

seven energy saving
**COMPACT
FLUORESCENTS**
from THORN

THORN

Compact Fluorescent Lamps

THORN's constant efforts to optimize light sources and their applications has created this new range of compact fluorescents which, by the choice offered in shapes and wattages, open unique opportunities to the lighting specifier, the Original Equipment Manufacturer and the designer of luminaires. The 2L lamp is now available in no less than 4 sizes and wattages, with higher efficacies reaching 88 lumen/watt in the 40W version. THORN's care in the development of these sources has been taken through to the control gear, lampholders and mounting accessories thus ensuring that all the components are matched in quality and performance to achieve a totally reliable and economical package.

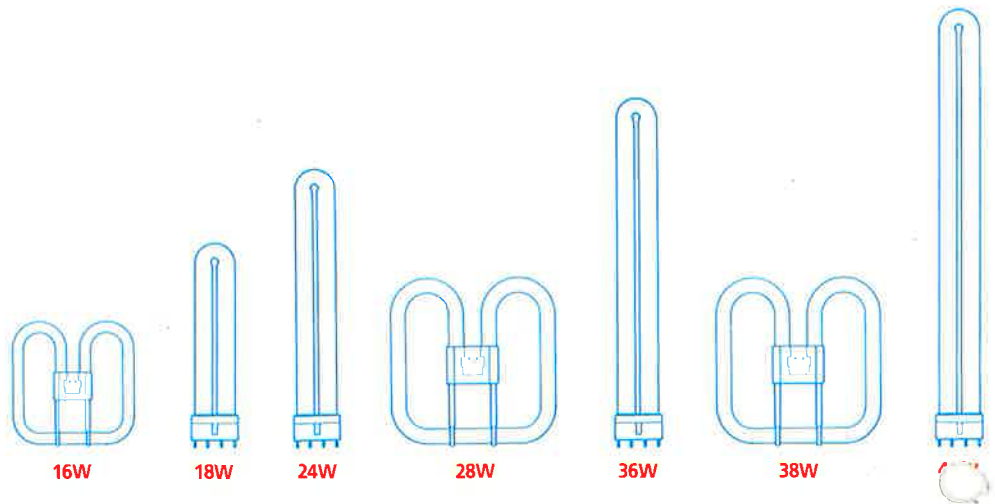
Complete product information and technical advice are available from

