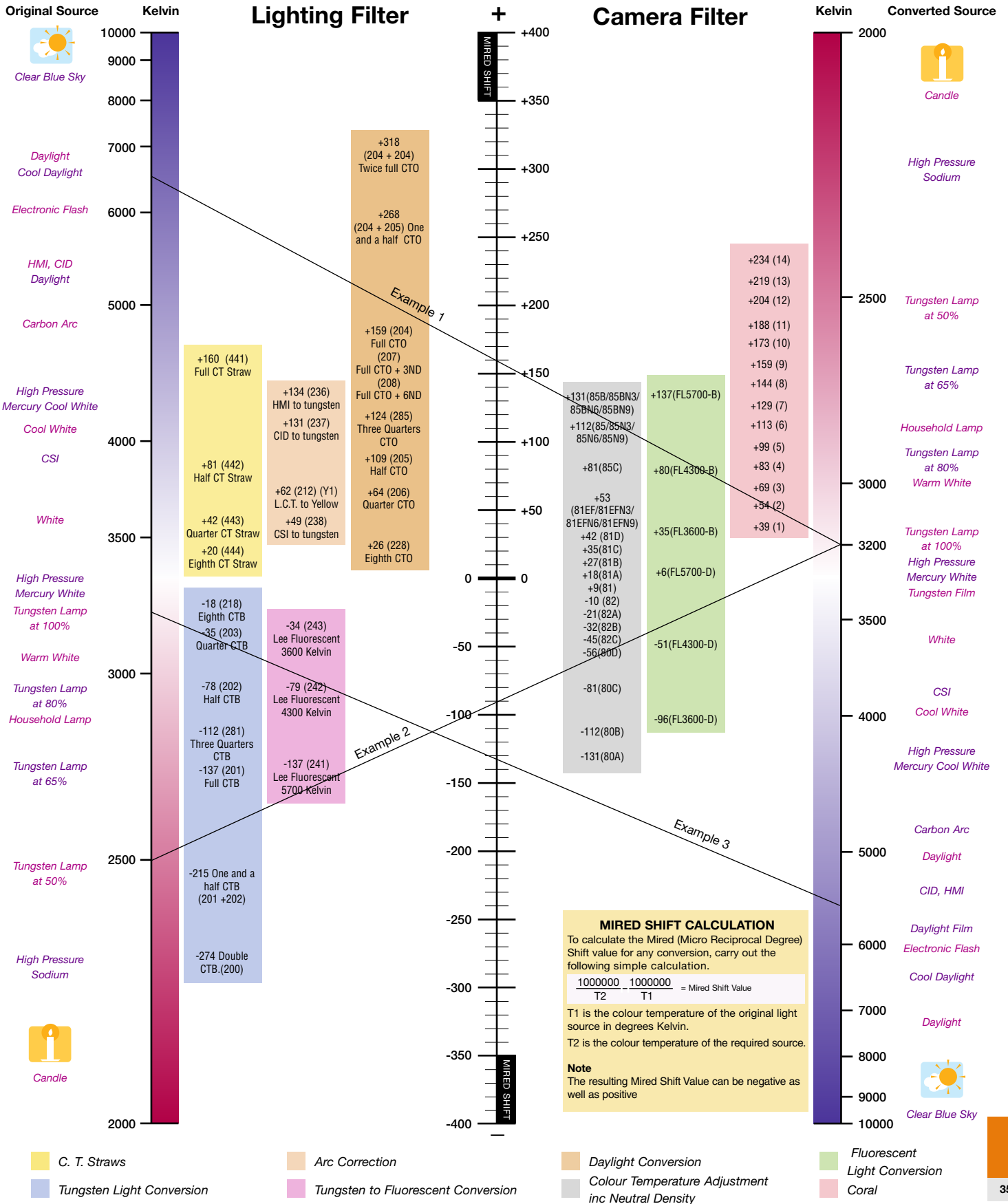
How to use

Simply draw a line from the Colour Temperature value of your Original Light Source, to that of the required Source. Where the line crosses the central band, read off the Mired Shift value. For your convenience we have added both our Lighting and Camera Filters at their appropriate positions in relation to the Mired Shift Scale. The Lighting Filters are positioned on the left of the Mired Shift Scale, whilst the Camera Filters are on the right.

