



## Polar

### RECESSED SPOTLIGHTS | DALI SERIES

Polar, recessed spotlight has an adaptable angle mechanism, allowing for very precise beam direction. Perfect fit for modern spaces with a wide range of goods needing custom lights like shops and showrooms. Spotlight rotates through 355° and pivots through 50°. Can be equipped with special color light to match various products requirements. Modern, aluminum housing comes in three colors - signal white, jet black and white aluminum – for a perfect blend with the environment.

Polar recessed spotlight come in several series, with various add-on and controls:

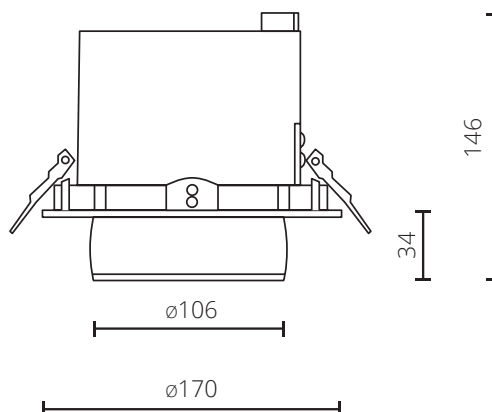
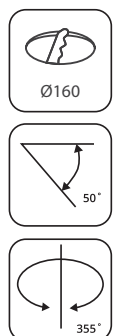
- Polar Non-DALI – the standard for any project in the retail sector
- Polar DALI – with DALI controls for illumination adjustments

### APPLICATION

Grocery & Supermarkets | Retail | Office | Healthcare | Hospitality | DIY

### FEATURES & BENEFITS

- CRI > 80 as standard, up to 98 for certain special color
- 15 color temperatures, including 11 specialized options for food, fashion, art, hospitality and AGI light
- Several optics variants: 4 angles from narrow beams to flood beams
- Luminaire efficiency: 117lm/W @4000K
- Dimmable



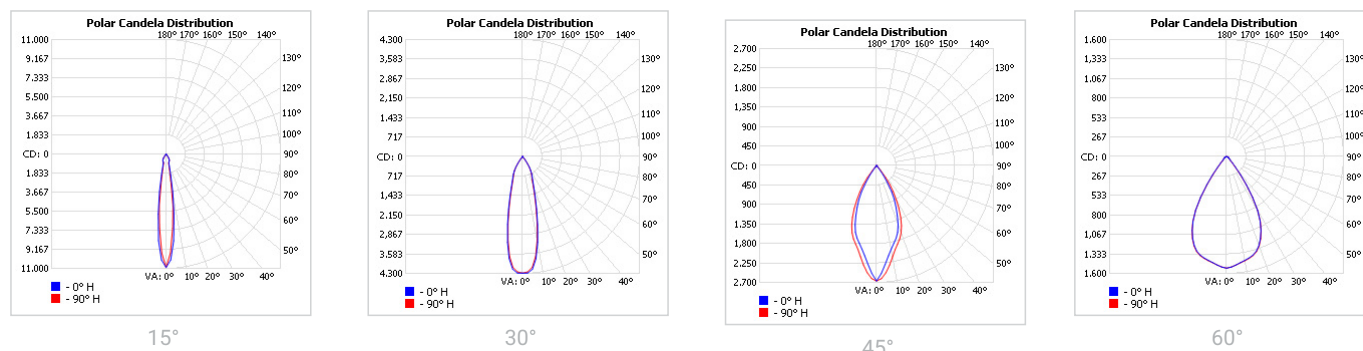
SPECIFICATIONS

Power consumption	12W, 14W, 17W, 20W, 23W, 27W, 29W
Dimensions	D170 x H146 x Ø160mm±1mm
Weight	1.3 kg
Housing materials	Aluminium, glass
IK code	IK02
THD (at 230V, 50Hz, Full load)	<20%
Protection class	Safety class 1
Operating temperature [°C]	-20°C ... +45°C / -4F ... +113F
Operating humidity [%]	10 ÷ 85
Power factor	≥0.95
AC Input [Vac]	220 - 240
Lens angle [°]	15°, 30°, 45°, 60°
Lifespan [h]	50,000
Housing color	○ RAL 9003 - Signal white, ● RAL 9005 - Jet Black, ● RAL 9006 - White Aluminium
Lumen maintenance	L90/B10@50,000h at 25°C
IP factor	IP20
Control optional	DALI
Warranty [years]	5
Storage temperature range [°C]	-20°C ... +55°C / -4F ... +131F
Emergency option	-