SMART & BROWN
Miles Road Mitcham
Surrey CR4 3YX

Telephone 01-640 1221
Telex 25534 TELC G
Telefax 01-685 9625

part of THORN EMI Lamps and Components Ltd

7 wattages with
efficacies of up
to 88 lumen/watt



4 co-ordinated
colour
temperatures
and
a rainbow in
16W 2D

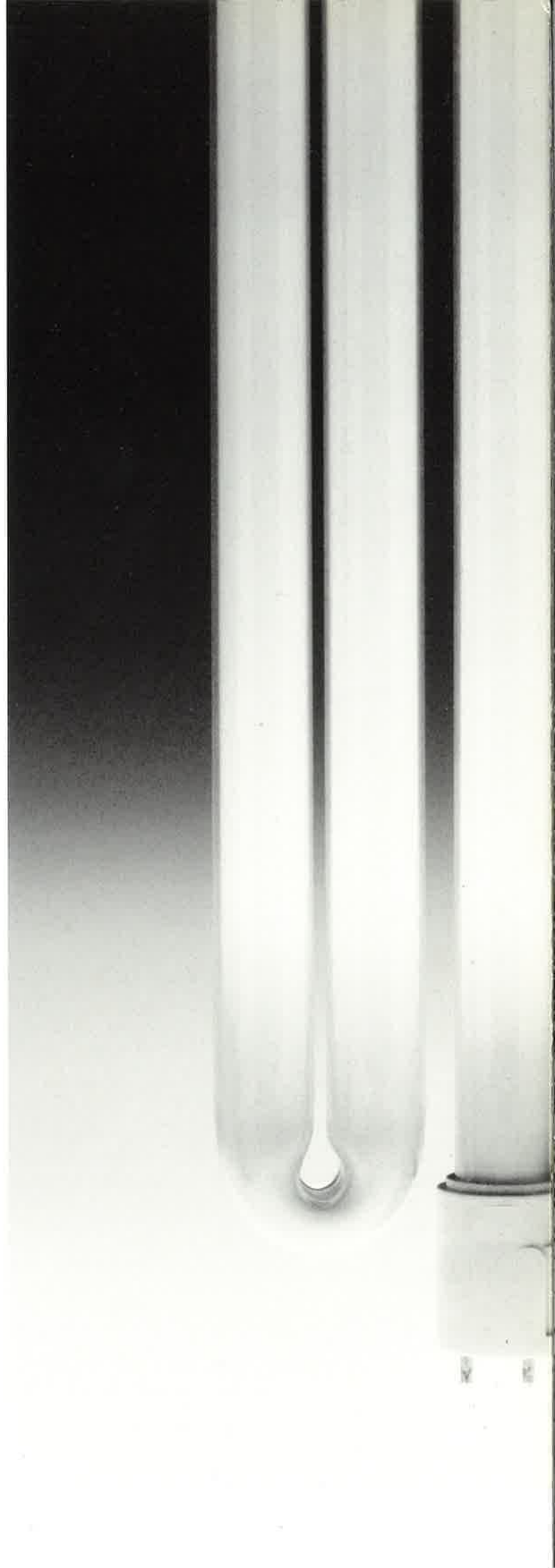
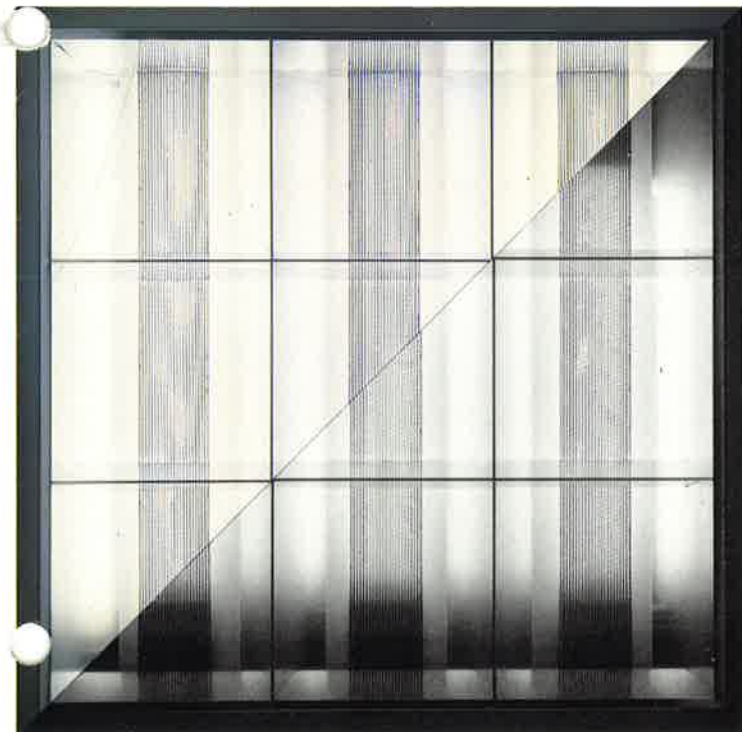
The addition of higher: i.e. 'cooler' colour temperature to the 16W 2D, together with its palette of 7 discreet or saturated colours, gives new inspiration to create exciting lighting environments.

Altogether, the co-ordination of colour temperatures across 2L, 2D and T8 or T12 lamps, allows complete continuity of appearance and rendering across a broad range of luminaires styles, sizes and performances: continuous troffers, battens, decorative linear systems, bulkheads etc.