Example 1 (Lighting Filter)

To convert an original source of 6500K to 3200K. The line has been drawn as an example. You will note that it crosses the central band at just over +150 Mired Shift. This indicates that the Filter

required is 204 Full CTO (also available with two degrees of Neutral Density).



product

description

Kelvin

Mired
Shift

Transmission
Y%

Absorption

Chromaticity Co-ordinates
x y

(Measured to source C, Correlated Colour Temperature of 6774K)

Tungsten Light Conversion

200	Double CTB	Converts Tungsten to Daylight.	3200K to 26000K approx	-274	16.2	0.79	0.179	0.155
201	Full CTB	Converts Tungsten to Photographic Daylight.	3200K to 5700K	-137	34.0	0.47	0.228	0.233
281	Threequarters CTB	Converts Tungsten to Daylight.	3200K to 5000K	-112	45.5	0.35	0.239	0.258
202	Half CTB	Converts Tungsten to Daylight.	3200K to 4300K	-78	54.9	0.26	0.261	0.273
203	Quarter CTB	Converts Tungsten to Daylight.	3200K to 3600K	-35	69.2	0.16	0.285	0.294
218	Eighth CTB	Converts Tungsten to Daylight.	3200K to 3400K	-18	81.3	0.09	0.299	0.307

Daylight Conversion

204	Full CTO	Converts Daylight to Tungsten Light.	6500K to 3200K	+159	55.4	0.26	0.437	0.392
285	Threequarters CTO	Converts Daylight to Tungsten Light.	6500K to 3600K	+124	61.3	0.21	0.400	0.387
205	Half CTO	Converts Daylight to Tungsten Light.	6500K to 3800K	+109	70.8	0.15	0.374	0.364
206	Quarter CTO	Converts Daylight to Tungsten Light.	6500K to 4600K	+64	79.1	0.10	0.346	0.346
223	Eighth CTO	Converts Daylight to Tungsten Light.	6500K to 5550K	+26	85.2	0.07	0.328	0.332
207	Full CTO +.3ND	Converts Daylight to Tungsten and reduces light 1 Stop.	6500K to 3200K	+159	32.5	0.49	0.435	0.386
208	Full CTO +.6ND	Converts Daylight to Tungsten and reduces light 2 Stops.	6500K to 3200K	+159	15.6	0.81	0.442	0.394
441	Full CT Straw	Converts Daylight to Tungsten Light with yellow bias.	6500K to 3200K	+160	57.3	0.24	0.426	0.407
442	Half CT Straw	Converts Daylight to Tungsten Light with yellow bias.	6500K to 4300K	+81	71.2	0.15	0.370	0.378
443	Quarter CT Straw	Converts Daylight to Tungsten Light with yellow bias.	6500K to 5100K	+42	79.8	0.10	0.338	0.349
444	Eighth CT Straw	Converts Daylight to Tungsten Light with yellow bias.	6500K to 5700K	+20	83.1	0.08	0.323	0.332
604	Full CT Eight Five	Converts daylight to tungsten with a red bias.	6500K to 3200K	+159	55.9	0.25	0.422	0.389

product

description

Mired
Shift

Transmission
Y%

Absorption

Stop Value

Note

Polariser

239	Polariser	Made from 0.006" (150 micron) Triacetate. Reduces glare and reflection. Use with LEE Polarising Camera Filter.	+19	50.0	0.3	1	single sheet
				38.0	0.42	1 1/3	Axis uncrossed (double sheet)
				<.05	>3	>10	Axis crossed (double sheet)

product

description

Kelvin

Mired
Shift

Transmission
Y%

Chromaticity Co-ordinates
x y

(Measured to source C, Correlated Colour Temperature of 6774K)

Neutral Density

298 .15ND	Reduces light 1/2 Stop, without changing colour.	70.2	0.15	0.311	0.319
209 .3ND	Reduces light 1 Stop, without changing colour.	50.0	0.30	0.310	0.319
210 .6ND	Reduces light 2 Stops, without changing colour.	25.0	0.60	0.308	0.317
211 .9ND	Reduces light 3 Stops, without changing colour.	12.3	0.90	0.310	0.322
299 1.2ND	Reduces light 4 Stops, without changing colour.	6.3	1.18	0.308	0.315

acrylic panels

These panels are manufactured specifically for LEE and exhibit the same degrees of colour accuracy and consistency as our range of lighting filters.