#	Standard	Food	Fashion	AGI	ART	AMB
CRI	CRI80	CRI80	CRI95	CRI93	CRI98	CRI80
CCT [K]	2700 / 3000 / 3500 / 4000	BVF / FBS / FZM / FSM / FSH	FAS	AGI 3000 / 3500 / 4000	3000	2200
MacAdam	3	3 / 4 / 4 / 3 / 3	3	3	2	3

CRI - Color rendering, CCT - Color temperature, MacAdam - Color consistency

LIGHT DISTRIBUTION



**TOLERANCES**

**Luminous flux tolerances:** -/+ 5%

**Consumption tolerance:** -/+ 5% for Non-DALI | -/+ 10% for Non-DALI & KIT EM | -/+ 10% for DALI | -/+ 15% for DALI & KIT EM

**BATTERY WARRANTY**

**Non-DALI EM & DALI EM:** 12 months warranty

**Non-DALI & DALI:** -

**MAXIMUM NO. OF LUMINAIRES ON A CIRCUIT**

Luminaire Power(W)	Control type	Circuit Breaker Type					
		B			C		
		20	16	10	20	16	10
8-20W	Non-DALI	62	50	31	104	85	52
23-35W	Non-DALI	24	20	10	47	40	20
42W	Non-DALI	20	16	8	38	32	16
8-20W	DALI	62	50	31	104	85	52
23-27W	DALI	25	21	13	50	42	26
34-42W	DALI	17	14	9	34	28	18

**RISK GROUP**

<b>Standard (CRI80)</b>	RG1
<b>FOOD (BVF, FBS, FSM)</b>	RG1
<b>FOOD ≤35W (FZM, FSH)</b>	RG1
<b>FOOD &gt;35W (FZM, FSH)</b>	RG2
<b>FAS</b>	RG1
<b>AMB2200</b>	RG1
<b>ART</b>	RG1
<b>AGI</b>	RG1
<b>CRI90</b>	RG1
<b>CRI95</b>	RG1
<b>ENT</b>	RG1

**RG1**

The evaluation of photobiological safety is carried out according to the standard IEC 62471:2008 ("Photobiological safety of lamps and lamp systems"). Following the definition of the risk grouping system of the mentioned IEC standard, the LEDs mounted on this family fall into the class "Low Risk (RG1 – No photobiological hazard under normal behavioral limitations)". Under real circumstances (regarding exposure time, pupils, observation distance), it is assumed that there is no endangerment to the eye from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect.

**RG2**

The evaluation of photobiological safety is carried out according to the standard IEC 62471:2008 ("Photobiological safety of lamps and lamp systems"). Following the definition of the risk grouping system of the mentioned IEC standard, the LEDs mounted on this family fall into the class "Moderate Risk (RG2)". Under real circumstances (regarding exposure time, pupils, observation distance), it is assumed that there is no endangerment to the eye from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect.