2L

40W

The unique 'stretched' length of 530mm yields additional watts and produces an exceptional efficacy of 88 lumen/watt. This 2L version is specifically designed for operation with the High Frequency Electronic Ballast which optimizes the lamp's luminous efficacy and achieves 83 lm/w inclusive of circuit losses (twin lamp circuit). The specifications of the High Frequency Electronic Ballasts as shown on page 5. 2L 40W by THORN is the perfect source for low brightness modular luminaires. In the 600 × 600mm luminaire shown, the 2L lamps, top left, fill the entire length of the reflector louvres, maximizing their effectiveness and increasing the efficiency of the luminaire. By contrast the shorter 36W compact fluorescent lamps, bottom right, do not 'reach' and leave areas of the reflectors unutilized or impose more complex and expensive solutions.

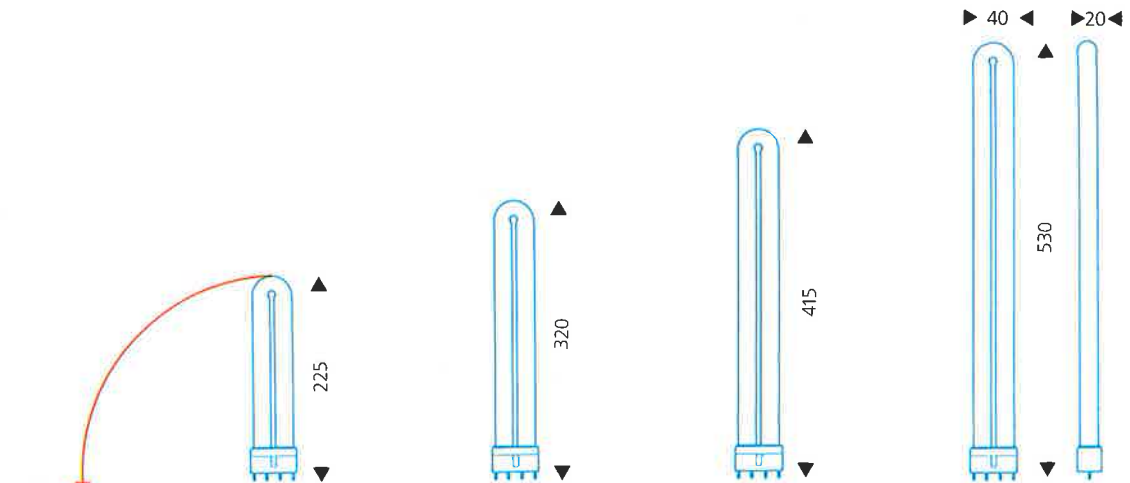


2L

18, 24, 36W

These are all new wattages in the THORN compact fluorescent range. With the same output of conventional tubes but one-third of their length, these lamps will permit the design of small, economical luminaires with closer optical control.

To the Architect or Engineer these advantages mean a greater choice of lighting tools to produce optimal lighting environments with greater cost effectiveness. All 4 wattages of 2L compact fluorescents are coated with Polyflux phosphors in 3000, 3500 and 4000K, thus spanning the range of colour temperatures, from 'warm' to 'cool', appropriate in residential, hotel, office, shop, or store lighting.



LAMP	18	24	36	40
Lamp watts	18	24	36	40
Cap type	2G11(4pin)	2G11(4pin)	2G11(4pin)	2G11(4pin)
Lumen/watt	67	75	81	88
Lumens 100 hours	1200	1800	2900	3500
Lumens 2000 hours	1140	1710	2755	3300
Life average hours	7500	7500	7500	7500
Colour temperature K	3000/3500/4000	3000/3500/4000	3000/3500/4000	3000/3500/4000
Colour rendering index Ra	82	82	82	82
Operating position	VBD±90°	VBD±90°	VBD±90°	VBD±90°