Specifically for use over windows for correcting daylight, these hardwearing panels can be cut to size and installed permanently, or used on location again and again.

The panels are available in a range of Colour Temperature Oranges and Neutral Densities, including combinations that are unique to LEE Filters.

The panels are available in two sizes:

Size	Thickness	Weight	Note
2.44m x 1.22m (8' x 4')	3mm (1/8")	9.6kg (21lbs)	All panels available in this size
2.44m x 1.52m (8' x 5')	3mm (1/8")	12kg (26.5lbs)	Only A204, A209, A210 & A211 available in this size

product

description

Mired
Shift

Transmission
Y%

Daylight Conversion

A204 Full CTO	Converts Daylight to Tungsten Light.	+175	57.2
A205 Half CTO	Converts Daylight to Tungsten Light.	+90	72.6
A207 Full CTO + .3ND	Converts Daylight to Tungsten and reduces light 1 Stop.	+175	30.2
A208 Full CTO + .6ND	Converts Daylight to Tungsten and reduces light 2 Stops.	+175	13.8

Neutral Density

A209 .3ND	Reduces light 1 Stop, without changing colour.	0	48.0
A210 .6ND	Reduces light 2 Stops, without changing colour.	0	22.2
A211 .9ND	Reduces light 3 Stops, without changing colour.	0	13.1

product

description

Transmission Y% Absorption Chromaticity Co-ordinates
x y
(Measured to source C, Correlated Colour Temperature of 6774K)

Fluorescent Correction System

241	LEE Fluorescent 5700 Kelvin	Converts Tungsten to Fluorescent light of 5700K (cool white/daylight).	27.4	0.56	0.231	0.290
242	LEE Fluorescent 4300 Kelvin	Converts Tungsten to Fluorescent light of 4300K (white).	37.3	0.43	0.262	0.346
243	LEE Fluorescent 3600 Kelvin	Converts Tungsten to Fluorescent light of 3600K (warm white).	45.7	0.34	0.286	0.370
219	LEE Fluorescent Green	General Tungsten to Fluorescent correction for use when colour temperature is unknown.	31.0	0.51	0.219	0.334

The above correction filters are to be used in conjunction with an appropriate LEE FL-B Fluorescent to Tungsten or LEE FL-D Fluorescent to Daylight camera filter.

Plus Green - Used on Daylight and Tungsten light sources to provide green cast when used in conjunction with discharge lighting.

244	LEE Plus Green	Approximately equivalent to CC30 Green camera filter.	74.2	0.12	0.324	0.388
245	Half Plus Green	Approximately equivalent to CC15 Green camera filter.	81.7	0.08	0.319	0.355
246	Quarter Plus Green	Approximately equivalent to CC075 Green camera filter.	84.6	0.07	0.315	0.337
278	Eighth Plus Green	Provides very slight green cast.	87.7	0.06	0.313	0.327

The above correction filters are to be used in conjunction with an appropriate LEE FL-B Fluorescent to Tungsten or LEE FL-D Fluorescent to Daylight camera filter.

Minus Green - Used on lighting to eliminate unwanted green cast created by discharge light sources on film.