SKU SPECIFICATIONS

Product Code	Dimensions (mm)	CCT (K)	Lumens (lm)	Power (W)	Eff. (lm/watt)	Lens Angle (°)
<b>CRI 80</b>						
217000 Polar R31002/2700/14W/80/A15	D170 x H146 x Ø160mm±1mm	2700	1485	14W	107	15°
217001 Polar R31002/3000/14W/80/A15	D170 x H146 x Ø160mm±1mm	3000	1500	14W	108	15°
217002 Polar R31002/3500/14W/80/A15	D170 x H146 x Ø160mm±1mm	3500	1540	14W	110	15°
217003 Polar R31002/4000/14W/80/A15	D170 x H146 x Ø160mm±1mm	4000	1570	14W	113	15°
217005 Polar R31002/2700/14W/80/A30	D170 x H146 x Ø160mm±1mm	2700	1485	14W	107	30°
217006 Polar R31002/3000/14W/80/A30	D170 x H146 x Ø160mm±1mm	3000	1500	14W	108	30°
217007 Polar R31002/3500/14W/80/A30	D170 x H146 x Ø160mm±1mm	3500	1540	14W	110	30°
217008 Polar R31002/4000/14W/80/A30	D170 x H146 x Ø160mm±1mm	4000	1570	14W	113	30°
217010 Polar R31002/2700/14W/80/A45	D170 x H146 x Ø160mm±1mm	2700	1485	14W	107	45°
217011 Polar R31002/3000/14W/80/A45	D170 x H146 x Ø160mm±1mm	3000	1500	14W	108	45°
217012 Polar R31002/3500/14W/80/A45	D170 x H146 x Ø160mm±1mm	3500	1540	14W	110	45°
217013 Polar R31002/4000/14W/80/A45	D170 x H146 x Ø160mm±1mm	4000	1570	14W	113	45°
217015 Polar R31002/2700/14W/80/A60	D170 x H146 x Ø160mm±1mm	2700	1485	14W	107	60°
217016 Polar R31002/3000/14W/80/A60	D170 x H146 x Ø160mm±1mm	3000	1500	14W	108	60°
217017 Polar R31002/3500/14W/80/A60	D170 x H146 x Ø160mm±1mm	3500	1540	14W	110	60°
217018 Polar R31002/4000/14W/80/A60	D170 x H146 x Ø160mm±1mm	4000	1570	14W	113	60°
217020 Polar R31002/2700/20W/80/A15	D170 x H146 x Ø160mm±1mm	2700	2080	20W	104	15°
217021 Polar R31002/3000/20W/80/A15	D170 x H146 x Ø160mm±1mm	3000	2100	20W	105	15°
217022 Polar R31002/3500/20W/80/A15	D170 x H146 x Ø160mm±1mm	3500	2160	20W	108	15°
217023 Polar R31002/4000/20W/80/A15	D170 x H146 x Ø160mm±1mm	4000	2200	20W	110	15°
217025 Polar R31002/2700/20W/80/A30	D170 x H146 x Ø160mm±1mm	2700	2080	20W	104	30°
217026 Polar R31002/3000/20W/80/A30	D170 x H146 x Ø160mm±1mm	3000	2100	20W	105	30°
217027 Polar R31002/3500/20W/80/A30	D170 x H146 x Ø160mm±1mm	3500	2160	20W	108	30°
217028 Polar R31002/4000/20W/80/A30	D170 x H146 x Ø160mm±1mm	4000	2200	20W	110	30°