CIRCUITS

Conventional

	18	24	36	40
Lamp starter	external PGSU	external PGSU	external PGSU	NA
Ballast	20SC69557.4	20SC69557.4	40SC69545.4	NA
Capacitor	4mfd±10%	4mfd±10%	4mfd±10%	NA
Lampholder	1324, 1326, 1327, 1328, 1329	1324, 1326, 1327, 1328, 1329	1324, 1326, 1327, 1328, 1329	1324, 1326, 1327, 1328, 1329
High frequency mains electronic ballast	NA	NA	NA	single 40SEB81035.4 twin 2.40SEB81034.4
Central system	12V=40R2906/12 24V=65R2904/24 50V=75R3439/50	12V=40R2906/12 24V=65R2904/24 50V=75R3439/50	12V=40R2906/12 24V=65R2904/24 50V=75R3439/50 110V=75R3440/110	24V=65R2904/24 50V=75R3439/50 110V=75R3440/110

Emergency Lighting Module/battery kit

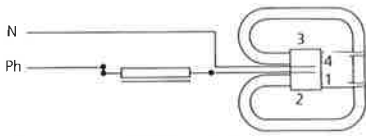
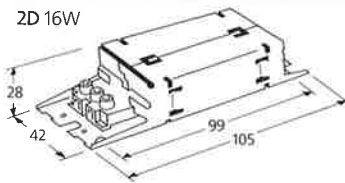
	18	24	36	40
Emergency Lighting Module/battery kit	40H3803.T	40H3803.T	40H3803.T	100H3804.T

For maintained operation, use appropriate conventional or electronic ballast

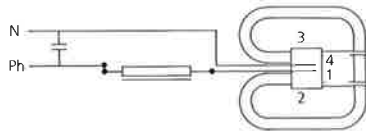
Conventional Control gear

2L, 2D 16, 18, 24, 28, 36W

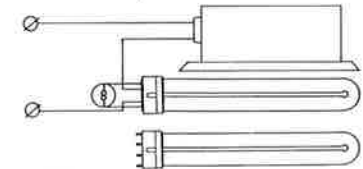
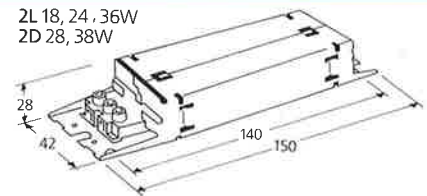
	ballast	supply voltage	weight kg	tw	Δt	starter switch cat. no.	capacitor value
2D 16W 2pin	16SC69562.4	240	0.35	130	55	NA	2mfd \pm 10%
	16SC69562.2	220					
2D 16W 4pin	16SC69562.4	240	0.35	130	55	PGSU	2mfd \pm 10%
	16SC69562.2	220					
2L 18, 24W	20SC69557.4	240	0.64	130	50	PGSU	4mfd \pm 10%
	20SC69557.2	220					
2D 28W	28SC69603.4	240	0.625	130	50	PGSU	4mfd \pm 10%
	28SC69603.2	220					
2L 36, 2D 38W	40SC69545.4	240	0.625	130	50	PGSU	4mfd \pm 10%
	40SC69545.2	220					



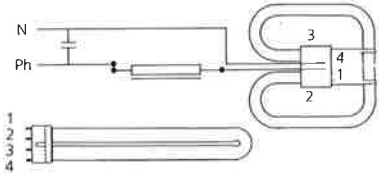
Glowstarter and RIS capacitor are incorporated within lamp cap.



Connect suitable starter switch (PGSU) across terminals 1 & 4.
Connect neutral and ballast leads to terminal 3 & 2.
Terminal number are those marked adjacent to lampholder terminals.



Individual operation 18W, 24W, 36W.



Connect suitable starter switch (PGSU) across terminals 1 & 4.
Connect neutral and ballast leads to terminal 3 & 2.
Terminal number are those marked adjacent to lampholder terminals.