247	LEE Minus Green	Approximately equivalent to CC30 Magenta camera filter.	57.8	0.22	0.325	0.279
248	Half Minus Green	Approximately equivalent to CC15 Magenta camera filter.	72.0	0.14	0.317	0.297
249	Quarter Minus Green	Approximately equivalent to CC075 Magenta camera filter.	82.4	0.08	0.312	0.307
279	Eighth Minus Green	Provides very slight correction.	86.5	0.06	0.312	0.311

Ultra Violet Absorption

226	LEE UV	Transmission of less than 50% at 410nms.	91.5	0.04	0.314	0.321
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Arc Correction and Effect

212	LCT Yellow (Y1)	Reduces Colour Temperature of low carbon arcs to 3200K	88.7	0.05	0.340	0.363
213	White Flame Green	Corrects White Flame Carbon arcs by absorbing ultra violet	80.0	0.10	0.317	0.359
230	Super Correction LCT Yellow	Converts Yellow carbon arc (of low colour temperature) to Tungsten.	41.9	0.38	0.367	0.368
232	Super Correction White Flame Green to Tungsten	Converts White Flame arc to 3200K, for use with Tungsten film.	37.4	0.43	0.423	0.385
236	HMI (to Tungsten)	Converts HMI to 3200K, for use with Tungsten film.	58.2	0.24	0.426	0.376
237	CID (to Tungsten)	Converts CID to 3200K, for use with Tungsten film.	38.5	0.41	0.430	0.365
238	CSI (to Tungsten)	Converts CSI to 3200K, for use with Tungsten film.	29.8	0.53	0.372	0.331

product			description	Transmission	Absorption	Chromaticity	Co-ordinates	
				Y%		x	y	
				(Measured to source C, Correlated Colour Temperature of 6774K)				
	741	Mustard Yellow		Spooky when used in haze. Removes some red and blue. Works best with daylight bulbs. Sodium lamp effect.	3.3	1.48	0.506	0.491
	642	Half Mustard Yellow		Half strength Sodium light effect, designed for use with daylight sources.	13.7	0.86	0.500	0.496
	643	Quarter Mustard Yellow		Quarter strength Sodium light effect, designed for use with daylight sources.	31.3	0.50	0.483	0.493
	650	Industry Sodium		Used on tungsten to blend with Sodium light	34.1	0.47	0.397	0.424
	651	Hi Sodium		Used on tungsten to create a High Pressure Sodium look.	48.8	0.31	0.444	0.396
	652	Urban Sodium		Used on tungsten to create the orange glow associated with Sodium light	21.9	0.66	0.535	0.399
	653	Lo Sodium		Used on tungsten to create a Low Pressure Sodium look.	2.4	1.62	0.540	0.443

reflection media

product	description	special note
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Reflector

271 Mirror Silver	Produces hard reflection. White backed.	Available in 6.10m x 1.52m (20'x60") rolls
272 Soft Gold Reflector	Produces soft reflection. White backed. Mired Shift +45.	Available in 6.10m x 1.52m (20'x60") rolls
273 Soft Silver Reflector	Produces soft reflection. White backed.	Available in 6.10m x 1.52m (20'x60") rolls
274 Mirror Gold	Produces hard reflection. White backed. Mired Shift +45.	Available in 6.10m x 1.52m (20'x60") rolls

Scrim

270 LEE Scrim	Perforated reflector producing a very soft reflection. Silver on one side and black on reverse.	Stop value 1½ when used as a filter, Transmission 36%.
275 Black Scrim	A flexible perforated material that is black on both sides. Can be used on windows to reduce light intensity, without causing any unwanted reflections.	Stop value 1½ when used as a filter, Transmission 36%.

protection media

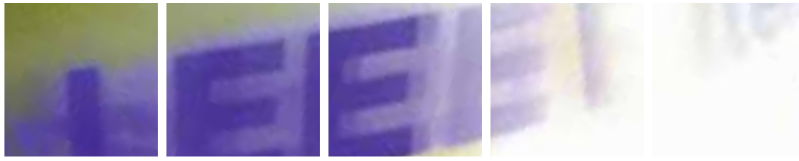
product	description	Transmission	Absorption	Chromaticity	Co-ordinates
		Y%		x	y
		(Measured to source C, Correlated Colour Temperature of 6774K)			