217030 Polar R31002/2700/20W/80/A45	D170 x H146 x Ø160mm±1mm	2700	2080	20W	104	45°
217031 Polar R31002/3000/20W/80/A45	D170 x H146 x Ø160mm±1mm	3000	2100	20W	105	45°
217032 Polar R31002/3500/20W/80/A45	D170 x H146 x Ø160mm±1mm	3500	2160	20W	108	45°
217033 Polar R31002/4000/20W/80/A45	D170 x H146 x Ø160mm±1mm	4000	2200	20W	110	45°
217035 Polar R31002/2700/20W/80/A60	D170 x H146 x Ø160mm±1mm	2700	2080	20W	104	60°
217036 Polar R31002/3000/20W/80/A60	D170 x H146 x Ø160mm±1mm	3000	2100	20W	105	60°
217037 Polar R31002/3500/20W/80/A60	D170 x H146 x Ø160mm±1mm	3500	2160	20W	108	60°
217038 Polar R31002/4000/20W/80/A60	D170 x H146 x Ø160mm±1mm	4000	2200	20W	110	60°
217040 Polar R31002/2700/27W/80/A15	D170 x H146 x Ø160mm±1mm	2700	2945	27W	110	15°
217041 Polar R31002/3000/27W/80/A15	D170 x H146 x Ø160mm±1mm	3000	2970	27W	110	15°
217042 Polar R31002/3500/27W/80/A15	D170 x H146 x Ø160mm±1mm	3500	3055	27W	114	15°
217043 Polar R31002/4000/27W/80/A15	D170 x H146 x Ø160mm±1mm	4000	3135	27W	117	15°
217045 Polar R31002/2700/27W/80/A30	D170 x H146 x Ø160mm±1mm	2700	2945	27W	110	30°
217046 Polar R31002/3000/27W/80/A30	D170 x H146 x Ø160mm±1mm	3000	2970	27W	110	30°
217047 Polar R31002/3500/27W/80/A30	D170 x H146 x Ø160mm±1mm	3500	3055	27W	114	30°
217048 Polar R31002/4000/27W/80/A30	D170 x H146 x Ø160mm±1mm	4000	3135	27W	117	30°
217050 Polar R31002/2700/27W/80/A45	D170 x H146 x Ø160mm±1mm	2700	2945	27W	110	45°
217051 Polar R31002/3000/27W/80/A45	D170 x H146 x Ø160mm±1mm	3000	2970	27W	110	45°
217052 Polar R31002/3500/27W/80/A45	D170 x H146 x Ø160mm±1mm	3500	3055	27W	114	45°
217053 Polar R31002/4000/27W/80/A45	D170 x H146 x Ø160mm±1mm	4000	3135	27W	117	45°
217055 Polar R31002/2700/27W/80/A60	D170 x H146 x Ø160mm±1mm	2700	2945	27W	110	60°
217056 Polar R31002/3000/27W/80/A60	D170 x H146 x Ø160mm±1mm	3000	2970	27W	110	60°
217057 Polar R31002/3500/27W/80/A60	D170 x H146 x Ø160mm±1mm	3500	3055	27W	114	60°
217058 Polar R31002/4000/27W/80/A60	D170 x H146 x Ø160mm±1mm	4000	3135	27W	117	60°
217072 Polar R31002/BVF/27W/80/A15	D170 x H146 x Ø160mm±1mm	BVF	2065	27W	77	15°
217073 Polar R31002/FBS/27W/80/A15	D170 x H146 x Ø160mm±1mm	FBS	1635	27W	61	15°