Electronic Ballast

2L 40W

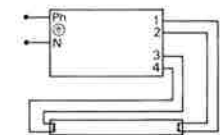
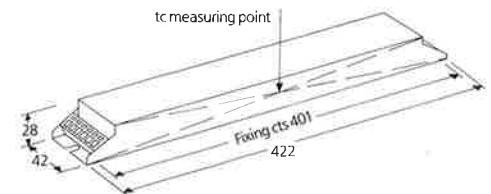
2D 38W

	supply voltage	supply frequency	circuit	weight (g)	tc* (°C)
40SEB 81035.4	240	50/60Hz	single	545	70
40SEB 81035.2	220				
2.40SEB 81034.4	240	50/60Hz	twin	576	70
2.40SEB 81034.2	220				

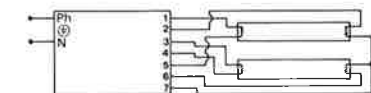
*tc: Rated maximum operating temperature of the ballast case at the indicated place.

The High Frequency Electronic ballast offers many advantages: power savings; improved lamp efficacy; reduced luminaire temperature which may give further gains in efficacy; reduced weight and circuit size; high Power Factor of 0.96 without additional components.

To these advantages are added improved qualities in the light environment: faster, smoother start; no perceptible flicker and no danger of stroboscopic effect; lamp "end-of-life" without annoying attempts to start. Finally, THORN electronic ballast have an innovative input, filter/conditioning circuit that provides a "clean" supply complying with International Standards.



Single lamp circuit diagram



Twin lamp circuit diagram



3500K
16W

THORN EMI
2D
16W

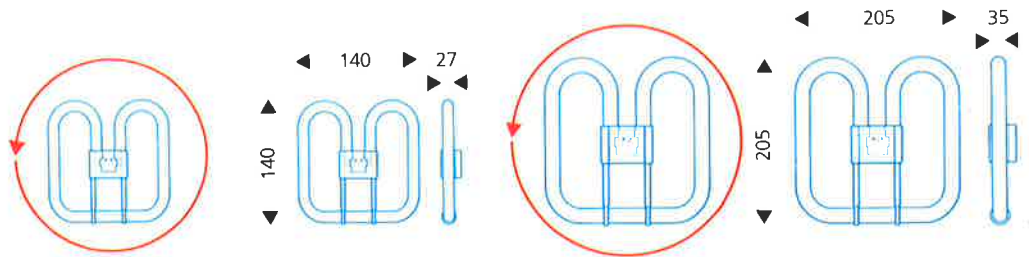
THORN EMI
2D
16W

2D


16, 28, 38W

The unique '2 Dimensional' character of this range of THORN lamps, has already led to the creation of some of the most compact and efficient luminaires ever available to the professional specifier. The 28 and 38W both fit the most used ceiling module of 300 × 300mm, and thus provide alternatives in lumen packages that satisfy energy saving demands in commercial, residential, outdoor amenity or industrial applications. The 4-pin cap versions further enables operation of these sources in emergency, transport lighting and signage.

The 38W may be operated both from conventional or High Frequency Electronic Ballast detailed on page 5. The THORN 16W 2D is also available with 2-pin cap with integral starter switch.



LAMPS

	16	16	28	38
Lamp watts	16	16	28	38
Cap type	GR8(2pin)	GR10q(4pin)	GR10q(4pin)	GR10q(4pin)
Lumen/watt	66	66	73	78
Lumens 100 hours	1050	1050	2050	2950
Lumens 2000 hours	925	925	1800	2600
Life average hours	5000	5000	10000	10000
Colour temperature K	2700/3500	2700/3500	2700/3500	2700/3500
Colour rendering index Ra	82	82	82	82
Operating position	any	any	any	any except 