Heat Shield

269 LEE Heat Shield	A transparent flexible film used to extend the life of a filter. The shield should be placed between the light source and the filter allowing distance between the shield and the filter. Air should be allowed to circulate freely around the LEE Heat Shield.	91.0	0.04	0.311	0.317
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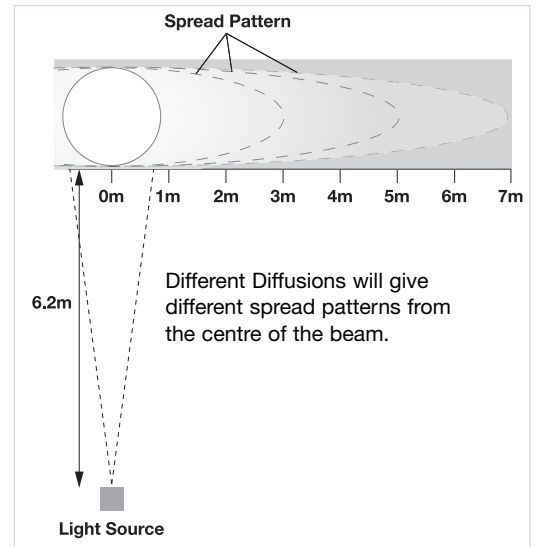
Foil

280 Black Foil	Used to reduce unwanted light spill or to control unwanted light reflection.	Available in two roll sizes 7.62m x 0.61m (25' x 24") 15.24m x 0.30m (50' x 12")			
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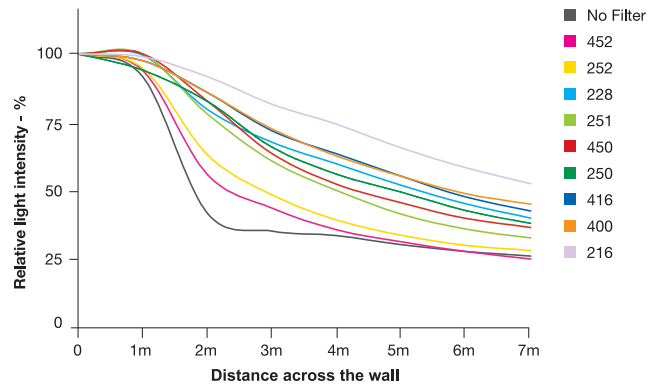


The illustrations on these two pages show how a light beam softens when using different types of diffusion media i.e. Diffusions, Frosts, Flexi-Frosts, Grid Cloths and Spuns.

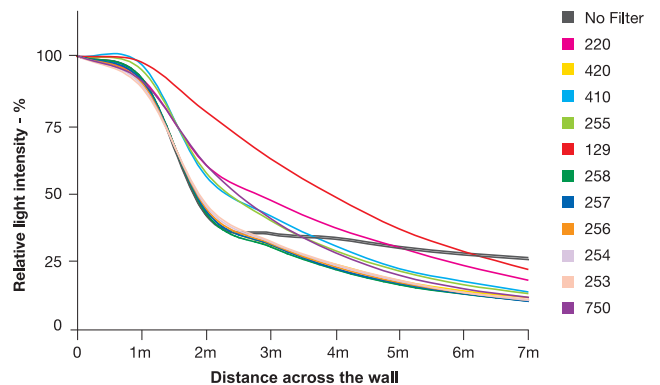
A focused follow spot luminaire, 6.2m from a wall was used to obtain the information represented here. Light intensity readings were taken horizontally across the wall from the centre of the beam. The information shown should only be used for comparing the relative light spread of each of the different filters.