SKU SPECIFICATIONS

Product Code	Dimensions (mm)	CCT (K)	Lumens (lm)	Power (W)	Eff. (lm/watt)	Lens Angle (°)
<b>CRI 80</b>						
217074 Polar R31002/FZM/27W/80/A15	D170 x H146 x Ø160mm±1mm	FZM	1530	27W	57	15°
217075 Polar R31002/FSM/27W/80/A15	D170 x H146 x Ø160mm±1mm	FSM	1530	27W	57	15°
217092 Polar R31002/FSH/27W/80/A15	D170 x H146 x Ø160mm±1mm	FSH	2250	27W	84	15°
217076 Polar R31002/BVF/27W/80/A30	D170 x H146 x Ø160mm±1mm	BVF	2065	27W	77	30°
217077 Polar R31002/FBS/27W/80/A30	D170 x H146 x Ø160mm±1mm	FBS	1635	27W	61	30°
217078 Polar R31002/FZM/27W/80/A30	D170 x H146 x Ø160mm±1mm	FZM	1530	27W	57	30°
217079 Polar R31002/FSM/27W/80/A30	D170 x H146 x Ø160mm±1mm	FSM	1530	27W	57	30°
217093 Polar R31002/FSH/27W/80/A30	D170 x H146 x Ø160mm±1mm	FSH	2250	27W	84	30°
217080 Polar R31002/BVF/27W/80/A45	D170 x H146 x Ø160mm±1mm	BVF	2065	27W	77	45°
217081 Polar R31002/FBS/27W/80/A45	D170 x H146 x Ø160mm±1mm	FBS	1635	27W	61	45°
217082 Polar R31002/FZM/27W/80/A45	D170 x H146 x Ø160mm±1mm	FZM	1530	27W	57	45°
217083 Polar R31002/FSM/27W/80/A45	D170 x H146 x Ø160mm±1mm	FSM	1530	27W	57	45°
217094 Polar R31002/FSH/27W/80/A45	D170 x H146 x Ø160mm±1mm	FSH	2250	27W	84	45°
217084 Polar R31002/BVF/27W/80/A60	D170 x H146 x Ø160mm±1mm	BVF	2065	27W	77	60°
217085 Polar R31002/FBS/27W/80/A60	D170 x H146 x Ø160mm±1mm	FBS	1635	27W	61	60°
217086 Polar R31002/FZM/27W/80/A60	D170 x H146 x Ø160mm±1mm	FZM	1530	27W	57	60°
217087 Polar R31002/FSM/27W/80/A60	D170 x H146 x Ø160mm±1mm	FSM	1530	27W	57	60°
217095 Polar R31002/FSH/27W/80/A60	D170 x H146 x Ø160mm±1mm	FSH	2250	27W	84	60°
217224 Polar R31002/AMB2200/14W/80/A15	D170 x H146 x Ø160mm±1mm	AMB2200	1020	14W	73	15°
217225 Polar R31002/AMB2200/14W/80/A30	D170 x H146 x Ø160mm±1mm	AMB2200	1020	14W	73	30°
217226 Polar R31002/AMB2200/14W/80/A45	D170 x H146 x Ø160mm±1mm	AMB2200	1020	14W	73	45°
217227 Polar R31002/AMB2200/14W/80/A60	D170 x H146 x Ø160mm±1mm	AMB2200	1020	14W	73	60°
217228 Polar R31002/AMB2200/20W/80/A15	D170 x H146 x Ø160mm±1mm	AMB2200	1410	20W	71	15°
217229 Polar R31002/AMB2200/20W/80/A30	D170 x H146 x Ø160mm±1mm	AMB2200	1410	20W	71	30°
217230 Polar R31002/AMB2200/20W/80/A45	D170 x H146 x Ø160mm±1mm	AMB2200	1410	20W	71	45°
217231 Polar R31002/AMB2200/20W/80/A60	D170 x H146 x Ø160mm±1mm	AMB2200	1410	20W	71	60°
217232 Polar R31002/AMB2200/27W/80/A15	D170 x H146 x Ø160mm±1mm	AMB2200	1870	27W	70	15°
217233 Polar R31002/AMB2200/27W/80/A30	D170 x H146 x Ø160mm±1mm	AMB2200	1870	27W	70	30°
217234 Polar R31002/AMB2200/27W/80/A45	D170 x H146 x Ø160mm±1mm	AMB2200	1870	27W	70	45°
217235 Polar R31002/AMB2200/27W/80/A60	D170 x H146 x Ø160mm±1mm	AMB2200	1870	27W	70	60°
<b>CRI 93</b>						
217212 Polar R31002/AGI3000/12W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3000	735	12W	62	15°
217213 Polar R31002/AGI3500/12W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3500	780	12W	65	15°
217214 Polar R31002/AGI4000/12W/93/A15	D170 x H146 x Ø160mm±1mm	AGI4000	830	12W	70	15°
217215 Polar R31002/AGI3000/12W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3000	735	12W	62	30°
217216 Polar R31002/AGI3500/12W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3500	780	12W	65	30°
217217 Polar R31002/AGI4000/12W/93/A30	D170 x H146 x Ø160mm±1mm	AGI4000	830	12W	70	30°
217218 Polar R31002/AGI3000/12W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3000	735	12W	62	45°
217219 Polar R31002/AGI3500/12W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3500	780	12W	65	45°
217220 Polar R31002/AGI4000/12W/93/A45	D170 x H146 x Ø160mm±1mm	AGI4000	830	12W	70	45°
217221 Polar R31002/AGI3000/12W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3000	735	12W	62	60°
217222 Polar R31002/AGI3500/12W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3500	780	12W	65	60°
217223 Polar R31002/AGI4000/12W/93/A60	D170 x H146 x Ø160mm±1mm	AGI4000	830	12W	70	60°
217152 Polar R31002/AGI3000/17W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3000	985	17W	58	15°
217153 Polar R31002/AGI3500/17W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3500	1050	17W	62	15°
217154 Polar R31002/AGI4000/17W/93/A15	D170 x H146 x Ø160mm±1mm	AGI4000	1115	17W	66	15°
217155 Polar R31002/AGI3000/17W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3000	985	17W	58	30°
217156 Polar R31002/AGI3500/17W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3500	1050	17W	62	30°
217157 Polar R31002/AGI4000/17W/93/A30	D170 x H146 x Ø160mm±1mm	AGI4000	1115	17W	66	30°