CIRCUITS

Conventional

Lamp starter	internal	external PGSU	external PGSU	external PGSU
Ballast	16SC69562.4	16SC69562.4	28SC69603.4	40SC69545.4
Capacitor	2mfd±10%	2mfd±10%	4mfd±10%	4mfd±10%
Lampholder	B1664	B1685/B1690	B1685/B1690	B1685/B1690
High frequency mains electronic ballast	NA	NA	NA	single 40SEB81035.4 twin 2.40SEB81034.4

Emergency Lighting

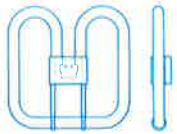
Non-maintained		module 16H3785.T battery H3423/4.8	module 40H3800.T	module 40H3800.T
Maintained		module and battery with mains ballast 16H3824	module/battery kit 40H3803.T with conventional mains ballast	module/battery kit 40H3803.T with conventional mains ballast
Transport or Central DC emergency system Inverter ballast		12V=13R3770/12 24V=13R3660/24	12V=40R2906/12 24V=65R3358/24 or 65R2904/24 35V=40R3626/35 50V=75R3439/50 70V=75R3349/70 110V=75R3440/110	24V=65R2904/24 50V=75R3439/50 110V=75R3440/110

2D

Colour 16W

The palette of seven colours, from pastels to primaries, in this lamp, open intriguing possibilities in a host of applications, whether strictly decorative or functional: for instance the Peach lamp's tones are excellent for residential, hotel, bar lighting.

The primary colours will provide economical, and rapidly changeable, light/colour options for illuminated signs, route indicators, warning signals, or used to differentiate areas, cash points or 'decorate' discos, clubs etc.

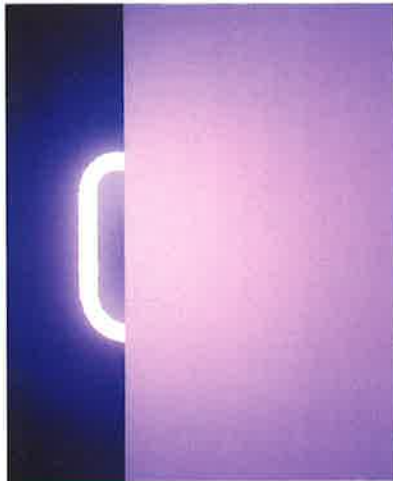


Lumen output at 100 hours

Red	850
Blue	400
Magenta	700
Green	1400
Lemon	1050
Peach	1000
Lilac	575



Red



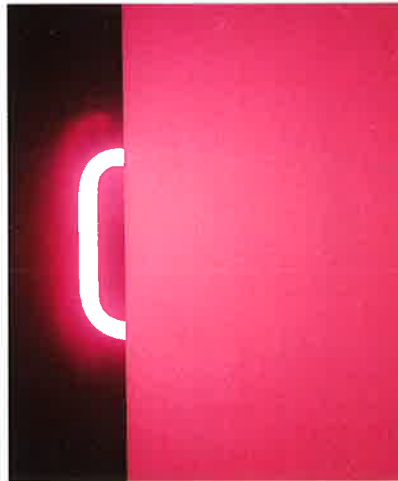
Magenta



Peach



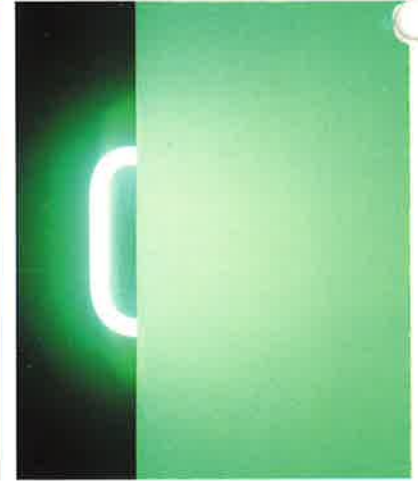
Lemon



Lilac



Blue



Green



Specifications. Whilst great care is taken to give up to date information SMART & BROWN reserve the right to amend any specification without prior notification and all descriptions, illustrations in this publication shall not form part of any contract.

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