	% T	Stop Value	Non/ Flame	ILLUSTRATIONS
DIFFUSIONS - Spreads the projected beam of light over the subject, some loss of light will possibly be seen. The greater the diffusion, the greater and more even the resultant spread of light. Shadows are reduced. Used to smooth out beam scallops when lighting cycloramas or in tight spaces.				
No Filter				
452 Sixteenth White Diffusion	>85	<1/4	NFR	
252 Eighth White Diffusion	>85	<1/4	NFR	
228 Brushed Silk	60	3/4	NFR	
251 Quarter White Diffusion	80	1/3	NFR	
450 Three Eighth White Diffusion	63	2/3	NFR	
250 Half White Diffusion	60	3/4	NFR	
416 Three Quarter White Diffusion	50	1	NFR	
400 LEELux	36	1 1/2	NFR	
216 White Diffusion	36	1 1/2	NFR	



FROSTS - Frost is used for a variety of applications offering low to medium diffusion to a beam of light while maintaining the shape and beam center.				
No Filter				
220 White Frost	39	1 1/3	FR	
420 Light Opal Frost	>85	<1/4	NFR	
410 Opal Frost	71	1/2	NFR	
255 Hollywood Frost	83	<1/3	NFR	
129 Heavy Frost	25	2	FR	
258 Eighth Hampshire Frost	>85	<1/4	NFR	
257 Quarter Hampshire Frost	>85	<1/4	NFR	
256 Half Hampshire Frost	>85	<1/4	NFR	
254 New Hampshire Frost	>85	<1/4	FR	
253 Hampshire Frost	>85	<1/4	NFR	
750 Durham Frost	>85	<1/4	NFR	

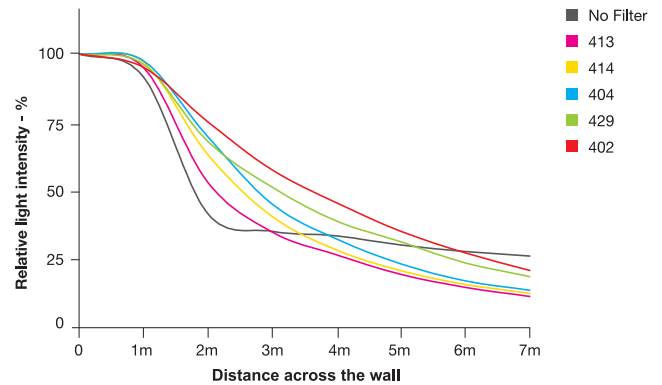




	% T	Stop Value	Non/ Flame	ILLUSTRATIONS
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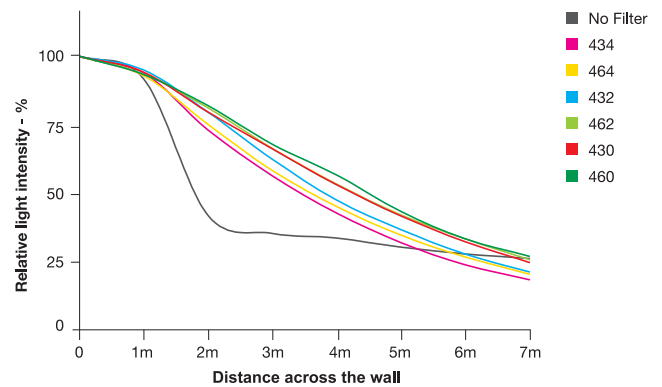
FLEXI FROSTS - Soft, quite and pliable frosts which can be sewn for use on large frames. Waterproof, durable and thick makes them perfect for windy and rainy weather conditions.

No Filter				
413 Half Highlight	84	1/4	FR	
414 Highlight	40	1 1/3	FR	
404 Half Soft Frost	36	1 1/2	FR	
429 Quiet Frost	18	2 1/2	FR	
402 Soft Frost	12	3	FR	



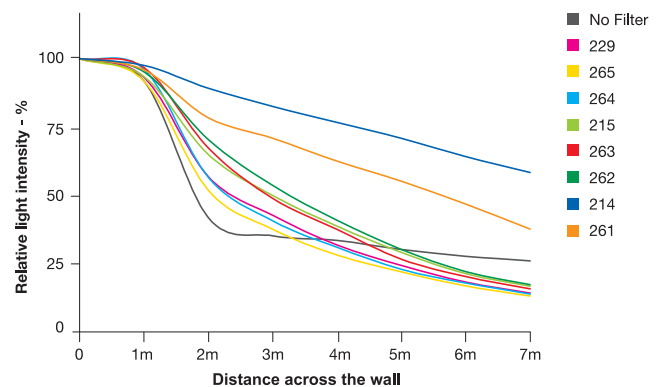
GRID CLOTHS - A reinforced material containing diffusion properties ranging from medium to dense. Grid cloth creates the effect of a shadowless beam of light.