## SKU SPECIFICATIONS

Product Code	Dimensions (mm)	CCT (K)	Lumens (lm)	Power (W)	Eff. (lm/watt)	Lens Angle (°)
<b>CRI 93</b>						
217158 Polar R31002/AGI3000/17W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3000	985	17W	58	45°
217159 Polar R31002/AGI3500/17W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3500	1050	17W	62	45°
217160 Polar R31002/AGI4000/17W/93/A45	D170 x H146 x Ø160mm±1mm	AGI4000	1115	17W	66	45°
217161 Polar R31002/AGI3000/17W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3000	985	17W	58	60°
217162 Polar R31002/AGI3500/17W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3500	1050	17W	62	60°
217163 Polar R31002/AGI4000/17W/93/A60	D170 x H146 x Ø160mm±1mm	AGI4000	1115	17W	66	60°
217164 Polar R31002/AGI3000/23W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3000	1330	23W	58	15°
217165 Polar R31002/AGI3500/23W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3500	1440	23W	63	15°
217166 Polar R31002/AGI4000/23W/93/A15	D170 x H146 x Ø160mm±1mm	AGI4000	1550	23W	68	15°
217167 Polar R31002/AGI3000/23W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3000	1330	23W	58	30°
217168 Polar R31002/AGI3500/23W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3500	1440	23W	63	30°
217169 Polar R31002/AGI4000/23W/93/A30	D170 x H146 x Ø160mm±1mm	AGI4000	1550	23W	68	30°
217170 Polar R31002/AGI3000/23W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3000	1330	23W	58	45°
217171 Polar R31002/AGI3500/23W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3500	1440	23W	63	45°
217172 Polar R31002/AGI4000/23W/93/A45	D170 x H146 x Ø160mm±1mm	AGI4000	1550	23W	68	45°
217173 Polar R31002/AGI3000/23W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3000	1330	23W	58	60°
217174 Polar R31002/AGI3500/23W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3500	1440	23W	63	60°
217175 Polar R31002/AGI4000/23W/93/A60	D170 x H146 x Ø160mm±1mm	AGI4000	1550	23W	68	60°
217176 Polar R31002/AGI3000/29W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3000	1680	29W	58	15°
217177 Polar R31002/AGI3500/29W/93/A15	D170 x H146 x Ø160mm±1mm	AGI3500	1820	29W	63	15°
217178 Polar R31002/AGI4000/29W/93/A15	D170 x H146 x Ø160mm±1mm	AGI4000	1960	29W	68	15°
217179 Polar R31002/AGI3000/29W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3000	1680	29W	58	30°
217180 Polar R31002/AGI3500/29W/93/A30	D170 x H146 x Ø160mm±1mm	AGI3500	1820	29W	63	30°
217181 Polar R31002/AGI4000/29W/93/A30	D170 x H146 x Ø160mm±1mm	AGI4000	1960	29W	68	30°
217182 Polar R31002/AGI3000/29W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3000	1680	29W	58	45°
217183 Polar R31002/AGI3500/29W/93/A45	D170 x H146 x Ø160mm±1mm	AGI3500	1820	29W	63	45°
217184 Polar R31002/AGI4000/29W/93/A45	D170 x H146 x Ø160mm±1mm	AGI4000	1960	29W	68	45°
217185 Polar R31002/AGI3000/29W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3000	1680	29W	58	60°
217186 Polar R31002/AGI3500/29W/93/A60	D170 x H146 x Ø160mm±1mm	AGI3500	1820	29W	63	60°
217187 Polar R31002/AGI4000/29W/93/A60	D170 x H146 x Ø160mm±1mm	AGI4000	1960	29W	68	60°
<b>CRI 95</b>						
217068 Polar R31002/FAS/27W/95/A15	D170 x H146 x Ø160mm±1mm	FAS	2080	27W	78	15°
217069 Polar R31002/FAS/27W/95/A30	D170 x H146 x Ø160mm±1mm	FAS	2080	27W	78	30°
217070 Polar R31002/FAS/27W/95/A45	D170 x H146 x Ø160mm±1mm	FAS	2080	27W	78	45°
217071 Polar R31002/FAS/27W/95/A60	D170 x H146 x Ø160mm±1mm	FAS	2080	27W	78	60°
<b>CRI 98</b>						
217100 Polar R31002/ART3000/27W/98/A15	D170 x H146 x Ø160mm±1mm	ART3000	1995	27W	74	15°
217101 Polar R31002/ART3000/27W/98/A30	D170 x H146 x Ø160mm±1mm	ART3000	1995	27W	74	30°
217102 Polar R31002/ART3000/27W/98/A45	D170 x H146 x Ø160mm±1mm	ART3000	1995	27W	74	45°
217103 Polar R31002/ART3000/27W/98/A60	D170 x H146 x Ø160mm±1mm	ART3000	1995	27W	74	60°

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