No Filter				
434 Quarter Grid Cloth	60	3/4	NFR	
464 Quiet Quarter Grid Cloth	47.5	1	NFR	
432 Light Grid Cloth	30	1 3/4	NFR	
462 Quiet Light Grid Cloth	22.5	2 1/4	NFR	
430 Grid Cloth	18	2 1/2	NFR	
460 Quiet Grid Cloth	15	2 3/4	NFR	



SPUNS - Creates an overall diffusion, softens shadows and leaves beam intact.

No Filter				
229 Quarter Tough Spun	60	3/4	NFR	
265 Tough Spun FR - 1/4	60	3/4	FR	
264 Tough Spun FR - 3/8	50	1	FR	
215 Half Tough Spun	36	1 1/2	NFR	
263 Tough Spun FR - 1/2	41	1 1/3	FR	
262 Tough Spun FR - 3/4	32	1 2/3	FR	
214 Full Tough Spun	18	2 1/2	NFR	
261 Tough Spun FR - Full	25	2	FR	



product		description		Transmission %	Stop value	Special Notes
Non-Flame Retardant Frost						
	410	Opal Frost	Used for softening spotlight beam edges without altering shape (23 micron polyester base).	71	1/2	
	420	Light Opal Frost	Similar characteristics to Opal Frost, but less diffuse (36 micron polyester base).	>85	<1/4	
	258	Eighth Hampshire Frost	Extra Light frost effect.	>85	<1/4	
	257	Quarter Hampshire Frost	Extra Light frost effect.	>85	<1/4	
	256	Half Hampshire Frost	Extra Light frost effect.	>85	<1/4	
	253	Hampshire Frost	Light frost effect.	>85	<1/4	
	255	Hollywood Frost	Light frost effect - softens edges.	83	<1/3	
	750	Durham Frost	A frost that almost completely softens shutter edges and removes hot spots.	>85	<1/4	
	720	Durham Daylight Frost	Smoothes PAR or flood washes of large areas. Useful for houselights; good for entrances from natural light.	32.3	12/3	Full CT Blue
	717	Shanklin Frost	201 with frost to soften the beam of profile units.	37	1 1/2	Full CT Blue
	718	Half Shanklin Frost	202 with frost to soften the beam of profile units.	56	3/4	Half CT Blue
	705	Lily Frost	Smoothes PAR or flood washes of large areas. Useful for houselights; a good colour wash for evening events.	38	1 1/3	Colour = 704
	791	Moroccan Frost	Smoothes PAR or flood washes of large areas. Useful for houselights; good for interior colour washes.	57	3/4	Colour = 790
	749	Hampshire Rose	Combines flesh tone warmer 154 with some Hampshire Frost.	74	1/2	Colour = 154
	224	Daylight Blue Frost	Used for soft light effects with the addition of tungsten correction 201.	22	2 1/4	Full CT Blue
	225	Neutral Density Frost	Used for soft light effects with the addition of 0.6 Neutral Density.	25	2	.6 Neutral Density

Grid Cloth

430 Grid Cloth		18	2 1/2		
432 Light Grid Cloth	A waterproof textile/fabric diffusion that is reinforced to allow it to be sewn or grommetted - ideal for attaching to large frames. Comes in three weights.	30	1 3/4		Rolls only 1.37m x 7.62m (54" x 25")
434 Quarter Grid Cloth		60	3/4		
460 Quiet Grid Cloth		15	2 3/4		
462 Quiet Light Grid Cloth	A textile/fabric diffusion that is reinforced to allow it to be sewn or grommetted - ideal for attaching to large frames, but that is quiet when used in windy conditions outdoors. Comes in three weights.	22.5	2 1/4		Rolls only 1.37m x 7.62m (54" x 25")
464 Quiet Quarter Grid Cloth		47.5	1		



product

description

Transmission
% Stop value

Special Notes

Non-Flame Retardant Diffusion

216	White Diffusion	Used for soft light effects. Manufactured on a tough Polyester base in a range of seven strengths.	36	1 1/2	Rolls also available in 1.52m (60") width
416	Three Quarter White Diffusion		50	1	
250	Half White Diffusion		60	3/4	Rolls also available in 1.52m (60") width
450	Three Eighth White Diffusion		63	2/3	
251	Quarter White Diffusion		80	1/3	Rolls also available in 1.52m (60") width
252	Eighth White Diffusion		>85	<1/4	
452	Sixteenth White Diffusion		>85	<1/4	
400	LEELux	A dense white diffuser used for soft light effects (125 micron polyester base).	36	1 1/2	
217	Blue Diffusion	As White Diffusion but with the addition of Eighth CTB.	36	1 1/2	1/8 CT Blue
228	Brushed Silk	Directional soft light effect used for scattering light in one direction only.	60	3/4	

Tough Spun

214	Full Tough Spun	Softens light, reduces intensity. Manufactured from non-woven Polyester.	18	2 1/2	
215	Half Tough Spun		36	1 1/2	Rolls only 7.62 x 1.22m (25' x 48")
229	Quarter Tough Spun		60	3/4	

product			description		Transmission %	Stop value	Special Notes	
Flame Retardant Frost								
	129	Heavy Frost		Strong diffuser, eliminates nearly all shadows.		25	2	
	220	White Frost		Used for soft light effects.		39	1⅓	
	221	Blue Frost		Used for soft light effects with the addition of 218.		42	1⅓	1/8 CT Blue
	254	New Hampshire Frost		Used to soften the edges of spotlight beams, and to reduce the blue fringe.		>85	<¼	HT only (For sizes see p10-11)
	774	Soft Amber Key 1		Used for producing a warm key light colour.		71	½	
	775	Soft Amber Key 2		Used for producing a warm key light colour.		58	¾	

Flexi Frosts

439 Heavy Quiet Frost	A very strong diffuser but pliable to handle, that virtually eliminates shadows at close distances.	<p>Advantages of this material are the large roll width; lack of noise when handled or used in windy conditions; waterproof for use outdoors, can be sewn or grommetted together for use on large frames; flame retardant.</p> <p>1.52m width, 6.10m length, (60" x 20')</p>	7.8	3 ² / ₃	Thickness 270 microns (11 thou)
402 Soft Frost	A strong diffuser that creates a wide field of soft illumination but is very pliable to handle. Diffusion characteristics similar to 216, falls between 216 and 129.		12.0	3	Thickness 100 microns (4 thou)
429 Quiet Frost	A strong diffuser that creates a wide field of soft illumination but is thicker than the 402 product. Diffusion characteristics similar to 416.		18.4	2 ¹ / ₂	Thickness 325 microns (13 thou)
404 Half Soft Frost	A useful diffuser without too much light loss but very pliable to handle. Diffusion characteristics fall between 251 and 252.		36.2	1 ¹ / ₂	Thickness 100 microns (4 thou)
414 Highlight	A useful diffuser without too much light loss in a thick format. Diffusion characteristics similar to 252.		39.6	1 ¹ / ₃	Thickness 300 microns (12 thou)
413 Half Highlight	A strong frost effect that completely softens the edges of a spotlight beam. Diffusion characteristics similar to 750, falls between 750 and 253.		84.1	1 ¹ / ₄	Thickness 300 microns (12 thou)

Tough Spun

261 Tough Spun FR - Full	Non yellowing flame retardant spun polyester material in five densities to give better light control.	25	2	Rolls only 7.62 x 1.22m (25' x 4')
262 Tough Spun FR - 3 ³ / ₄		32	1 ² / ₃	
263 Tough Spun FR - 1 ¹ / ₂		41	1 ¹ / ₃	
264 Tough Spun FR - 3 ³ / ₈		50	1	
265 Tough Spun FR - 1 ¹ / ₄		60	3 ³ / ₄	